Program Description
Animal Care and Use Program

Authority for Biological and Biomedical Models (ABBM)

Hebrew University

Jerusalem, Israel

May, 2015
הצהרת המוסד:

אנו אחראים מבחינה חוקית, מדעית ומוסרית لكل היצורים החיים המתאימים לנו, ובהם בעלי החיים המשמשים למחקר. על כל האנשים העובדים עם בולי החיהброור הבמחקה ל脓וגר "שثمان" ויהו התפילה במחזור包围י — רפואת בעלי חיים - השפעים הנכון לה זיהי מעורר.

ערנות נאותה, גרימת כאב מינימלי וטיפול אנושי בחיות מעבדה דורשים שיפוט מקצועי ומדעי המבוסס על מחקרים וручוכם המכללים לכל על הנקודות ויתודות על הוראות המוסד והנחיות המוסדות.

אין לערוך ניסוי בבעלי חיים בגודל של לשוק פאראל מפארא תורמה מנדוק.

לעשות ניסוי בבעלי חיים בגודל של לשוק פאראל מפארא תורמה מנדוק, כשר לא אשר לשלושה מתים חירום בדרכםחלEntryPoint. אם לא אשר לשלושה מתים חירום בדרכםחל EntryPoint, יש לשלושה מתים חירום בדרכםחל EntryPoint, יש לשלושה מתים חירום בדרכםחל EntryPoint.

הנהלת המוסד על הוועדה הפנימית לטיפול בחיות ניסוי (להלן "הוועדה הפנימית") ובדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מותרת בגורם בדרכו חתימה או בחינה על העדיפות מوتر

PREFACE
To:
Researchers at the Hebrew University who conduct experiments on animals

Dear Colleagues,

Re: **Experiments on animals: applications for approval for experiments and reports on experiments**

The Law for the Prevention of Cruelty to Animals (Experiments on Animals), 5754 -1994, and the Rules for the Prevention of Cruelty to Animals (Experiments on Animals) 5761 - 2001 requires of the University and its researchers the following:

1) No experiments on animals will be conducted if there are appropriate alternatives.
2) Animal experimentation (vertebrates, except man) will be conducted only by a researcher who has been authorized for this work by the University Committee, and who has had training in the minimization of animal suffering in accordance with the regulations.

   (A) A researcher so authorized who wishes to conduct experiments on animals must receive approval for the experiment from the University Committee via the Campus Committees, established according to law.

   (B) All experiments must receive prior written approval from the Committee. For experiments designated solely for teaching, approval from the Teaching Committee must first be obtained and, following receipt of such approval, a permit must then be requested from the University Committee.

   (C) By law, the researcher in charge of the experiment is responsible for obtaining written approval and for full reporting within the designated time period.

3) Experimentation on animals contrary to the regulations stated by law, or deviation from the granted approval, is a criminal offense punishable by one year in prison.

4) The University Committee has published its regulations, as detailed in this booklet.

Please follow all rules required by law and by University regulations, so that neither you nor the Institution will be liable to a lawsuit.

Sincerely,

Peppi Yakirevitz, advocate
Legal Counsel to the University
January 2004
University Policy Regarding Animals in Research and Teaching: An Ethical Attitude to Animals

We are legally, scientifically and morally responsible for all living creatures dependent on us and this includes animals used for teaching or experimentation. Therefore all persons working with animals - whether in maintenance, production, research or teaching - must ascertain that the care will always be the best available by adhering to these following three well-known principles:

a. **Replacement**: no experiment will be conducted on animals if the scientific purpose of that experiment can be achieved by the use of reasonable alternatives, and if this is impossible, use will be made of animals which are as low as possible on the philogenetic scale.

b. **Reduction**: use shall be made of the smallest possible number of animals which will enable a scientifically valid result.

c. **Refinement**: every possible means should be taken in order to minimize the discomfort and/or suffering that is caused to the animals as a result of the experiments on them.

Appropriate maintenance, minimal pain and the humane care of laboratory animals requires professional and scientific judgment, based on knowledge of the general requirements of the species, as well as the specific requirements of the research or teaching involved.

In this document, any reference to "animals" or "living creatures" is to vertebrates alone.

Suitable housing and equipment in good order are essential for the proper maintenance of animals which are being used for experiments, but of more importance is the wise judgment and genuine concern of all those who come into contact with the animals.

The Responsibility of the University

Without detracting from the responsibilities of the researcher performing experiments on animals (according to the Law for the Prevention of Cruelty to Animals (Experiments on Animals), 5754 – 1994 and according to the regulations which have been determined according to this law), the University sees itself responsible for:

A. All activities with animals destined for research and/or teaching which are carried out on its premises.

B. All activities with animals by University staff who are carrying out assignments beyond its premises (although not when they come under the responsibility of other Council-authorized institutions).

The responsibility for ensuring the observance of the conditions and instructions resulting from the requirements of the above law and regulations has been given by
the University to the University Ethics Committee for the Care and Use of Laboratory Animals.

This committee, headed by the Vice President for Research and Development, directs the campus ethics committees for the care and use of laboratory animals, and supervises their activities, which mainly consists of granting permits to carry out specific experiments on animals. The chairs of the campus committees are members of the University Committee.

Obligatory Authorization for all Activities with Animals

Taking into consideration the obligations which derive from the laws of the State and from agreements with funders of research, and in light of the University's desire to promote research, together with its concern for the well-being of animals, the University has decided as follows:

All activities connected with animals (their reception, removal, care and experimentation*) which is carried out on University premises by anyone who is present on these premises (as well as by University employees and those acting beyond its premises on the University's behalf), will be performed only after prior written authorization by the authorized functionary:

1. The campus ethics committees for the care and use of laboratory animals are authorized to give permission for the conduct of specific experiments on animals on their campuses and/or by researchers from these campuses.
2. The administration of the Authority for Animal facilities is authorized to permit the introduction of animals into the University, their reproduction, their removal from the University and their ongoing maintenance.

The above-mentioned requisite authorizations are obligatory both on all researchers who are carrying out research and on all those responsible in the University for the laboratories and apparatus with which work on animals is carried out.

*In the above-mentioned approach of the University, the term "experiment" includes any activity using animals whose purpose is the generation of information from the animals or from their interaction with the environment (including: experimentation, observation, preparation for observation, examination, etc) for the purposes of research and/or instruction.
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PREVENTION OF CRUELTY TO ANIMALS LAW (EXPERIMENTS ON ANIMALS) 5754-1994
And
PREVENTION OF CRUELTY TO ANIMALS RULES (EXPERIMENTS ON ANIMALS) 5761-2001
Program Description

Section 1. Introduction

A. State the name of the program unit and, if applicable, its parent organization. List all organizations (schools, centers, etc.) included within the program unit.

Parent Organization: The Hebrew University
The program unit is The Authority for Biological and Biomedical Models (ABBM)
Organizations included:
1) Ein Carem Campus (Faculty of Medicine, Faculty of Dentistry, School of Pharmacy, Hadassah Medical Center
2) E. Safr (Givaat Ram) Campus (Faculty of Life Sciences).
3) Mount Scopus Campus (Faculty of Social Sciences).
4) Rehovot Campus (Agriculture Faculty)

B. Give a brief overview of the institution, its purpose and how the animal care and use program relates to the mission of the institution.

B. Overview and Mission

The Hebrew University (HU) of Jerusalem was opened on April 1, 1925, as a non-profit organization. There are more than 24,000 students enrolled at the University, including 12,000 undergraduates, 7600 master's degree students, 2,600 doctoral candidates, 800 students at the Rothberg School for Overseas Students, and in certification and other programs. Students are supported by 1,200 tenured academic faculty members and over 1,500 full-time administrative and technical staff. Schools include: Jerusalem School of Business Administration, Hebrew University-Hadassah School of Dental Medicine Founded by the Alpha Omega Fraternity, School of Education, School of Engineering and Computer Science, Rothberg International School, School of Library, Archive and Information Studies, Hebrew University-Hadassah Medical School, Henrietta Szold-Hadassah-Hebrew University School of Nursing, School of Nutritional Sciences, Hadassah-Hebrew University School of Occupational Therapy, School of Pharmacy, Braun Hebrew University-Hadassah School of Public Health and Community Medicine, School of Public Policy, Paul S. Baerwald School of Social Work, and Koret School of Veterinary Medicine.

Animal research activities are supported by the Authority for Biological and Biomedical Models (ABBM). ABBM is a service unit, which lays at the basis of biological-medical research at the Hebrew University. The ABBM was founded in order to provide the university's management a professional managerial tool that will allow it to better operate and develop the research means used in laboratory animal research. ABBM duties include the purchase and caring of multiple species of animals, the breeding of genetically modified rodents and other special strains, supplying histo-pathology services, providing courses and training in laboratory animal
medicine and the ethics of their use in biomedical sciences, consultation services to researchers, and professional input to the Institutional Animal Care and Use Committees.

C. Describe which are the primary standards and other regulations and guidelines are used as standards for the institutional animal care and use program and how they are applied.

All animal related research at the HU is conducted based on the following regulations:

- The Prevention of Cruelty to Animals Law (Experiments on Animals) 5754-1994
- Israeli rules regarding animal welfare (Experiments on Animals - 5761-2001)
- Guide for the Care and Use of Laboratory Animals (Guide), NRC, eights edition, 2011 (which is recognized by the Israeli law (Experiments on Animals - 5761-2001), as the legal document for housing animals and conducting experiments.
- Regulations and Instructions issued by the Israeli National Council on Animal Experimentation (Appendix 6)
- Federation of Animal Science Societies (FASS) Guide for Agricultural Animals
- The Hebrew University Guidelines for the Use of Animals in Experiments, Research and Teaching

D. Describe the organization and include an organizational chart or charts (as an Appendix/Appendices) detailing the lines of authority from the Institutional Official to the Attending Veterinarian, the Institutional Animal Care and Use Committee/Oversight Body (IACUC/OB), and the personnel providing animal care. Please include the title, name (Note: For individuals whose information is publically available, provide the titles and names; for individuals whose information is not publically available, you may provide titles only.), and degree (if applicable) of each individual at the level of supervisor or above. Names of animal care staff below the title of supervisor need not be included, but the titles and number of animal care personnel under each supervisor should be included. If animal care responsibility is administratively decentralized, the organizational chart or charts must include all animal care programs, indicating the relationship between each administrative unit and personnel, the Attending Veterinarian, and the Institutional Official.

Research using animals is conducted at four different academic centers: Ein-Carem – Faculty of Medicine and the Hadassah Medical Center, E. Safra (Givaat Ram) – Institute of Life Sciences, Mount Scopus – Department of Psychology, and Rehovot – Faculty of Agriculture and Koret School of Veterinary Medicine. To ensure that all units will not operate as separate units, and in order to avoid multiple tasks, uncontrolled activities and charging unreal costs, the Authority for Biological and Biomedical Models (ABBM) conducts a managerial and a control system. On 11.1.2001 the executive board of the Authority for Biological and Biomedical Models decided that all areas of the Authority would be under its supervision. The ABBM is responsible for their maintenance and compliance to the research demands. Each campus has an Ethics sub Committee (IACUC) (only Mount Scopus – Department of Psychology and E. Safra – Institute of Life Sciences are united under one committee). The IACUCs serve also as Animal Housing Committees that guide the faculty animal research. All three sub-committees report to the HU IACUC.
The organizational chart for the unit is provided as Appendix 1a
The organizational chart for the IACUC relationships is provided as Appendix 1b

The line of authority commences from the top with Professor M. Ben-Sasson, Board of Director Chair and Hebrew University (HU) President. Reporting to Professor Ben-Sasson is Professor Isaiah Arkin - the HU Vice President for Research and Development who also has been delegated as the Institutional Official (IO) and academic chair of the ABBM, Mrs. Billy Shapira – HU vice president for Administration and CEO, and Prof. Abraham Fainsod HU faculty and IACUC chair. All three persons are members of the ABBM board of directors. Reporting to Professor Arkin and to the board is Dr. Rony Kalman (DVM, PhD), ABBM Director General and Attending Veterinarian. Reporting to Dr. Kalman are three veterinarians: Dr. I. Uzi (DVM) who serves also as the ABBM deputy director and Drs. Y. Dagan (DVM), and N. Eshkol (DVM). Reporting to Dr. I. Uzi are Mr. E. Lorenzo and Mr. A. Meron as supervisors for the largest rodent research unit at the Faculty of Medicine (about 3900 rodent cages) and Mrs. Y. Valitov, the supervisor for the Sharet Institute unit (about 1000 rodent cages).

E. Identify the key institutional representatives (including, but not limited to, the Institutional Official; IACUC/OB Chairperson; Attending Veterinarian; animal program manager; individual(s) providing biosafety, chemical hazard, and radiation safety oversight; etc.); and individuals anticipated to participate in the site visit.

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<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Title</th>
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<tr>
<td>ABBM Academic Chair &amp; IO</td>
<td>Prof. I. Arkin</td>
<td>HU VP for R&amp;D &amp; Chairman of the Authority for R&amp;D, IO</td>
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<tr>
<td>Member of the ABBM Board of Directors</td>
<td>Mrs. B. Shapira</td>
<td>HU VP &amp; CEO</td>
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<tr>
<td>HU IACUC Chair</td>
<td>Prof. A. Fainsod</td>
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<tr>
<td>Faculty of Medicine(Ein Carem) IACUC Chair</td>
<td>Prof. I. Nussinovitch</td>
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<tr>
<td>Faculty of Life Sciences (E. Safr) &amp; Faculty of Social Sciences (Mount Scopus) IACUC Chair</td>
<td>Prof. J. Yarom</td>
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<tr>
<td>Faculty of Agriculture (Rehovot) IACUC Chair</td>
<td>Dr. S. Mabjeesh</td>
<td></td>
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<tr>
<td>HU R&amp;D US affairs coordinator</td>
<td>Mrs. Ruth Fish</td>
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<td>Biological safety officer</td>
<td>Dr. O. Grafstein</td>
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F. Briefly describe the major types of research, testing, and teaching programs involving animals and note the approximate number of principal investigators and protocols involving the use of animals.

Programs that involve animals at the HU relate to a broad spectrum of Medicine and Life Sciences. Research covers both basic science as well as applicative medical studies performed by the HU researchers and the Hadassah Medical Center.

Major research areas include:
1) Ein Carem Campus (Faculty of Medicine, Faculty of Dentistry, School of Pharmacy, Hadassah Medical Center) – Immunology, Pharmacology, Anatomy and Cell Biology, Biochemistry, Clinical Microbiology, Physiology, Cancer Research, Molecular Biology, Genetics, Pathology, Parasitology, Gene Therapy, Bone Marrow Transplantation, Cancer Immunotherapy and Cell Therapy, Bone Calcium and Metabolism Research, Embryonic Stem Cells, Specific disease research (Diabetes, Lupus, IBD, Cardiovascular Disease)
2) E. Safra Campus (Faculty of Life Sciences) – Neurobiology, Biochemistry, Molecular biology, Genetics.
3) Mount Scopus Campus (Faculty of Social Sciences) - Psychology.
4) Rehovot Campus) - Nutrition, Microbiology and Parasitology

Major teaching programs involving animals include:
1) Physiology for medical students (rats)
2) Pharmacology for medical students (rats and GP)
3) Peripheral nerve functions for medical, pharmacology, medical science and biology students (Frogs)
4) Ethical use of Laboratory animals – Accreditation courses for researchers (all the species used in the university)
5) Life saving procedures for medical doctors (sheep)

Number of principal investigators with animal research permits (Divided according to the location of their animal related activity) as recorded in 2014:
1) Ein Carem Campus - 347 (HU and Hadassah Medical Center researchers)
2) E. Safra Campus – 24 HU researchers
3) Mount Scopus Campus – HU researchers
4) Rehovot Campus 25 HU researchers

Number of active protocols as of January 2014 (approved in the past 4 years): 1027
Number of new protocols approved and ratified:

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<td>Ein Carem Campus</td>
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<td>99</td>
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<td>E. Safra Campus</td>
<td>22</td>
<td>24</td>
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<tr>
<td>Mount Scopus Campus</td>
<td>4</td>
<td>0</td>
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<tr>
<td>Rehovot Campus</td>
<td>12</td>
<td>15</td>
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Section 2. Description

I. Animal Care and Use Program

A. Program Management


Describe how program needs are clearly and regularly communicated to the Institutional Official by the Attending Veterinarian, IACUC/OB, and others associated with the program.

The Institutional Official is the chair of the ABBM. He is a member of the Board of directors of the ABBM, and receives regular reports from the attending veterinarian. The Attending Veterinarian, the ABBM Academic chair and the chairs of all the campus IACUCs are members of the HU-IACUC chaired by the HU-IACUC chair, Prof. Fainsod.
The Attending Veterinarian and the ABBM Academic chair and the chair of the HU-IACUC are members of the ABBM Board of directors.


i. Describe the institutional arrangement for providing adequate veterinary care. For each veterinarian associated with the program (including private practitioners), provide the veterinarian's name(s), list responsibilities, and how the veterinarian is involved in monitoring the care and use of laboratory animals. If employed full-time by the institution, note the percentage of time devoted to supporting the animal care and use program of the institution. If employed part-time or as a consultant, note the frequency and duration of visits.

ii. From the Israeli law:

- "veterinarian" - a veterinarian with a degree as specialist in the medicine of laboratory animals or a veterinarian whom the Director authorized for the purposes of this Law.
- "supervising veterinarian" - the person appointed as responsible for supervision under section 5(b): “After consultation with the Council the Minister shall appoint a veterinarian, who will be responsible for the supervision in institutions.”
- the institution employs a veterinarian, who supervises the health and welfare of the animals and provides medical treatment for them, is in charge of disease prevention, of the minimization of the animals' suffering before, during and after the experiments and - when necessary - their euthanasia, and who instructs staff members on these subjects.
- The supervising veterinarian or a public servant whom he appointed for this purpose may - after he so informed the Council - enter at any time any institution and any animal facility, on condition that he take the necessary steps to prevent interference with an experiment, and he may read any document, in order to check whether the provisions of this Law are complied with.

<table>
<thead>
<tr>
<th>Name of veterinarian (s)</th>
<th>If full time, indicate time dedicated to animal care and use program</th>
<th>If part time/consultant, indicate frequency and duration of visits</th>
<th>Responsibilities</th>
<th>Monitoring the care and use of laboratory animals</th>
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<tbody>
<tr>
<td>Name</td>
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<td>Responsibilities</td>
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<td></td>
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</tr>
<tr>
<td>Rony Kalman</td>
<td>Director of the Authority for Biological and Biomedical Models</td>
<td>Periodic audits and inspections of animal units. Performs semiannual IACUC visits. Review of ethic applications Writing of ABBM SOPs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ifat Uzi</td>
<td>ABBM Deputy Director – Manages the daily activities at the animal facilities leading the veterinary team and the veterinary technicians. In charge of the HM lab.</td>
<td>Supervision and management of animal facilities. Instruction of researchers, students and personnel. Membership in IACUC. Instruction in courses. Supervision of HM lab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yaron Dagan</td>
<td>In charge of the Ein Carem large animal In charge of the Ein Carem SPF Sharet unit.</td>
<td>Direct supervision and management of animal facilities. Participating in all large animal surgeries. Instruction of researchers, students and personnel. Membership in IACUC. Instruction in courses. Safety officer - ABBM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Indicate with a check mark all those that apply to the veterinarians institutional role and responsibilities:

| Noa Eshkol | 100% | In charge of Ein Carem SPF Main unit Medicine building 7th floor | Direct supervision and management of animal facilities. Instruction of researchers, students and personnel. Membership in IACUC. Instruction in courses |

1) Disease detection and surveillance, prevention, diagnosis, treatment, and resolution   
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

2) Handling and restraint; anesthetics, analgesics and tranquilizer drugs; and methods of euthanasia   
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

3) Surgical and postsurgical care   
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

4) Promotion and monitoring of animals physical and psychological well-being   
   - Plans/Advises ✓✓✓

5) Oversees adequacy of the husbandry program   
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

6) Involved in the review and approval of all animal care and use, e.g., via a role on the IACUC  
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

7) Training of institutional staff in the care and use of laboratory animals  
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

8) Assists in establishment and/or monitoring of occupational health and safety program  
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

9) Monitors for zoonotic diseases   
   - Plans/Advises ✓✓✓  
   - Oversees/Monitors ✓✓✓  
   - Conducts ✓✓✓

10) Advises on and monitors biohazard control policies and procedures relevant to the animal care and use program  
    - Plans/Advises ✓✓✓  
    - Oversees/Monitors ✓✓✓  
    - Conducts ✓✓✓

ii. List others (e.g., Principal Investigators, veterinarians serving as Principal Investigators, veterinary faculty/staff, technical staff, farm managers) who have a direct role in the provision of veterinary care and describe their responsibilities.

<table>
<thead>
<tr>
<th>Position Title</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yaara Mizrahi– Veterinary Technician</td>
<td>SPF rodents and large animals – performs experimental procedures, looks after animals in research and reports to the vet. Inspects</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Mariana Scherem</td>
<td>Veterinary Technician</td>
</tr>
<tr>
<td>Yechezkel Israeli</td>
<td>Veterinary Technician</td>
</tr>
<tr>
<td>Noa Danin</td>
<td>Primate trainer</td>
</tr>
</tbody>
</table>

c. **Collaborations [Guide, p. 15]**
Describe processes for assigning animal care and use responsibility, animal ownership and IACUC/OB oversight responsibilities at off-site locations (i.e., collaborations).

Not applicable

2. **Personnel Management**
a. **Training and Education**

Describe how the IACUC/OB provides oversight and evaluates the effectiveness of training programs. Describe how training is documented.

All researchers, students and employees are obligated to go through a basic course that includes both frontal teaching and hands-on lab. The syllabus of the course was approved by the National Council on Animal Experimentation. In addition, the ABBM conducts a series of supplementary courses for each species in research at the HU.

The IACUC performs semiannual inspections in the animal facilities and PI’s laboratories in which researchers work with animals, in order to evaluate active research programs. Inspections include PAM (Post Approval Monitoring) evaluations.

Each teaching program involving animals is performed only after being evaluated by both the respective faculty teaching committee and by the IACUC which authorizes the application.
The veterinarians are members in the IACUC and supervise the activities in all the animal facilities. Before the commencement of every research of severity level 4 and 5 (the two highest severity levels concerning animal welfare according the Israeli law), the entire research team meets with the veterinarian to ensure the knowledge of every member of their duties. The meeting is documented and a copy is kept in the animal room.

Before starting to work in an animal facility, each researcher is given instructions as to how to work in that specific unit and maintain the regulations. The meetings are specific to each facility and are held monthly by the veterinarians. Only following the meeting, the entrance to the unit through the use of a palm-reader is granted. Researchers that are not active for a period of over 6 months, have to repeat the training.

ABBM performs 2-3 workshops each year to all its employees with a focus on different guidelines and safety instructions each time. The workshops are documented in every employee's personal file.

**i. Veterinary and Other Professional Staff [Guide, pp. 15-16]**

Provide name and credentials of veterinary and other professional staff, including the veterinary personnel listed above, and describe their qualifications, training, and continuing education. Please do not provide curriculum vitae of personnel.

<table>
<thead>
<tr>
<th>Name/credentials</th>
<th>Describe qualifications, training, continuing education</th>
</tr>
</thead>
</table>
| R. Kalman DVM Ph.D. DECLAM | DVM – Bologna University  
Ph.D. – Dep. Of Physiology, Hebrew University  
DECLAM  
Until 1994 - Teach and coordinate the course for Experimental Surgery - a yearly academic course of 84 hours at the Faculty of Medicine, Hebrew University.  
Teach and coordinate an obligatory course on Ethical Use of Laboratory Animals - a semester course of 15 hours at the Hebrew University.  
Teach and coordinate the course on Laboratory Animals Medicine - a yearly academic course of 28 hours at the school of Veterinary Medicine, Hebrew University.  
Instructs and participates in the ABBM training sessions.  
IACUC member  
Member of Work Group 4 on ethics at COST B24  
Past President of ESLAV  
Council member of ECLAM  
Past President and current member of ILAF (Israeli Laboratory Animal Forum) – participating in ILAF’s annual 3-4 continuing education days.  
Member of AALAS  
Member of the Biological Safety Committee of Hadassah |
<table>
<thead>
<tr>
<th>Name</th>
<th>Details</th>
</tr>
</thead>
</table>
| I. Uzi DVM      | DVM – Hebrew University  
Israeli Laboratory Animal Medicine Board Certified  
Graduated the Utrecht course for European level C accreditation.  
Teach at the obligatory course on Ethical Use of Laboratory Animals - a semester course of 15 hours at the Hebrew University.  
Teach at the course on Laboratory Animals Medicine - a yearly academic course of 28 hours at the School of Veterinary Medicine, Hebrew University.  
National representative of ESLAV in Israel  
IACUC member  
Instructs and participates in the ABBM training sessions.  
Part of the internal control committee and member of ILAF (Israeli Laboratory Animal Forum) – participating in ILAF’s annual 3-4 continuing education days. |
| Y. Dagan DVM    | DVM- Hebrew University  
Teach at the obligatory course on Ethical Use of Laboratory Animals - a semester course of 15 hours at the Hebrew University.  
Teach at the course on Laboratory Animals Medicine - a yearly academic course of 28 hours at the School of Veterinary Medicine, Hebrew University.  
IACUC member  
Safety officer of ABBM  
Instructs and participates in the ABBM training sessions.  
ESLAV member  
Member of ILAF (Israeli Laboratory Animal Forum) – participating in ILAF’s annual 3-4 continuing education days.  
Resident in the Israeli program to become LAM Dip. |
| N. Eshkol DVM   | DVM- Hebrew University  
Teach at the obligatory course on Ethical Use of Laboratory Animals - a semester course of 15 hours at the Hebrew University.  
Teach at the course on Laboratory Animals Medicine - a yearly academic course of 28 hours at the School of Veterinary Medicine, Hebrew University. |
<table>
<thead>
<tr>
<th>Role</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine, Hebrew University.</td>
<td>IACUC member</td>
</tr>
<tr>
<td></td>
<td>Instructs and participates in the ABBM training sessions.</td>
</tr>
<tr>
<td>ESLAV member</td>
<td>Member of ILAF (Israeli Laboratory Animal Forum) – participating in ILAF’s annual 3-4 continuing education days.</td>
</tr>
<tr>
<td></td>
<td>Resident in the Israeli program to become LAM Dip.</td>
</tr>
<tr>
<td>Facility Supervisors</td>
<td>3 people – all trained on the job, all are very experienced as animal caretakers, all went through the ABBM ethics obligatory course, all participate in the ABBM training sessions. One is a DVM.</td>
</tr>
<tr>
<td>Veterinary Technicians</td>
<td>3 people – all are certified veterinary technicians (2.5 year course), all went through the ABBM ethics obligatory course, all participate in the ABBM training sessions.</td>
</tr>
<tr>
<td></td>
<td>Members of ILAF (Israeli Laboratory Animal Forum) – participating in ILAF’s annual 3-4 continuing education days.</td>
</tr>
<tr>
<td>Animal Caretakers</td>
<td>20 people – all trained on the job, all went through the ABBM ethics obligatory course, and all regularly participate in the ABBM training sessions.</td>
</tr>
<tr>
<td>Musa Mujahed – Lab technician</td>
<td>M.Sc. in Biology (minor in medical Technology)</td>
</tr>
<tr>
<td></td>
<td>Lab. Technician in the Clinical Biochemistry Department at Hadassah Hospital.</td>
</tr>
<tr>
<td></td>
<td>Participates and instructs in all ABBM training sessions.</td>
</tr>
<tr>
<td></td>
<td>Member of ILAF (Israeli Laboratory Animal Forum) – participating in ILAF’s annual 3-4 continuing education days.</td>
</tr>
<tr>
<td>Noa Danin – Primate trainer</td>
<td>Primate training and enrichment course in the Univ. of Texas, Training at the San Diego zoo, Chief Primate Trainer at the Jerusalem Zoo for the last 19 years.</td>
</tr>
<tr>
<td>Tanya Fomin – IACUC coordinator</td>
<td>Was an animal technician and as such went through the ABBM ethics obligatory course, and regularly participates in the ABBM training sessions. Participates in all the Ein Carem IACUC meetings and in direct contact with the campus IACUC chairs.</td>
</tr>
</tbody>
</table>

### ii. Animal Care Personnel [Guide, p. 16]

Indicate the number of animal care personnel. 28 (including supervisors)

Summarize their training, certification level and type, experience, and continuing education opportunities provided.
Supervisors - all trained on the job (although one of them is a DVM), all are very experienced as animal caretakers, all went through the ABBM ethics obligatory course, all of them participate in the ABBM training sessions.

Veterinary Technicians - all are certified veterinary technicians (2.5 year course), all went through the ABBM ethics obligatory course, all of them participate in the ABBM training sessions.
The technicians are members of ILAF (Israeli Laboratory Animal Forum) – a society that gathers all the senior Lab animal people in Israel and holds 3-4 scientific meetings every year.

Caretakers - all trained on the job, all went through the ABBM ethics obligatory course, all of them participate in the ABBM training sessions.

iii. The Research Team [Guide, pp. 16-17; 115-116; 122; 124]

1) **Describe the general mechanisms, by which the institution or IACUC/OB ensures that research personnel have the necessary knowledge and expertise in the animal procedures proposed and the species used.**

All researchers and students are obligated to go through a basic course that includes frontal teaching, hands-on lab and a final examination. Accomplishing the course entitles the person to perform research on rodents. In addition, the ABBM conducts a series of supplementary courses for each additional species used in research at the HU. The syllabi of the courses are authorized by the Israeli National Council on Animal Experimentation. The IACUC performs semiannual inspections of the animal facilities and research labs that take animals out of the animal facilities in order to evaluate active research programs. Inspections include PAM (Post Approval Monitoring) evaluations. Each teaching course and training program involving animals are performed only after being evaluated by both the respective faculty teaching committee and by the IACUC which authorizes the application.

The veterinarians are members in the respective IACUCs and supervise the activities in all the animal facilities. In cases where the IACUC feels there is a need for extra supervision or guidance, the researcher is instructed to perform the initial phases of the research with the presence of a veterinarian. Before the commencement of any research of severity level 4 and 5 (the two highest severity levels concerning animal welfare according to Israeli law), the entire research team meets with the veterinarian to ensure the knowledge of every member and that they understand their duties. The meeting is documented and a copy is kept in the animal room.

a) **Briefly describe the content of any required training.**

94810 Ethical Use of Laboratory Animals in Biomedical Sciences
1. Standardization: Explaining the environmental, genetic and microbiologic factors affecting laboratory animals and their behavior. The significance of the laboratory animal as a biological model and the importance of bringing them to a standardized state resulting in the use of a minimum number of animals. Expression of different variables on research results. Explaining the differentiation between random animals and hybrid animals and their significance to research

2. Ethics: The contribution of laboratory animals to biomedical research. The importance of an ethical balance between the research work and the laboratory animals being used. The importance of the 3R's in a research. The ethical approach and legislation in Israel and the regulation at The Hebrew University in accordance with Israeli Law

3. Biology of the mouse, rat, guinea pig, rabbit and hamster. The history of different species used in biomedical research. Explaining different species and strains and their importance to research. The significance of maintenance equipment types on receiving reliable results in research. The biology of various animals and the importance of anatomic variables for different types of researches.

4. Laboratory: various procedures (handling of animals, injections, bleeding techniques, PM).

b) Describe the timing of training requirements relative to the commencement of work.

Before the commencement of any work, the researcher must:
1. Obtain a personal license. Such license is obtained only after the researcher attends the basic course (that includes also a lecture concerning occupational health – zoonosis, allergens and other agents). As part of the course, the researcher has to pass the practical lab and the written exam at the end of the basic course and only then he receives the license to work with rodents. If requested to work with any species other than rodents, he/she must also perform a supplementary course specific to the requested species. The researcher receives a written license and a personal ethical I.D. number.
2. Has gone through a personal guidance with the vet of the animal facility where he/she will work. The guidance is about relevant working procedures at that animal facility. Only following the guidance, his/her palm is scanned and attached to the relevant palm reader (all animal facilities are equipped with palm readers).
3. In some cases the IACUC can request that a vet be present at the beginning of the experiment to ensure the capabilities of the researchers.
4. Before the commencement of any research of severity level 4 and 5 (the two highest severity levels concerning animal welfare according to Israeli law), the entire research team meets with the veterinarian to ensure the knowledge of every member with the required techniques and that they understand their duties. The meeting is documented and a copy is kept in the animal room.
5. Students can obtain a one-time temporary (up to 6 months) license if the work is conducted under the close supervision of a PI (who has a permanent license). All licencing is documented at the ABBM

c) Describe continuing education opportunities offered.

The ABBM sends out to all the animal users a monthly newsletter describing changes in regulations, relevant activities and any other useful information to all the researchers and students.
2) Describe the process(es) to ensure surgical and related procedures are performed by qualified and trained personnel. Who determines that personnel are qualified and trained for surgical procedures? What role does the Attending Veterinarian and IACUC/OB have in this determination? [Guide, pp. 115-116]

   1. Both the basic course and the supplementary courses (on species other than rodents) include a practical part, which is guided and monitored by experienced vets.
   2. An ABBM vet is present at all the large animal (rabbits and above) surgical procedures, ensuring the capabilities of the researchers.
   3. Our technicians provide guidance according to the researchers’ request.
   4. Semiannual inspections are performed and monitor this aspect (among others).
   5. Severity level 4-5 meetings evaluate the technical capabilities of the research group members.

3) Describe the training and experience required to perform anesthesia. [Guide, p. 122]

   Training guidelines and methodologies for use of anesthesia are set forth by the IACUC for each project and approved by the Veterinary staff. The electronic application form describes the possible adequate anesthetic procedures for each species according to the literature. The researcher needs to select an approved anesthetic procedure or explain to the IACUC if he wishes to perform a procedure which is not included among the approved ones.

   The training to perform anesthesia is provided by persons deemed qualified by the IACUC consequent to mandated training.

   In case of using anesthetic machine – the researchers are required to participate in a special guidance given by the veterinary staff.

4) Describe how the proficiency of personnel conducting euthanasia is ensured (especially physical methods of euthanasia). [Guide, p. 124]

   The training and experience procedures for performance of euthanasia are exactly the same as those described for anesthesia procedures above.


   Describe the institutional entities that are involved in the planning, oversight, and operation of the institutional occupational health and safety program.

   See below section i1)

i. Hazard Identification and Risk Assessment [Guide, pp. 18-19; See also Chapters 2 and 3 in Occupational Health and Safety in the Care and Use of Research Animals, NRC 1997]
1) Describe the process used to identify, evaluate and control experimental and other potential hazards (such as ionizing and non-ionizing radiation, chemical cleaning agents, animal bites, allergens, zoonoses, and venomous species) inherent or intrinsic to the use of animals by the institution. Describe how risks of these hazards are assessed and how procedures are developed to manage the risks.

1. The IACUC Electronic submission form includes an entire safety section that needs to be filled out by the researcher.
2. The HU employs within its safety department Environmental Health and Safety Officers (EHS officers). The EHSs are members of the campus IACUCs and as such can identify potential hazards and instruct accordingly.
3. The ABBM has a safety officer (Yaron Dagan DVM) who is involved in the evaluation and control of experimental and other potential hazards
4. Before the beginning of research that involves hazardous materials the researchers meet the responsible vet to coordinate the research according to the approved ethical application and the EHS instructions.
5. The senior staff of the ABBM meets on a monthly basis, and among other issues safety is also discussed (Cleaning materials, safety precautions etc.)
6. ABBM SOPs include references and instructions regarding the safe handling of all the materials used in the animal facilities
7. The HU safety personnel (EHS officers) visit the ABBM facilities and report deficiencies if found.
8. Training sessions for all ABBM workers include an occupational health and safety section. There is a written program and an attendance sheet for every such session. The content of each session is reviewed and approved by the safety department.
9. Safety is one of the aspects evaluated during the IACUCs semiannual visits.
   Recent safety-related activities in the animal facilities:
   2) Routine inspections and preventive maintenance of safety equipment, including: firefighting equipment, first aid kits, eyewash and shower stations, fume hoods and autoclaves.
   3) Review of all IACUC proposals by the Environmental Health and Safety Officer
   4) Safety consultations with the animal facility veterinarians and researchers, including providing written material regarding specific hazards.
   5) Site visits to the animal facilities and laboratories where animals are used.

2) Describe procedures for reporting and evaluating exposure to hazards, workplace injuries, etc.

   All cases of injury or hazardous materials exposure are reported to the PI who passes it on to the university authorities (safety department and HR). If it happened in the animal facility, the responsible veterinarian is also notified and the ABBM reports the case to the university authorities.

1) Describe how hazardous agents are contained within the study environment and in the animal housing area.

ABSL-2 experiments are performed in designated rooms according to SOPs. Everything that leaves the ABSL-2 room goes through an autoclave. Radioactive experiments are also performed in designated rooms in the animal facilities having passed through periodic governmental inspections to authorize the rooms. Everything that leaves these rooms, is treated according to the safety department instructions. In one case we have, animals are treated with radioactive agents (PET-CT) and the researcher returns the mice to the animal facility the day after. Experiments which include ionizing agents are performed in irradiation unit at the Sharet Building and in the large animal surgical room, according to the safety department instructions. Animals are returned to the animal facility immediately after treatment. ABSL-3 Not active for over 3 years.

2) Describe facilities that use hazardous agents. Note square feet/meters, number of animal rooms, and support spaces. In addition, describe design features, construction features, and special equipment, especially as they relate to hazard containment. Note if, and how, exhaust air is treated. If special facilities are not available and animals exposed to hazardous agents are housed within conventional animal rooms, so note.

The facilities that use hazardous agents include:
In Ein Carem facilities there are five animal rooms:
- ABSL-2 pathogen room in the 7th floor. About 10 Sq. m. Equipped with a biological hood.
- Two rooms designated for radioactive experiments in the 7th floor facility. Total of about 10 Sq. m. Built according to the safety department instructions.
- ABSL-3 room - not active.
- Large animal surgery – Workers are equipped with irradiation exposure badges.
In E. Safra there is one ABSL-2 rooms in the basement area. About 8 Sq. m. Equipped with a biological hood. All ABSL-2 rooms have a separate set of gowns, shoe covers, gloves.
PET-CT lab in Sharet Building – 2 rooms designated for radioactive experiments (about 20 Sq. m.). Workers are equipped with irradiation exposure badges.

3) Describe the oversight process and husbandry practices in place to ensure personnel safety, including any personal protective equipment provided when work assignment involves hazardous agents.

ABSL-2 rooms – workers and researchers have designated PPE. There is a specific work instruction in place and people are trained accordingly.
Radioactive rooms – before every research is performed there is a meeting with the safety officer for instructions. The work is carried out by the researchers themselves. The equipment required is supplied by the animal facility or by the researcher, as determined in a working group meeting before the experiment starts. The specific working procedures are determined at the same meeting according to the safety instruction for the specific experiment as provided by the safety department.
All hazardous areas are routinely inspected by the safety department, IACUC and ABBM vets.

5) **Describe any other circumstances in which animals or caging equipment are transported in common use corridors or elevators (e.g., have the potential to come in contact with individuals not associated with the animal care and use program), and measures taken to mitigate risks associated with such use.**

In cases when rodents are transported from the animal facility to research labs, for terminal procedures, they are put in disposable closed cardboard boxes in order to prevent exposure to the environment. In rare cases when they are planned on returning to the facility, the researchers are to use filter cages wrapped in plastic bags. Primates and other large animals are transported in a freight elevator. The elevator is locked for non-authorized personnel during transport. Primates are transported in the freight elevator in closed trolleys to avoid any contact of the animal or excreta with humans.

6) **If motorized vehicles are used for animal transport, describe how the driver is protected from exposure to hazards such as allergens or zoonoses.**

There is a complete separation between the driver cabin and the transport box.

iii. **Personnel Training [Guide, p. 20]**

1) **Describe educational program(s) to inform personnel about zoonoses, personal hygiene, allergies, and other considerations regarding occupational health and safety.**

   a) The basic course, all species specific courses and the course for veterinary students, all include a section regarding occupational health with specific attention to zoonoses, personal hygiene and allergies.
   b) All ABBM personnel go through routine periodical training that includes a safety section instructed by the Safety Department. This training is part of the regular training sessions that the ABBM holds.

2) **Describe special qualifications and training of staff involved with the use of hazardous agents in animals.**

   The ABBM deals with two types of hazardous materials:
   a) Microbiologically hazardous:
      i. ABSL 2 level – one room within SPF unit 3 at Ein Carem and one room at the SPF basement at Safra campus—The room is operated by authorized researchers and one animal caretaker. Researchers and caretaker are instructed by the responsible Vet according to written SOP’s.
      ii. ABSL 3 level – one stand-alone room separated from all other animal facilities. The room is operated by authorized researchers and one animal caretaker. Researchers and caretaker are instructed by the responsible Vet and the Biological Safety Officer according to a separate set of written SOP’s. The room has not been used for several years.
b) Radioactive hazardous: We have two rooms, one in the SPF unit 3 in Ein Carem and the other in the Large Animal Facility in Ein Carem. Both areas are used for intermittent (relatively rare) radioactive work according to the Safety Officer supervision. All the work in both rooms (including cage change, disposal of materials and carcasses) is done by the researchers in coordination with the ABBM vet (Dr. Dagan who is also the ABBM's safety officer) and the safety department. The lab technician working in the PET-CT room is a very well trained person in radioactive work (she does not make part of the ABBM personnel). She is supervised by the safety department.

The ABBM also has radiation workers:

Dr. Dagan and Mrs. Mariana Scherem who work with radiation in the experimental large animal surgery unit

All these workers are monitored by the safety department.
The researchers follow a set of written SOP's by the ABBM.

iv. Personal Hygiene [Guide, p. 20; Ag Guide pp. 4-5]

1) List routine personal protective equipment and work clothing provided for animal care personnel, technical staff, farm employees, etc. Describe arrangements for laundering work clothing.

a) All personnel receives work clothing and work shoes.
b) All workers are required to work with gloves.
c) In specific areas with aerosol hazard (cage wash area, horizontal hoods) workers are required to work with face masks.
d) At the ABSL 3 area entrance is permitted only if wearing designated gowns, gloves, designated shoes, masks and hats. This area is not active in the recent years.

Arrangements for laundering work clothing:

In-house facilities

ABBM protective measures table:

<table>
<thead>
<tr>
<th>Chemical/Activity</th>
<th>Face Shield</th>
<th>Goggles eye ware</th>
<th>N95 Face Mask</th>
<th>Nitrile gloves</th>
<th>PVC gloves</th>
<th>TYVEK or other Protective ware</th>
<th>Gown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virusolve – Concentrated</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Virusolve 5%</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Virusolve 5% - pressure hose*</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Bedding</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Phosphoric Acid</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+ (PVC</td>
<td></td>
<td>+</td>
</tr>
</tbody>
</table>
2) Describe provisions for washing hands, showering, and changing clothes, including instances where work clothes may be worn outside the animal facility.

All units are equipped with showers. Workers change from street clothes to uniforms when they arrive, and shower on their way home when changing back. Units are equipped with sinks in the central areas.

3) Describe policies regarding eating, drinking, and smoking in animal facilities.

Eating and Drinking is permitted only in the designated dining rooms. Smoking is prohibited in all areas.


1) Describe briefly institutional policies governing experimentation with hazardous biological, chemical, and physical agents, including the oversight process for the use of hazardous agents. Note: Written policies and standard operating procedures (SOPs) governing experimentation with hazardous biological, chemical, and physical agents should be available during the AAALAC site visit. If such policies and procedures are not available, please explain.

Any animal use protocol involving the use of hazardous agent in animals must be approved by the Environmental Health and Safety Officer as well as by other members of the IACUC. The EHS Officer (who is also an IACUC member, and therefore examines all applications), may seek additional input from other experts such as the Institutional Biosafety Committee. Any study involving radioactive agents in animals must receive approval from the campus Radiation Safety Officer as well as the IACUC. The Radiation Safety Office has a special application form for using radioactivity in animals that must be submitted by the PI in order to receive clearance.

See Appendix 4 – Animal Safety Guidelines.

2) Describe aspects of the health and safety program specifically for personnel potentially exposed to hazardous agents.

For any animal use protocol involving hazardous agents, the IACUC requires that the PI obtain additional safety approvals. The PI must submit detailed information and instructions about handling animals as well as their
caging and bedding materials after they are dosed with the hazardous material. The detailed instructions must be reviewed by both the HU Environmental Health and Safety Officer who is an IACUC member and the ABBM safety person (Yaron Dagan DVM) and shared with vet responsible for the unit where the work will take place and the relevant workers.

3) **Describe safety procedures for using volatile anesthetics and how waste anesthetic gases are scavenged**

   a) Large animal unit – volatile anesthetics are used only in anesthetic machines equipped with a scavenging tube connected to an exterior outlet.
   b) Rodent units – the only volatile anesthetic permitted is Isoflurane in anesthetic machines. Scavenging is done:
   
   - Through the use of chemical hoods.
   - Through the use of active charcoal scavengers connected to the vaporizers.
   - All rooms are well ventilated rooms (over 15 fresh air changes per hour).

5) **Describe the program for housing and caring for animals exposed experimentally to the hazardous agents noted above, with emphasis on management and safety practices for containment of each class of agent. Indicate how levels of personnel exposure are assessed.**

   In addition to the general safety instructions produced by the Hebrew University safety department, the ABBM has produced a set of specific housing and caring regulations:

   1. All the experiments are performed only after the University’s safety officer’s approval (through the IACUC process) and only after the ABBM’s safety officer has ensured that proper guidelines are given to the researcher.
   2. Only authorized personnel can enter the research area and work with the animals.
   3. Special facilities provided for use with hazardous agents:

   a) **ABSL 2 unit** – composed of one animal room (10 Sq. m.) and an entrance room (3 Sq. m.). The room is located in the SPF unit 3 at Ein Carem. It has a positive air pressure (to the soiled corridor) but lower than the central clean corridor. The animals are held in IVCs and the room is equipped with a biological hood (Class II type B). Floor is epoxy coated and walls are smooth and washable.

   b) **ABSL 2 unit used for only AAV injections**, composed of one animal room (20 Sq. m.). The room is located in the SPF basement at Safra campus. The animals are held in filter top cages and the room is equipped with a biological hood (Class II type B). Floor is epoxy coated and walls are smooth and washable.

   **ABSL 3 unit - The room is not in use for several years now.** The unit is composed of one animal room (16 Sq. m.) and an entrance room (3 Sq. m.). The room is located in a separate area of the building at Ein Carem. It has a negative air pressure. The animals are held in static micro isolators and the micro isolators are held in negative pressure cabinets from which the air is pushed out through a HEPA filter. The room is equipped with an autoclave and laminar flow hood (Class II type A). Floor is epoxy coated and walls are smooth and washable. Entrance is permitted only if wearing designated gowns, gloves, shoe covers, masks and hats.

   vi. **Personal Protection** [Guide, pp. 21-22]
1) **Describe training, equipment and procedures employed to reduce potential for physical injury, inherent to animal facilities (e.g., noisy areas, large quantities of chemicals such as disinfectants, ergonomics) or species used (e.g., nonhuman primates, agricultural animals).**

The HU safety department regularly issues regulations and instructions concerning safety and methods on how to avoid physical injuries. All employees work with designated clothes and shoes which they leave in the facility before going home. All new workers receive safety instructions before they begin to work at the different units. Workers shower before leaving the work place. All employees routinely receive a safety lecture (part of the ABBM training sessions) by the safety supervisor. Safety instructions signs are hanged in all animals facilities. Detailed instructions dealing with handling specific hazardous chemicals are given to research groups and ABBM workers before commencing the research. All work with hazardous agents is done in designated rooms or according to specific instructions issued by the safety department. Cages holding animals treated with hazardous agents are duly marked. Large Animal unit is equipped with adequate mechanical equipment for lifting heavy animals. In large animals fluoroscopy room there are designated lead robes and radiation tags.

Employees who work with sawdust are obligated to wear face masks (following a consultation with an occupational physician). In all animal facilities there are protective glasses to technicians' and researchers' use.

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1) **Describe the procedures for the maintenance of protective equipment and how its function is periodically validated.**

All chemicals are acquired by the unit with MSDS, and must be approved by the safety supervisor. All eyes washers are checked monthly and the inspection date is documented beside the washer. All the workers who are required to wear face masks – are being checked for the fit of the mask once a year (Fit Test). All HEPA filter change stations are checked routinely by our technicians and once annually by an outsides specialized company. The safety department performs periodical inspections of all safety equipment (fume hoods, autoclaves, first aid kits).

2) **Describe situations where respiratory protective equipment is available or required, such as cage washing facilities, feed mills, etc. Describe how such equipment is selected and how respirator fit testing and training in the proper use and maintenance of the respirator is provided.**
Employees who work with sawdust are obligated to wear N95 type face masks, including workers of the washing facilities. The type of the mask was determined by the HU safety department and an occupational MD who visited our facilities.
This issue is part of the training program.
In all cases of vapor hazard workers use an appropriate safety equipment according to the instructions of the safety department.
All the above employees go through an annual fit test.
All ABBM workers that work with animals and all researchers that work with NHPs are required to annually fill a medical evaluation sheet. The sheet is then examined by an MD from the Hadassah hospital – workers health monitoring unit, who decides if and what additional steps need to be taken.

4) Describe program policies to ensure personnel safety when working with rack/cage washers, other sanitation/sterilization equipment, and other heavy equipment such as scrapers, tractors, and farm machinery. Describe the training program that supports these policies.

- The rack washer can be opened from the inside (pushing the door) and there is an inside cabin cable that activates an alarm and stops the rack washer. The safety equipment is periodically checked.
This issue is part of the training program.
- Face masks are required in the cage wash area.


1) Identify the individual(s) and/or office responsible for developing and monitoring the medical evaluation and preventive medicine program.

Mrs. Sima Tobi - works at the HU HR department. She is in charge of occupational medicine, and makes sure it's according to the Israeli law and the HU health insurance policy.

2) Describe the categories of personnel (research staff, visiting scientists, animal care staff, students, support staff, etc.) included in the program.

Research personnel – All HU staff undergoes a baseline health monitoring program to work at the HU. All workers and students are under the surveillance, monitoring and coordination of the HU Human Resources Occupational Safety department and the relevant National Health Organizations. Researchers that work with dogs are required to get Rabies vaccination. Researchers that work with human fluids and blood or inject Hepatitis B virus to animals are required to get Hepatitis B vaccination.

ABBM personnel – All workers undergo a medical checkup upon starting their employment with the HU. All workers are under the surveillance, monitoring and coordination of the HU Human Resources Occupational
Safety department and the relevant National Health Organizations. Workers that are designated to work with primates undergo annual medical evaluation. All employees that are exposed to sow dust have to use face masks and go through an annual fit test. All ABBM workers that work with animals and all researchers that work with NHPs are required to annually fill a medical evaluation sheet. The sheet is then examined by an MD from the Hadassah hospital – workers health monitoring unit, who decides if and what additional steps need to be taken.

3) **Describe general features of the medical evaluation and preventive medicine programs, including pre-employment/pre-assignment health evaluation, periodic medical evaluations, immunization programs, and procedures for communicating health related issues.**

- All employees go through a medical examination before starting to work. All ABBM workers that work with animals and all researchers that work with NHPs are required to annually fill a medical evaluation sheet. The sheet is then examined by an MD from the Hadassah hospital – workers health monitoring unit, who decides if and what additional steps need to be taken.
- The ABBM director fills a pre-employment hazard evaluation form.
- Period TB test (or medical evaluation), tetanus vaccinations and rabies vaccination are performed to required personnel.
- Employees who are exposed to radioactivity are sent for periodic examinations.
- Annual fit test to employees exposed to sow dust.

4) **Describe special precautions or procedures for personnel exposed to potentially hazardous species (nonhuman primates, sheep, etc.) or agents (infectious agents, human origin tissues, chemicals/toxins, etc.).**

The HU safety department regularly issues regulations and instructions concerning safety and methods on how to avoid physical injuries. All employees work with designated clothes and shoes which they leave in the facility before going home. Workers shower before leaving the work place. All employees routinely receive a safety lecture (part of the ABBM training sessions) by the safety supervisor. Safety instructions signs are hanged in all animals facilities. Detailed instructions dealing with handling specific hazardous chemicals are given to research groups and ABBM workers before commencing the research. All work with hazardous agents is done in designated rooms. Cages holding animals treated with hazardous agents are duly marked. Special precaution which are taken for personnel who work with sheep:

a. Animals are vaccinated/tested for Q fever
b. Animals are vaccinated to Brucella
c. Prohibition of working with sheep in parturition

Special precautions which are taken for personnel who work with nonhuman primates.

a. Bite kits are present in every NHP facility.
b. The ABBM purchases primates only from two sources. Both are known to have never had TB or Herpes B.

c. All primates undergo annual clinical examination, TB testing (Mammalian tuberculin testing) and serology tests (herpes B, STLV, SIV, SRV).

d. All personnel that work with primates are requested to undergo annual medical evaluation.

Provision of additional training: All personnel working with primates must accomplish an NHP course addressing precautionary measures and potential health concerns with NHPs.

Provision of bite/wound kits and follow-up medical care:
All non-human primates in our facility come from herpes B and TB free colonies. Serology is performed on all new animals in our facility within 3 months of their arrival. We also repeat the exams on an annual basis. Our facility is free of herpes B, STLV, SIV, and SRV.
The HU is affiliated with the Hadassah Medical Center and our main primate unit is located just 300 meters from the emergency area.

Provision of additional protective clothing:
Entrance to primates during their quarantine period is allowed only to limited personnel wearing face masks, designated gowns, shoe covers and gloves.

Describe institutional methods for reporting and investigating animal welfare concerns.

In all animals facilities there is an animal use concern form for the researchers and students. The form has the IO’s fax number and can be sent anonymously.
The ABBM site contains all the veterinarians’ Emails.
The IACUC is in touch with researchers on a daily basis.

The employees are required to report to the supervising veterinarian any animal welfare concerns.

B. Program Oversight

i. The Role of the IACUC/OB [Guide, pp. 24-40]

i. IACUC/OB Composition and Function [Guide, pp. 17; 24-25]
Please provide a Committee roster, indicating names, degrees, membership role, and affiliation (e.g., Department/Division) as an appendix (See Appendix 2).

i. Describe Committee membership appointment procedures.

The IO is appointed by the HU President. Members of the HU IACUC are either ex-officio (chairs of the campus IACUCs, the university veterinarian, and the academic chair of ABBM) or appointed by the IO (who is also the vice president for R&D of the HU).
Chairs and members of the campus IACUCs are nominated by the respective deans. The vets on the committees are appointed by the ABBM.

ii. Describe frequency of Committee meetings.

All committees meet at least semi-annually to perform semi-annual programmatic review and facility inspections.

Typical committee schedules include:
- HU IACUC – 2-3 times annually
- Ein Carem IACUC – monthly (occasionally there are meetings of some of the members between full committee meetings to discuss special topics).
- E. Safra and Rehovot (agri.) – 2-3 times annually

iii. Describe the orientation, training, and continuing education opportunities for IACUC/OB members. [Guide, p. 17]

Most IACUC members are HU scientists and as such have gone through the HU accreditation courses for researchers. The veterinarians are ABBM members. Two of them are Laboratory Animal Medicine Diplomats, and the rest are in the process of becoming diplomats.

All committee members are given copies of the Israeli law, the "Guide", the HU regulations for conducting animal research and Hebrew Copy of the OLAW – Institutional Animal Care and Use Committee Guidebook. The director of ABBM conducts introductory meetings to new members going through the Israeli law, the "Guide" and the OLAW Guidebook.

Twice annually IACUCs are given a programmatic review from the ABBM director or the supervising veterinarian. The review includes a description of administrative, veterinary care, physical, occupational health changes and an overview of the latest semi-annual visits performed.

We have a subscription to the LabAnimal journal and the IACUC members receive the “protocol review” issues published in the journal on a monthly basis. The issues raised and the replies given, serve as a continuing education source for the members.


i. Describe the process for reviewing and approving animal study protocols, including research and teaching proposals. Include a description of how animal study protocols that do not involve a formal grant proposal are reviewed and approved (i.e., pilot studies or internally funded studies). Include a description of how the IACUC/OB weighs the potential adverse effects of the study against the potential benefits that may result from the research. Describe how protocols that have the potential to cause pain or distress to animals are reviewed, alternative methodologies reviewed, veterinary input solicited, and studies controlled or overseen. Specify how animals and experimental group sizes are justified.
1) **Applicant Requirements:**
Every person that performs research with laboratory animals must have an individual written authorization from the IACUC. Authorization is given by passing the HU accreditation courses that include oral lectures, practical labs and a written exam (the course is given by the ABBM). In addition to the basic course (which entitles researchers to work with rodents) the ABBM gives specific courses for other species researchers might use. Researchers arriving to the HU with certificates from other Israeli universities that have courses authorized by the National Council are entitled to a research authorization once their credentials have been confirmed by the IACUC.

Authorized personnel that have an academic status/degree at the HU receive the title of "Principle Investigators" (PI). In addition, researchers from the Hadassah Medical Center are considered PIs once authorized by Hadassah's head of R&D department.

In order to submit and sign ethical applications researchers must have authorization to work with the species in the application and must have a PI degree.

2) **Application Submission:**

PI's that want to perform animal research need to submit a research protocol through the HU computerized system. In order to access the system for the first time, they must receive an authorization from the IACUC administrator, they are given a password and their personal details are checked and entered into the system.

Each PI can electronically appoint research assistants that will assist him to fill in the application. Research assistants must also be authorized to perform animal research (pass the HU course). The submission of the application to the IACUC can be done only by the PI (using his username and password). This step ensures the PI's responsibility for the material described in the application.

Until signed and sent by the PI, the protocol is in a "draft" status, and the PI can perform any amendments he wishes. Once the protocol is signed and sent electronically, it receives a "Sent" status. From this moment on, nobody (PI or committee member) can change this version of the application. Any changes (due to committee requests or other) will be done in future versions of the application. This is done in order to prove in the future (if requested) the entire track the protocol went through from beginning to end.

Applications for teaching purposes must be approved by the faculty academic teaching committee in order to ensure their scientific validity and added value for the students. Only following the teaching committee’s approval, can the PI submit the application to the IACUC.

Applications for teaching purposes can be approved for a maximal period of one year.

3) **Committee Review and Approval Process:**
At this stage the committee administrator (each campus IACUC has an administrator) receives an e-mail notifying him/her that a research application is in the "Sent" status. The administrator gets into the system and all the members of the given committee receive an e-mail noting the title and species of a new application for their review. The committee administrator for each committee through written authority by the respective Chairs assigns three “designated” reviewers for each application and other members are referred to as “ordinary” reviewers. All the reviewers (designated and ordinary) receive the e-mail notification of the submitted application. Of the three designated reviewers, at least one must be a veterinarian (but all three can never be veterinarians). At this point the application receives an "In Review" status, which means that the designated reviewers have been assigned and that within two weeks they should read and comment on the application. All of the designated reviewers must provide a status for each application (for the list of possible statuses see below). Any "ordinary" reviewer can provide remarks to any application, and once this "ordinary" reviewer gives a remark he becomes a designated reviewer at the same status as the original designated reviewers. Every member of the IACUC (designated or ordinary) can, at any stage ask for a full convened meeting on an application (see below - Request for committee evaluation status). Every member of the committee can see all the remarks of all the members in that specific application and can add his own remarks if he wishes.

Each of the designated reviewers can give the application one of four statuses:

a) Accepted – means that this designated reviewer has no comment on the entire application

b) Accepted pending revisions – means that the reviewer has comments on the application, that if corrected to his satisfaction, the application will be accepted.

c) Request for committee evaluation – means that the reviewer would like the application to be reviewed at the next full committee meeting. All procedures regarding the application come to a stop until the meeting.

d) Request for rejection – means that the designated reviewer feels that the application should not be approved even if revised. In this case the committee chairperson is the only one who can actually reject the application by assigning a "rejected" status.

Status Accepted – Once all the designated reviewers have given an "Accepted" status, the application receives an "Approved – waiting for signed copy" status in the system, and the PI receives an e-mail from the system indicating the new status and requesting him to submit a signed paper copy to the IACUC administrator. The PI receives the reply only when all the designated reviewers have given their status. Once the signed paper copy is submitted, the IACUC administrator changes the status of the application to "Approved – waiting for committee ratification" and also releases the authorization to order animals in the system. The PI can start performing his research. The IACUC in its next meeting will ratify the application and the application will then receive its final status "Approved & ratified by Committee". If the committee raises any material questions regarding the application, than the researcher will receive a letter asking for clarifications and the status will not be changed to "Approved & ratified by Committee" until the question is solved.
All applications are ranked according to their potential severity to animals (potential to cause pain or distress) from 1 (less severe) to 5.

The HU has implemented in internal procedure (not required by law) that all applications of severity 4 and 5 cannot start the experimental procedure before the entire working group meets with the attending veterinarian to ensure that everybody is familiar with the expected clinical signs, with the methods and frequency of controlling the animals health status, with the humane end points, euthanasia and safety. At the end of the meeting a form is filled indicating the above. Such form is present in the animal room and the researchers are requested to sign in every time they act or control the animals.

Only after the meeting form is received by the IACUC administrator, the administrator releases the authorization to order animals in the system.

Status Accepted pending revisions – If one or more designated reviewers (or the ordinary reviewers) has any comment to the application, than the system will wait until all the designated reviewers have given their status and will then submit an e-mail to the PI notifying him that his application is at the Accepted pending revisions status, and that he must go into the system and correct the application. The PI gets into the system and he can see the last version/versions of his application and the comments made by the reviewers (the comments are separated by reviewer and by topic of the application). The PI needs to open a new version of the application (the old version and the comments are blocked and cannot be changed) and correct the points requested by the reviewers. The PI than submits the new version and only the designated reviewers receive an e-mail notifying them that they need to check a new version of the application (all the IACUC members can go into the new version but they are not notified). The reviewers can see the changes made by the PI in a "Track Changes" form. Each of them can now give the application one of the four statuses mentioned above.

Status Request for committee evaluation - If one or more designated reviewers (or the ordinary reviewers) think that the application should be discussed by the entire IACUC before a decision is made, than he gives a Request for committee evaluation status. The system will wait until all the designated reviewers have given their status and will then submit an e-mail to the PI notifying him and administrator that his application is at the Request for committee evaluation status. The application is blocked until the IACUC at its next meeting evaluates the application and decides how to continue.

Status Request for rejection – Committee members cannot individually outright reject an application but can ask for rejection. Once a committee member (designated or ordinary) requires a Request for rejection status he writes his reasons in the application (as a comment). The application receives this status and the PI is notified as is the IACUC chair person. The IACUC chair in consultation with the IACUC can accept the request and gives the application a status "Rejected". The PI is notified. The rejected application cannot be amended, copied or be active in any form.

The IACUC may decide to add additional measures in protocols that may require special attention. The measures consist of:
a) Instructing the PI to coordinate the first experiment in the presence of a veterinarian so that the vet will be able to report back to the committee and to make sure that the application corresponds to the reality.

b) Instructing the PI to perform a preliminary experiment on a pilot group and then either proceed if the results are as expected, or report back to the IACUC and ask to continue with the study.

c) Instructing the PI to submit a periodical report on the progress of the experiment.

4) **Convened IACUC Meetings:**
The Campus IACUC meets periodically: The Ein Carem committee on a monthly basis and the other committees 2-3 times annually. Additional meetings may be called pending interim business and to ensure that programmatic review and facility inspections are conducted on schedule, minimally semi-annually. The meetings are called by the administrators who also send out the list of applications to be discussed, approved and ratified. In addition, the campus IACUCs discuss a variety of professional issues concerning the changes in the law, ABBM updates, various reports (including of the semi-annual visits) and lectures from professionals (statisticians, regulatory experts etc.). In some occasions, researchers are invited to explain points in their application and assist the committee to reach a decision.

After the meetings the administrators issue the minutes and notify the researchers regarding their pending applications.

5) **Amendments:**
There are four scenarios which may mandate an amendment process:

a) **Renewal of an existing Protocol** – The Israeli law entitles a maximal authorization period of 4 years per protocol. IACUC approval cannot exceed 4 years. If the research continues over 4 years it must undergo a renewal process. In the case of expiration, a researcher may ask for a renewal of a Protocol. The application is submitted by the researcher to the IACUC administrator who forwards it to the IACUC members:

i. If the total length of the research (including the requested renewal period) is less than 4 years – The application is submitted for the review of one IACUC member

ii. If the total length of the research (including the requested renewal period) is over 4 years – The application is submitted for the review of at least three designated reviewers (or in some IACUCs – the entire committee) that need to review the entire protocol (in a similar manner to a new application).

b) **Modification of Experiment period** - In this case the researcher must submit a form declaring that he hasn’t used any animals. The reason is that the old period is to be terminated and all the approved animals are moved to the new period. The application is submitted by the IACUC administrator for the review of one IACUC member.
c) Modification of Experiment Title – Research titles and descriptions may vary in title due to requirements of Grant Committees. It is important to note that the Researcher will only be allowed to modify the Title field in this case. The application is submitted by the IACUC administrator for the review of one IACUC member.

d) Modification of a procedure – The researcher must submit a form accompanied by a detailed letter indicating the reasons for the change and the change in procedure. He also needs to address any clinical outcome that may become evident due to the change. The application is submitted in major amendments for the reviews of three designated reviewers (or in some IACUCs – the entire committee), and in the case of minor amendments to the IACUC vet that need to review the entire protocol (in a similar manner to a new application).

e) Adding animals to a protocol - Adding animals to an existing protocol is not allowed. If a PI needs more animals than the approved number, he must submit a completely new protocol.

In scenarios a) and d) the approved application receives a status of "Amended after Committee Approval" and need to be ratified by the entire IACUC at its following meeting.

6) Additional Oversight:

a) The Israeli Ministry of Health (by the National Council for Animal Experimentation) enforces a reporting policy which requires the submission of Protocols and reports on Animal use. All approved protocols (status "Approved & Ratified") are sent via interface to the National Council for Animal Experimentation electronic system. There are three types of reports sent on a routine basis:

- Annual report including:
  - Total number of animals used
  - Number of active IACUC permits
  - Number of new IACUC permits
  - Composition of the IACUC
  - Summary of IACUC activity

- Detailed annual report (animals used by IACUC permit, by period and by species)

- Annual veterinary activity report including:
  - Details of vets in the institute
  - Physical description of the animal facilities
  - Frequency of visits and controls in the facilities
  - Activity failures (sanitary, maintenance, health) and measures taken

- Quarterly veterinary activity report including:
  - Facility report (description of active facilities, species and number of cages)
Activity failures (sanitary, maintenance, health) and measures taken

b) The National Council's veterinarians make routine visits at the HU facilities making sure that all the activity is managed according to the Israeli law and the "Guide".

c) Protocols involving the use of animals for teaching purposes – Such protocols can be approved for a maximal duration of 1 year and need to be re-submitted annually. These protocols need to be approved by the Teaching Committee of the Faculty prior to their submission to the IACUC.

dd) All the personnel listed in the protocols of severity level 4 and 5 need to meet with an ABBM veterinarian, after being approved by the IACUC, but before commencing the research. Such procedure is meant to ascertain that the entire research group is aware of all the procedures and risks described in the application.

e) All the personnel listed in the protocols with biohazard implications need to meet with an ABBM veterinarian (or receive written instructions), after being approved by the IACUC, but before commencing the research.

f) Post approval monitoring is performed on approved applications by the IACUCs as part of the semiannual inspections.

ii. Describe process for reviewing and approving amendments, modifications, and revised protocols. If applicable, include a description of “major” vs. “minor” amendments.

**Amendments:** There are four scenarios which may mandate an amendment process:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Renewal of an existing Protocol</td>
<td>The Israeli law entitles a maximal authorization period of 4 years per protocol. IACUC approval cannot exceed 4 years. If the research continues over 4 years it must go over a renewal process. In the case of expiration, a researcher may ask for a renewal of a Protocol. The application is submitted by the researcher to the IACUC administrator who forwards it to the IACUC members:</td>
</tr>
<tr>
<td>i.</td>
<td>If the total length of the research (including the requested renewal period) is less than 4 years – The application is submitted for the review of one IACUC member</td>
</tr>
<tr>
<td>ii.</td>
<td>If the total length of the research (including the requested renewal period) is over 4 years – The application is submitted for the review of at least three designated reviewers (or in some IACUCs – the entire committee) that need to review the entire protocol (in a similar manner to a new application).</td>
</tr>
<tr>
<td>b) Modification of Experiment period</td>
<td>In this case the researcher must submit a form declaring that he hasn’t used any animals. The reason is that the old period is to be terminated and all the approved animals are moved</td>
</tr>
</tbody>
</table>
to the new period. The application is submitted by the IACUC administrator for the review of one IACUC member.

c) Modification of Experiment Title – Research titles and descriptions may vary in title due to requirements of Grant Committees. It is important to note that the Researcher will only be allowed to modify the Title field in this case. The application is submitted by the IACUC administrator for the review of one IACUC member.

d) Modification of a procedure – The researcher must submit a form accompanied by a detailed letter indicating the reasons for the change and the change in procedure. He also needs to address any clinical outcome that may become evident due to the change. The application is submitted in major amendments for the reviews of three designated reviewers (or in some IACUCs – the entire committee), and in the case of minor amendments to the IACUC vet that need to review the entire protocol (in a similar manner to a new application. See following table for Significant Change vs. Minor Change Guide

e) Adding animals to a protocol - Adding animals to an existing protocol is not allowed. If a PI needs more animals than the approved number, he must submit a completely new protocol.

In scenarios a) and d) the approved application receives a status of "Amended after Committee Approval" and need to be ratified by the entire IACUC at its following meeting.

### IACUC Significant Change vs. Minor Change Guide

<table>
<thead>
<tr>
<th>PROPOSED CHANGE</th>
<th>SIGNIFICANT CHANGE (requires IACUC review – minimum 3 members)</th>
<th>MINOR CHANGE (need to be reviewed/approved by a veterinarian)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Type of Surgery</td>
<td>• From non-survival to survival</td>
<td>• From survival to non-survival</td>
</tr>
<tr>
<td>Change in Timing of Endpoint</td>
<td>• Increase in discomfort</td>
<td>• Less / shorter discomfort</td>
</tr>
<tr>
<td>Change in Procedure (including blood collection)</td>
<td>• More invasive / more discomfort</td>
<td>• Less invasive / less discomfort</td>
</tr>
<tr>
<td>Change in, or addition of, Anesthetic, Analgesic, or Euthanasia Agent or Method</td>
<td>• Requires a protocol amendment if the change involves non-approved agents in the IACUC request form</td>
<td>• May be reviewed as a minor change if the change involves approved agents in the IACUC request form</td>
</tr>
<tr>
<td>Change in route of administration of</td>
<td>• Change to a route that is non-approved in the</td>
<td>• Change to a route that is approved in the IACUC</td>
</tr>
<tr>
<td>Change in route of approved test article(s)</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>• Change in route that is more invasive or may cause more discomfort</td>
<td>• Change in route to less invasive or less discomfort</td>
<td></td>
</tr>
<tr>
<td>Change or addition of different test articles (e.g. diet components, antigens, some pharmaceutical agents)</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• Substantively different from test articles already approved</td>
<td>• Innocuous and/or substantively similar to test articles already approved in protocol</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Change results in less invasiveness, less discomfort, or fewer side effects</td>
<td></td>
</tr>
<tr>
<td>Change in duration / frequency / number of procedures performed on an animal</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• ALWAYS requires a protocol amendment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in species</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• ALWAYS requires a protocol amendment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in number of animals used</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• ALWAYS requires a new protocol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in study objectives</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• ALWAYS requires a protocol amendment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in PI</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• ALWAYS requires a new protocol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor changes to approved non-survival procedure</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• Minor Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in total research duration</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• Requires a protocol amendment and IACUC review if the total length is over 4 years</td>
<td>• May be reviewed by a single IACUC member if the total length is less than 4 years</td>
<td></td>
</tr>
<tr>
<td>Change in research title</td>
<td>IACUC request form</td>
<td>request form</td>
</tr>
<tr>
<td>• May be reviewed by a single IACUC member</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. Special Considerations for IACUC/OB Review [Guide, pp. 5; 27-33]

i. Experimental and Humane Endpoints [Guide, pp. 27-28]
Describe how criteria for determining alternatives to experimental (humane) endpoints are developed, approved, and applied. Include a description of monitoring systems in place for studies for which information on alternative endpoints are not available.

- The researcher is obligated to fill in the electronic application form paragraph dealing specifically with human endpoints.
- We encourage the researcher to fill in a scoring table of clinical signs.
- For any approved applications at severity level 4 and 5 the entire research group meet with a veterinarian to discuss the issue of humane end points. A surveillance form is filled in according to the instructions of the veterinarian and must be found in the room where the animals are kept.
- Technicians are also guided to follow experiments' end points, not only in severe level experiments, but also in the less severe ones.

ii. Unexpected Outcomes that Affect Animal Well-being [Guide, pp. 28-29]
Describe how unexpected outcomes of experimental procedures (e.g., unanticipated phenotypes in Genetically Modified Animals) are identified, interpreted, and reported to the IACUC/OB.

Technicians, students and researchers report to the veterinarian about unexpected outcomes. The veterinarian requests the researcher to amend the already approved application or requests an IACUC discussion on this specific point.

Note: This section is to include only those protocols that require prolonged restraint. Brief restraint for the purpose of performing routine clinical or experimental procedures need not be described.

1) Briefly describe the policies for the use of physical restraint procedures or devices.

- HU instructions given to all researchers during the ethical course include instructions about holding animals in restraint devices for the shortest time possible.
- Researchers must mention the use of restraint procedures in the ethical request's special methods part.
- These procedures have to be approved by the committee.

2) Describe animal restraint devices that are used or have been used within the last three years. For each device, briefly describe the duration of confinement, acclimation procedures, monitoring procedures, criteria for removing animals that do not adapt or acclimate, and provision of veterinary care for animals with adverse clinical consequences.

Policies for approving the use of the restraint procedures:
PI's that require restraint have to specify the procedure in detail in their application. All such applications receive a severity level of 4 or 5 (5 is the highest severity level in Israeli low).
Primate physical restraint procedures:
Training period – Primates are trained to perform behavioral tasks by food restriction (see below). Follow-up during training includes: daily weighing, observation of general health status. Each day (up to 6 days a week) the animal is brought by its trainer in a primate chair from the animal facility to the lab. Upon performance of the tasks the primate receives a positive reinforcement (usually baby food plus additives – "Materna" baby powder). Training lasts as long as the animal is interested (starting from just a few minutes a day and up to 4 hours, usually 1-3 hours). This phase takes 2-4 months.
All the students that perform primate experiments undergo 3 stages of training themselves:
a) The general Ethics course of the HU including a written exam.
b) A secondary course which enables them to work with primates (including a short practical training).
c) Several sessions with a primate trainer from the Jerusalem Zoo (who visits the primate facility on a regular basis) and with other, experienced, students to teach them how to work and train primates.
Research period- Primates are observed daily by the animal caretaker and the ABBM vet and at any sign of illness the training/research is stopped. In addition the student (or a replacement student from the same lab) visits the animal daily either in order to take the primate to the lab or just for monitoring. During the entire restraint session, the animal is viewed by the lab personnel (one or more students).

Rabbit restraint: The animals are held on their back in a V shaped plastic restrainer for up to one hour. Front and hind legs are wrapped in thick fabric that forms a band attached to the restrainer.

Monitoring of physical restraint:
Daily (for rabbits – at every restraint) clinical observation and weighing is performed according to ABBM instructions (see below). The ABBM vets visit the laboratories to get an impression from the research facility and experimental conditions.

Note: One survival surgical procedure followed by a non-survival procedure is not included in this category.

1) Describe the institutional policy(ies) regarding multiple survival surgery (major or minor) on a single animal.

Historically, we have not had a request for multiple major survival surgeries. However, if one was received and approved by an IACUC it would receive special attention as follows: Applications involving major survival surgical procedures are given severity level 4 or 5 with all the extra care we give to such applications. All multiple major survival surgeries need to be listed in the “special procedures” section of the application and receive extra attention.
All the personnel listed in the protocols of severity level 4 and 5 need to meet with an ABBM veterinarian, after being approved by the IACUC, but before commencing the research. Such procedure is meant to ascertain that the entire research group is aware of all the procedures described in the application.
Note: One survival surgical procedure followed by a non-survival procedure is not included in this category.

2) Describe the procedure for approving multiple survival surgery (major or minor) and the criteria used to determine the potential impact on the animals’ well-being.

See above

3) Summarize the protocols currently approved that involve multiple major survival surgical procedures and the time allowed between procedures on the same animal. Describe the method of institutional monitoring.

We haven’t had any application with multiple major survival surgical procedures in the last 4 years.


1) Describe experimental situations that require food and/or fluid regulation. Note: This does not include pre-surgical fast. List title of the experiment(s), justification, species involved, and length and type of food/fluid regulation.

| experimental situations that require food and/or fluid restriction: |
|------------------|-----------------|-----------------|------------------|------------------|
| Title of Experiment | Justification | Species          | Length of Restriction | type of food/fluid regulation |
| All our primate experiments (performed by four PIs) | Training and performing higher brain function studies | M. fascicularis C. ethiops | Entire length of the study (several years) | Partial - food – at least 75 Kcal/kg/day |

2) Describe animal health monitoring procedures and frequency (e.g., body weight, blood urea nitrogen, urine/fecal output, food/fluid consumed).

In the beginning of the experiment, the primate is placed under food restriction, according to the protocol. Every primate has an instruction sheet on the animal room door indicating the type of restriction per that animal. Rooms/cages without an updated instruction get food ad-lib.

Food restriction - Water is given ad-lib. Primate is in restriction for 6 days a week, in which the animal gets food only during the training session. The food quantity is calculated based on the animal's weight (75 Kcal/kg/day) and given during session and upon return to the cage (dry primate chow). Even if an animal does...
not perform well during training, this quantity of food must be given. On Fridays after the session, the food in the cage is given freely (including fruits, vegetables, boiled eggs and seeds for enrichment) for 24 hours. Animal is placed in food restriction not more than 24 hours prior to the Sunday session.

If for any reason there is no session on a certain day, the daily food quantity is given to the animal before 4 PM.

3) Describe methods of ensuring adequate nutrition and hydration during the regulated period.

a) Daily observation –
   i. Researchers conduct a daily observation between 8-10AM. Observation includes looking for specific signs (according to a list prepared and published by the ABBM). Any abnormal sign is reported to the vet.
   ii. Researchers keep a daily report that includes their impression from the animal during session, the animal's weight, every procedure performed. If animal reaches a weight of 15% less than its weight on free water or food, the ABBM vet must be immediately consulted and food and water given ad-lib. Primates which are not in training will be weighed routinely. The monthly weighing chart is recorded in the animal's file.

b) Periodical tests –
The vet conducts annual tests on all primates. The tests (on anesthetized animals) include: full clinical examination, TB test, fecal test, CBC, Biochemical panel, serology (5 viruses). The animal is given an anti-vermin treatment (Ivermectin + Droncit)

Describe special considerations used by the IACUC/OB when reviewing field investigations of animals (non-domesticated vertebrate species), if applicable.

In every case of field investigations and working with wild life, the IACUC must receive permission from the Nature Reservation Authority. There is a full reference to this issue in the HU instructions manual.

Describe considerations given and guiding documents used by the IACUC/OB when reviewing “biomedical” and “agricultural” research projects involving agricultural species as study animals, if applicable.

The use of “agricultural” animals (sheep, swine) is done at the HU for biomedical (in Ein Carem) and agricultural (in Rehovot) research. Researchers must have the appropriate personal license for the species involved. Animals are purchased only from fully screened farms. Workers are instructed.

Describe institutional policies and/or oversight of animal reuse (i.e., on multiple teaching or research protocols). Summarize the protocols currently approved that involve the reuse of individual animals.

The Israeli law and the HU guidelines approve animal reuse in one of the following 2 cases:
- When the first experiment has a low severity score.
- When the second experiment is terminal.
A researcher's request for animal reuse must be mentioned specifically in the ethical request, must be approved by the committee, and reported separately to the National Council.
Financial reason is not an allowed consideration for reuse.


a. Describe mechanisms for IACUC/OB review of ongoing studies and periodic reviews (e.g., annual review, 3-year renewals if PHS funded, etc.).

Post approval monitoring is performed on approved applications by the IACUCS as part of the semi-annual inspections. IACUC members that visit the laboratories have specific forms for specific applications and perform PAM. The results are reported to the IACUC together with the other information given following the semi-annual inspections.

b. Describe the process and frequency with which the Committee reviews the animal care and use program and conducts facility and laboratory inspections. Detail any criteria used for exempting or varying the frequency of reviewing satellite holding facilities and animal use areas. If contract facilities or contractor-provided personnel are used, describe procedures used by the IACUC/OB to review such programs and facilities.

Each IACUC conducts a regular semi-annual inspection in all the animal facilities and in all the laboratories that take animals out from the animal facilities (even those which only take out pups to be immediately euthanized). Each IACUC conducts the inspections in all the territories under its supervision. The IACUC coordinator forms teams of two committee members (one of them is a vet, but when animal facilities are visited, never the supervising vet) and assigns places to visit. The team fills in a form that is filled, signed and submitted to the coordinator after the review. All the forms are grouped together, reviewed by the ABBM director and reported by the supervising vet to the campus IACUC in its next meeting. Following the meetings, the reports and the minutes of the meetings are sent to the chair of the HU IACUC.

c. Describe institutional responses to deficiencies noted on regulatory inspection reports (e.g., government, regulatory agencies). Note: Copies of all such inspection reports for the past three years (if available) should be available for review by the site visitors.
1. The HU as any other research institute in Israel is subject to inspections by the Israeli National Council on Animal Experimentation which performs the following inspections:
   a. The veterinarians of the Council inspect the animal facilities. Such inspections are done about 1-2 annually. If a deficiency is noted it is reported and the institute is requested to answer and correct. No official document is produced. In all the inspections done by the Council, the HU did not receive a request to correct any deficiency.
   b. All the approved protocols are submitted electronically to the scientific advisor of the Council. The advisor reviews the approved applications and sends a letter to the institute if any material questions or deficiencies are noted. The HU has received in the past some questions (never deficiencies) concerning approvals. These were all replied.
2. The State Comptroller’s office audited in 2011 the activities of the National Council on Animal Experimentation and the laboratory animal related research of 5 universities, including the HU. The report was very positive for the HU activities and brought up just a few very marginal points to be reviewed. The report published by the comptroller was discussed in the HU IACUC and at the ABBM Board, and rectifying measures were taken and reported back to the comptroller.

d. Describe other monitoring mechanisms or procedures used to facilitate ongoing protocol assessment and regulatory compliance.

1. ABBM veterinarians and technicians constantly monitor the activities in the animal facilities. Such routine monitoring includes following ongoing experiments (especially those of severity levels 4 and 5 which have follow up sheets in the animal rooms)
2. In some cases when clinical outcomes are not clear, IACUCs ask the researcher to conduct the preliminary experiment with the presence of an ABBM veterinarian

II. Animal Environment, Housing and Management
Note: Complete each section including where applicable, procedures performed in farm settings, field studies and aquatic environments, etc.

A. Animal Environment

1. Temperature and Humidity [Guide, pp. 43-45]

a. Describe briefly the heating and air conditioning system performance. Provide method and frequency for assessing, monitoring, and documenting animal room or housing area temperature and humidity that is appropriate for each species. If outdoor housing areas are used, so note.

Heating, cooling and ventilation are provided through centralized HVAC systems. All ventilation systems are ABBM dedicated and are not shared with any other areas. Cooling and heating is supplied either by dedicated
chillers or from the campus central units (or both – as backup systems).
Temperature and humidity are kept within the limits presented in the “Guide”. Ventilation in most cases is in higher levels than requested (up to 30 air changes per hour). Clean entrance areas, sterile supply areas and animal rooms are kept in positive pressure. Soiled corridors (in SPF units) and P3 unit are under negative pressure.

Monitoring systems:
1) Computerized systems – Most units are controlled by designated computerized systems. Systems control and report the following information:
   a. Temperature
   b. Humidity
   c. Air pressure compared with adjacent areas
   d. Lighting condition in the room
   e. Functionality of the HVAC system (cold/hot water temperature, filter conditions, fan operation).
   f. Opening and closure of doors
   g. Information regarding cage washers and autoclave function
   h. Drinking water pH.
The information can be viewed both from the veterinarians PCs at the HU as well as from their homes and cellular phones. The attending vet can evaluate the system from home, assessing the severity of a problem (if any) and correcting it from home or call for assistance.

2) Electronic alarm systems (Sensaphone) – provide information regarding ambient temperature in animal units.
   Once a parameter in one of the above computerized or electronic systems passes the pre-established limits, an alarm is set-on and calls several people (the attending vet, the ABBM maintenance person, private HVAC contractor). The attending vet (or one of the other ABBM vets) is the person who decides the urgency of the call and the measures that need to be taken (arrive on spot, call in the ABBM maintenance person, call in one of the HU central maintenance people, call in a private HVAC company – under contract with the ABBM).
   In the Zebra fish unit the researcher (the unit serves only one researcher) is also connected and participates in the decision making process.

3) Animal technicians fill in a daily activity report for each animal room. The report is filled during the morning visit and includes all ambient parameters including temperature and humidity

4) The ABBM maintenance person does routine checks of all HVAC systems and fills in a report submitted to the ABBM management.

5) The HU has a routine 24 hour maintenance person on call in each campus to monitor the central campus HVAC systems.

6) The private contractor who handles the HVAC systems in the Ein Carem and E. Safra campuses performs routine weekly checks on the systems and sends in their reports regularly.

7) The private contractor performs an annual check of temp, humidity, air changes, light and noise levels in all animal rooms of the ABBM.

8) Chicken and ruminants at Rehovot (Agricultural research) are housed in facilities with forced ventilation.
b. If temperature set points and/or environmental conditions are outside the thermoneutral zone for the species, describe the process for ensuring behavioral thermoregulation (e.g., nesting material, shelter, etc.) and/or IACUC/OB approved exception.

| In the rodents units we supply sawdust and a plastic tube. For breeding rodents and for nudes, we also supply cotton wool. |


a. Briefly describe the performance aspects of the ventilation system. Provide method and frequency for assessing, monitoring, and documenting the animal room ventilation rates and pressure gradients (with adjacent areas).

| See above. |

b. Describe ventilation aspects of any special primary enclosures using forced ventilation.

| IVC cages under positive pressure. |

c. If any supply air used in a room or primary enclosure is recycled, describe the percent and source of the air and how gaseous and particulate contaminants are removed.

| N/A 100% fresh air. |

3. Life Support Systems for Aquatic Species [Guide, pp. 84-87]

Provide a general description of institutional requirements for enclosures using water as the primary environmental medium for a species (e.g., aquatics). Describe overall system design, housing densities, and water treatment, maintenance, and quality assurance that are used to ensure species appropriateness. Please note that facility-specific tank design and parameter monitoring frequencies should be summarized in the Aquatic Systems Summary appendix (See Appendix 3).

| Amphibians: Tap water are being filtrated and held in the room before use for dechlorination and cooling down. There is a periodical monitoring over water quality. The animals are held in tanks where the water is filled manually and being changed 1-2 times weekly. |

| Zebra fish: Fish are held in a semi-closed automated system (Aquatic Habitats). Animal density is 9-10 adult fish for 1 liter of water. There is a daily automated and manual check of water quality, water flow in the system and room temperature. A phone alarm system for deviations from normal values alerts the investigator. The pH measuring system and conductivity are being calibrated every 30 days. Calibration is made according to the manufacturer instructions using calibrating solutions. |
Describe facility design features and other methods used to control, reduce, or prevent excessive noise and vibration in the animal facility.

Facility design features and other methods used to control, reduce, or prevent excessive noise in the animal facility.

1) Separation of wash areas from animal holding areas
2) The large animal facility has a noise absorbing ceiling.
3) Carts are equipped with rubber wheels (not plastic)

B. Animal Housing (All terrestrial, flighted, and aquatic species)

1. Primary Enclosures

a. Describe considerations, performance criteria and guiding documents (e.g. Guide, Ag Guide, ETS 123 and/or other applicable standards) used by the IACUC/OB to verify adequacy of space provided for all research animals, including traditional laboratory animal species, agricultural animals, aquatic species, and wildlife when reviewing biomedical, field and agricultural research studies.

Guiding criteria is the NRC Guide. In addition, researchers are obligated to mention in the ethical request if they want to hold animals in special holding conditions (metabolic cages, reduced space, singly housed).

a. Describe space exceptions to the guiding documents (Guide, Ag Guide, ETS 123, and/or applicable standards), indicating the references, considerations and performance criteria used (e.g., by the IACUC/OB) to verify adequacy of space provided for all animal species covered by the program. [Guide, pp. 55-63]

N/A


a. Enrichment
i. Describe the structural elements of the environment of primary enclosures that may enhance the well-being of animals housed (e.g. resting boards, privacy areas, shelves/perches, swings, hammocks, etc.).

<table>
<thead>
<tr>
<th>Species</th>
<th>Resting Boards</th>
<th>Shelves/Perches</th>
<th>Toys/Manipulanda</th>
<th>Foraging Opportunities</th>
<th>Nesting Material</th>
<th>Swings</th>
<th>Other (Specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mice</td>
<td></td>
<td>Plastic tubes</td>
<td></td>
<td></td>
<td>Sunny Chips bedding Paper/Cotton Wool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rats</td>
<td></td>
<td>Plastic tubes</td>
<td></td>
<td></td>
<td>Sunny Chips bedding Cotton Wool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sunny Chips bedding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphibians</td>
<td></td>
<td></td>
<td>Plastic tubes</td>
<td></td>
<td></td>
<td></td>
<td>Hiding possibilities</td>
</tr>
<tr>
<td>Rabbits</td>
<td>X</td>
<td>Plastic tubes</td>
<td>Hay</td>
<td></td>
<td>Sunny Chips bedding</td>
<td></td>
<td>Group housing</td>
</tr>
<tr>
<td>Pigs</td>
<td></td>
<td>Chains, Chewing bones from condensed leather, hanged dog's toys and brooms.</td>
<td>X</td>
<td></td>
<td>Sunny Chips bedding</td>
<td></td>
<td>Group housing realizing twice a week to a lobby.</td>
</tr>
<tr>
<td>Ruminaunts</td>
<td></td>
<td></td>
<td>Concentrated food spread in the bedding</td>
<td>Hay, bedding</td>
<td></td>
<td>Group housing</td>
<td></td>
</tr>
<tr>
<td>Primates</td>
<td>Woode n</td>
<td>X</td>
<td>Various toys, unfixed barrel,</td>
<td></td>
<td>Sunny Chips</td>
<td></td>
<td>Group housing</td>
</tr>
</tbody>
</table>


ii. Describe nonstructural provisions to encourage animals to exhibit species-typical activity patterns (e.g., exercise, gnawing, access to pens, opportunity for exploration, control over environment, foraging, denning, burrowing, nesting materials, toys/manipulanda, browsing, grazing, rooting, climbing).

<table>
<thead>
<tr>
<th></th>
<th>resting boards</th>
<th>a swing made of wood within treats are hidden, and parrots food spread under the hay once a week.</th>
<th>bedding</th>
<th>Changing the swings state and rotation of toy devices among yards every 2 weeks.</th>
</tr>
</thead>
</table>

- Rabbits – climbing areas, long group housing cages.
- Dogs - a large fenced open space on the roof of the building for exercising, toys, group housing.
- Pigs – foraging, chains, group housing
- Primates – group housing, housing in open yards, toys, climbing, foraging

b. Social Environment [Guide, p. 64]

i. Describe institutional policy or strategy for social housing of social species.

a. All animals are group housed, unless contrary to the research requirements (depending on IACUC approval) or if fighting problems occur (male rabbits)
b. All rodents receive nesting material - wood shavings and plastic tubes.
c. All breeding rodents and nude mice receive in addition to a. also cotton wool.

d. Rabbits are held on wood shavings, receive hay, resting boards and large plastic tubes
e. Large animals (pigs and ruminants) are group housed on interconnecting solid floors in floor pens with wood shavings and toys.
f. Diet for pigs is mixed with wood shavings to allow foraging.
g. Primates are group held in interconnecting cages. Cages are connected to yards. Solid floors with wood shavings, toys, swings.
h. Primates receive granola, fruits and treats mixed in wood shavings to allow foraging.

ii. If social animals are not socially housed, provide justification, as approved by the IACUC/OB.

If researcher wants to single house an animal because of research needs, this must be justified and approved by the IACUC.
iii. Describe steps taken with isolated or individually housed animals to compensate for the absence of other animals (e.g., interaction with humans, environmental enrichment, etc.).

See above. In addition, the researcher has to mark single housing request in the ethics form for the IACUC to review and approve.

Describe how animals are habituated to routine husbandry or experimental procedures, when possible, to assist animals to better cope with their environment by reducing stress associated with novel procedures or people.

All animals are acclimated before research.
All rat users are encouraged to handle the animals prior to research.
We employ a primate trainer from the zoo who works with students on positive reinforcement. The training is performed prior to research.
Ruminants have a week of adjustment.
Pigs have a week of adjustment, and receive daily water with sugar from a bottle as a means of positive reinforcement if administering oral treatments is needed.

Describe how enrichment programs and exceptions to social housing of social species are regularly reviewed to ensure that they are beneficial to animal well-being and consistent with the goals of animal use.

The vets and supervisors perform regular monitoring of enrichment, and social programs.
The IACUC performs semi-annual visits to all animal facilities ensuring enrichment and social programs.
The ABBM hired the services of a primate trainer from the Jerusalem zoo. She comes in on a regular (weekly) basis to train students and to review, update and control the enrichment and social programs.

e. Sheltered or Outdoor Housing [Guide, pp. 54-55]

i. Describe the environment (e.g., barn, corral, pasture, field enclosure, flight cage, pond, or island).

Bird shed (E. Safra campus) – Birds are held in large sheltered fenced areas with access to food and water.

ii. Describe methods used to protect animals from weather extremes, predators, and escape (e.g., windbreaks, shelters, shaded areas, areas with forced ventilation, heat radiating structures, access to conditioned spaces, etc.).

Methods used to protect animals from weather extremes, from predators, and from escape include:
### Type of Protection

<table>
<thead>
<tr>
<th>Type of Protection</th>
<th>Check all that apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windbreaks</td>
<td></td>
</tr>
<tr>
<td>Shelters</td>
<td>X</td>
</tr>
<tr>
<td>Shaded areas</td>
<td>X</td>
</tr>
<tr>
<td>Areas with forced ventilation</td>
<td>X</td>
</tr>
<tr>
<td>Heat-radiating structures</td>
<td>X</td>
</tr>
<tr>
<td>Access to conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>Other (describe):</td>
<td></td>
</tr>
</tbody>
</table>

### iii. Describe protective or escape mechanisms for submissive animals, how access to food and water is assured, provisions for enrichment, and efforts to group compatible animals.

Pigs - pigs from different litters are separated. When there is a number of pigs together, there is enough water troughs and food spread around in every cell.

Dogs - there is a number of water bowls spread in every room, and a feeding bowl for each dog (we do not have dogs for over 3 years).

Ruminant yard – yard is equipped with several feeding stations and several water troughs that enables several animals to drink and be fed simultaneously.

Bird shed – The yards are equipped with several places for feed and water. Yards are equipped with hiding shields for submissive birds.

### C. Animal Facility Management

1. **Husbandry**

   a. **Food** [Guide, pp. 65-67]

      iii. Describe bulk food storage facilities, if applicable, noting temperature and vermin control measures. Note food storage areas within the specific animal facilities are described below in Section IV.B.4.a. Physical Plant.

      1) Ein Carem

         i. Rodent Diet is stored in a designated storage area. The storage is located in an underground level and is locked. Temperature is monitored on a regular basis. The storage is under the regular vermin control program of the ABBM.

         ii. Special rodent diets – stored in a cold room within the SPF facility. Temperature is monitored on a regular
basis.

iii. Primate, Large Animal and Rabbit diet – Stored in the designated animal facilities, under temperature control.

b. E. Safra

i. Rodent Diet is stored in a designated storage area within the animal facilities. Temperature is controlled and monitored on a regular basis. The storage is under the regular vermin control program of the ABBM.

c. Mount Scopus

i. Rodent Diet is stored in a designated storage area. The storage is located in an underground level and is locked. Temperature is monitored on a regular basis. The storage is under the regular vermin control program of the ABBM

d. Rehovot

i. Rodent diet is stored in a designated storage area within the animal facility. Temperature is controlled and monitored on a regular basis.

ii. Ruminant and chicken diet – Stored in the designated animal facilities

iv. Describe food storage in animal rooms.

a. SPF units – Irradiated diet is sprayed in bags into the units and then transferred into stainless-steel (SS) containers kept in the laminar flow hoods.

b. Conventional rodent, rabbit, primates and large animal units – diet is kept in the original bags. Bags are opened and used in the animal rooms in plastic containers on wheels.

vi. Describe how food is provided to various species (ad libitum, limited amounts, types of feeders).

All animals receive their diet ad libitum, with the exception of:

a. Primates – see section on food restriction (A.1.e.)

b. Pigs – receive a daily quantity according to body weight.

c. Feeder types and feeding frequency:

Amphibians – Floating diet pellets in water tanks. Feed is given twice weekly and tanks are cleaned after every feeding.

Zebra fish – Commercial diet and live food (Arthemia). The given amount of food is determined according to the number of fish in the tank and their age. Feeding is done twice a day in regular work days, and once a day in weekends ad days in which the university is closed.

Rodents – Hoppers in the cage lids. Feed given 1-2 times weekly.

Birds – Provided daily according to the animal’s weight in diet bowls.

Rabbits – Pelleted diet containers in each cage/rack. Hay containers in the racks. Containers are checked daily and filled 1-2 times weekly

Pigs – Pellets thrown in the bedding in pens (for enrichment). Feed given daily.

Ruminants – Free access to water and hay, and about 1 kg per animal a day of concentrated food.

Primates – Containers and trays in the cages. Feed given daily.
vii. Describe special food quality control procedures including procedures for rotating stock, monitoring milling dates, nutritional quality, bio-load, chemical contaminants, etc.

   a. All diet deliveries are monitored by the responsible veterinarian and registered. Diet is not used beyond expiry date (up to 9 months depending on the producer).
   b. All storage areas are organized on a "first in – first out" basis.
   c. All diets are accompanied by an analysis report.
   d. Diets are purchased from ISO accredited suppliers.


i. Describe the water source, treatment or purification process, and how it is provided to the animals (e.g., bowls, bottles with sipper tubes, automatic watering, troughs, ponds, streams, etc.).

   a. Water source is city water.
   b. SPF rodents:
      i. Ein Carem and E. Safra – water is acidified to pH 3.2-2.8 and filtered to 0.2 micron. Water pipes reach every laminar flow hood in the unit where empty autoclaved bottles are filled.
      ii. Rehovot – Water is autoclaved and provided in bottles.
   d. Rabbits, pigs, chicken, ruminants, and primates – automatic watering systems equipped with filters.

ii. Describe methods of quality control, including monitoring for contaminants.

   a. We receive routine water quality testing results from the municipality. The reports are evaluated in our HM lab and sent out to all the vets.
   b. SPF units where water pipes reach laminar flow hoods – water is tested microbiologically by swab culture from water pipes from every hood every 6 months.
   c. SPF units with central acidified water supply (Sharet) - water is tested microbiologically, by swab culture, from the central water supply every 2 weeks

iii. If automatic water delivery systems are used, describe how they are maintained and sanitized.

   Rabbits, chicken, pigs, ruminants, and primates – automatic watering systems equipped with filters. The water troughs' opening is cleaned manually.

i. Describe type(s) and how used for various species.

<table>
<thead>
<tr>
<th>a. Rodents – Harlan Teklad Sunny Chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Rabbits, pigs, ruminants, and primates – Harlan Teklad Sunny Chips</td>
</tr>
</tbody>
</table>

ii. Describe bulk bedding storage facilities, if applicable, including vermin control measures. Note bedding storage areas within the specific animal facilities are described below in Section IV.B.4.a.

Bedding is stored in locked, designated storage areas. The storage areas are under the regular vermin control program of the ABBM

iii. Describe quality control procedures, including monitoring for contaminants.

<table>
<thead>
<tr>
<th>a. Bedding is purchased from Harlan Teklad – an ISO accredited supplier. Bedding is produced for laboratory animals and is certificated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. All the bedding (for SPF rodents, conventional rodents, rabbits and large animals is autoclaved.</td>
</tr>
</tbody>
</table>

iv. Miscellaneous Animal Care and Use Equipment

i. Describe motorized vehicles and other equipment (e.g., trailers) used for transporting animals, noting the type and how the cargo compartment is environmentally controlled, if applicable.

The ABBM is equipped with a small truck designated for animal transport. The cargo space, separated from the driver area, is equipped with a separate air-handling unit with its own temperature control and screen. A separate sensor indicates to the driver the temperature in the cargo area. The truck is licensed for animal transport.

ii. Describe other animal care related equipment used in the animal care program (e.g., specialized equipment for exercise or enrichment, high pressure sprayers, vacuum cleaners, tractors, trailers, spreaders, etc.).

HEPA filtered vacuum cleaner in the rabbit area and in rodent units that have IVC cages.
High pressure sprayer in large animal area

i. Bedding/Substrate Change

1) Describe frequency of contact and non-contact bedding change for each species and enclosure type (solid-bottom or suspended) or pen.

   a. Mice – 1-2 times weekly (depending on number of animals, special conditions – diabetes etc.) in static micro-isolators, Once every 2 weeks (in specific needs once weekly) in IVC cages.
   b. Rats – Twice weekly in static micro-isolators, once a week in IVC gages.
   c. GP – 3-4 times weekly
   d. Rabbits – 1-2 times weekly
   e. Pigs, Primates – 1-2 times weekly

3) Note the location where soiled bedding is removed from the cages/enclosures and where clean bedding is placed into the cages/enclosures.

   a. Rodent cages – Soiled cages are stacked and brought to the cage-wash area, where the bedding is removed and the cages are washed. Clean bedding is put in autoclaved cages in the animal units.
   b. Rabbit pens – the bedding is removed in the unit, and the pen is then moved to the cage-wash area.
   c. Ruminants, chicken, Pigs, Primates and Rabbit pens – the bedding is removed in the unit.

2) Assessing the Effectiveness of Sanitation and Mechanical Washer Function

   a) Describe how the effectiveness of sanitization procedures is monitored (e.g., water temperature monitoring, microbiological monitoring, visual inspections, etc.).

      a. Autoclave activity is routinely monitored by putting heat sensitive tape in addition to chemical strips in each cycle. Each cycle is recorded (including the type of the autoclave load) and strips are kept for future control.
      b. Once weekly BOWIE-DICK test is performed in all the autoclaves to assure proper function.
      c. Once annually all autoclaves go through a biological test using bacterial spores of Bacillus stearothermophilus
      d. Mechanical washers are monitored for final rinse temperature.
      e. Once annually washers go through RODAC test to assure correct cleaning performance
      f. Surfaces in SPF units animal rooms are RODAC tested every 6 months.
      g. Acidified water outlets in the laminar flow hoods are swabbed every 6 months.
      h. Veterinarians perform a weekly check in all animal units
      i. IACUC performs semiannual checks.
b) **Describe preventive maintenance programs for mechanical washers.**

- Our maintenance person checks routinely each mechanical washer and performs preventive maintenances.
- Autoclaves and mechanical washers are checked routinely by our technicians, and if there's a problem they report to the maintenance person.

f. **Waste Disposal** [Guide, p. 73-74]

Describe the handling, storage, method and frequency of disposal, and final disposal location for each of the following:

i. **Soiled bedding and refuse**

Soiled bedding is collected in plastic bags. Bags are closed and removed from the animal units to the campus collection sites, where the bags are put in large, closed metal containers. The entire content of the containers is disposed by commercial contractors to the municipal site.

ii. **Animal carcasses**

Collected into a refrigerated container (frozen down). The content is collected and removed by a specialized contractor under the supervision of the safety department, and the cremated in a National center.

iii. **Hazardous wastes - infectious, toxic, radioactive, sharps and glass**

a. Infectious – autoclaved when taken out of the room (P2) or within the room (P3) and then disposed with the regular garbage.

b. Radioactive – Radioactive research with animals is carried out only in specific areas designated by the safety department. The animals remain in the designated area until the radioactive level declines, and then euthanized (or returned to the animal facility in the case of the PET-CT lab). Disposal is according to the safety department instructions by a specialized contractor. Waste is disposed by the same contractor under the supervision of the safety department.

g. **Pest Control** [Guide, p. 74]

i. **Describe the program for controlling pests (insects, rodents, predators, etc.) noting the control agent(s) used, where applied, and who oversees the program and applies the agent(s). Include a description of natural predators (e.g., barn cats) or guard animals (e.g., dogs, donkeys) used for pest and predator control, if applicable.**

a. All units are under a routine pest control program by an outside contractor. Pest control is performed every 3 months. The pest control is performed only in designated areas (around the units, in the soiled corridors, general areas etc.) but not in the animal rooms. The material used is Permethrin.

b. Rodent traps- Live traps are put in all units and are checked routinely. Sticky surfaces for insects are placed on the walls in animal units and near the diet and bedding storage areas.
c. UV lights for flying insects are installed in animal facility entrances.
d. All entrances to the facilities and all animal rooms are equipped with rodent guards in the door frames.

ii. Note how animal users are informed of pesticide use and how animal users may opt out of such use in specific areas.

Pest control is performed only around animal facilities and not in the animal rooms or in positive pressure central areas. Before every cycle, the users are informed about the date and the material used by signs hung on the wall of the relevant facility.

h. Emergency, Weekend and Holiday Care [Guide, pp. 74-75]

i. Describe procedures for providing weekend and holiday care. Indicate who (e.g., regular animal care staff, students, part-time staff, etc.) provides and oversees care and what procedures are performed. Indicate qualifications of weekend/holiday staff if not regular staff.

a. On Saturdays and holidays (not more than one day) animal units are visited by part time workers. Part time workers look at the animals, check environmental parameters, feed large animals and report in case of problems. All part time workers are guided and trained by the ABBM staff prior to entering the job (some of them have permits to work with animals during research).
b. On Fridays and on the second day of each holiday (if the holiday is more than one day), regular ABBM staff is called in.
c. Primates are visited 7 days a week also by students from the corresponding research labs.

ii. Describe procedures for contacting responsible animal care and/or veterinary personnel in case of an emergency.

a. All ABBM vets and the ABBM maintenance person have HU cellular phones.
b. Vets are on call according to a prescheduled list.
c. In all the animal units there are updated phone number lists including emergency numbers.
d. All workers are familiar with the responsible vets.
e. All workers are trained to call the responsible vet or the security guards (available at each campus) or the maintenance person in case of need.


a. Identification
Describe animal identification methods for each species (e.g., microchips, cage/tank cards, collars, leg bands, tattoo, ear tags, brands, etc.).
a) Zebra fish and amphibians – Each tank has a colored sticker on it identifying the researcher, ethics number, species in the tank, and their birth date. Fish tanks have a different sticker identifying number of fish.
b) Rodents and rabbits – Each cage has a cage card identifying the researcher, ethics number, research severity (grades 1-5), animal data (species, strain, age) number of animals in the cage, date of arrival. Cage cards are computerized and are issued following the submission of animal orders by the researchers.
c) Pigs and small ruminants – ear tags
d) Primates – microchips and neck collars in different colors.

b. Record Keeping

Describe procedure(s) for maintaining individual records on animals. Identify the species for which individual records are maintained, individuals (titles, not necessarily names) responsible for maintaining the records, and where they are maintained and how veterinary and IACUC/OB access is assured.

a. Large animals (pigs, ruminants, and primates) have individual animal cards. Dr. Dagan (the vet responsible for the large animal unit) is responsible for updating the files. Files are kept in the animal quarters so that every vet, researcher and ABBM staff that needs to take care of the animals (during or after working hours) can view them.
b. Semi-annual IACUC visits include review of the medical records.
c. Rodents – All cages have cage cards indicating the procedures. Researches at severity levels 4 and 5 have sign-in forms in the animal rooms. The forms are used for the researchers to mark their visits and checking on the animals as approved by the IACUC.
d. Rodents – Animal technicians fill in a report indicating any specific problems (floods, lack of diet or water, temp. deviations etc.). Reports are collected and a monthly collective report is issued by the HM lab.

c. Breeding, Genetics and Nomenclature

i. Describe the program for advising investigators on the selection of animals based on genetic characteristics.

a. All researchers have to take a course on the use of animals in research. The course includes a lecture on animal genetics and nomenclature (Outbred, Inbred, Hybrid, Transgenics, Targeted Mutations)
b. Researchers consult ABBM veterinarians when filling the Ethical applications.
c. Researchers are required to mention the animal strain, the source, any pathological phenotypes and the reason for choosing that particular species and strain when filling the Ethical application
d. The ABBM web site has links to animal model sites, genetic data sites, and transgenic data.
ii. Describe the program for advising investigators on using standardized nomenclature to ensure proper reporting of the identification of the research animals with regard to both the strain and substrain or the genetic background of all animals used in a study.

See above.

iii. For newly generated genotypes, describe how new phenotypes that negatively impact well-being will be monitored, managed and reported to the IACUC/OB in a manner to ensure the animals’ health and well-being.

Breeding is performed only in supervised animal facilities. The ABBM technicians check the animals on a daily basis and the researchers are also required to follow their animals. In every case of a problem it is reported to the responsible veterinarian, and when in need, to the IACUC as well.

III. Veterinary Care [Guide, pp. 105-132]

Note: Complete each section, including, where applicable, procedures performed in farm settings, field studies, aquatic environments, etc.

A. Animal Procurement and Transportation [Guide, pp. 106-109; Ag Guide, pp. 8; 45; 51-57]

1. Animal Procurement

   Describe the method for evaluating the quality of animals supplied to the institution (e.g., from commercial vendors, other institutions, etc.).

   a. Central purchasing – The HU regulations specifically instruct the researchers that any import or export of animals from the HU is to be done only through the ABBM.
   b. Health reports – all animals have to be accompanied by updated health reports.
   c. Approved vendors – Several commercial vendors have obtained the title of "approved vendors". HM reports are routinely obtained from such vendors. Animals from such vendors can be introduced directly into the animal units and do not have to go through quarantine.
   d. Testing samples on arrival – According to ABBM regulations, on a regular basis twice a year, samples from rodents are taken on arrival date are checked at the ABBM health monitoring lab.
   e. Quarantine – Animals from all sources that are not considered approved vendors have to go through a quarantine period and health monitoring process before being introduced into the animal units.

2. Transportation of Animals

   Describe how animals are transported between outside sources and the institution and within the institution, including loading, unloading, level of biosecurity, immune status and specific pathogen status (consider all species, including aquatic and semi-aquatic species).
a. Animals from local commercial suppliers are transported with the ABBM's designated truck. The truck has a separate air handling unit for the animal space with two separate temperature controllers in the cabin.

b. Animals from abroad are transported from the airport either with the ABBM's truck or with specialized agents (World Currier Ltd.).

c. Animals from non-commercial suppliers (transgenics and targeted mutations from other research institutes) are imported only after a detailed import form is being submitted and approved by the ABBM veterinarians. The form includes information regarding the animal’s health status, immune status and any special considerations required.

d. Animals between facilities are transported with the ABBM's truck. All transportations of animals within the HU facilities or to other institutes have to be approved by the ABBM prior to transport and follow the ABBM regulations.

e. All rodents are brought into the ABBM facilities only after receiving detailed information on the health status and phenotypic characteristics. The information is checked by the ABBM HM lab and Dr. Uzi before the transport takes action.

f. All rodents are transported using autoclaved filtered boxes.

g. Amphibians and zebra fish (brought as eggs) are brought in designated containers through commercial transporters and go through a quarantine and acclimation period.

h. Zebra fish are not purchased from a known supplier (there are none for now). It is preferred not to transport mature fish. No more than 100 Embryos are transported in 50 ml test tubes or in tissue culture bottles, leaving room for air.

i. Amphibians are received from a known supplier. They are checked immediately upon their arrival and stay in their own water container (without mixing the new and the old ones)

B. Preventive Medicine


a. Describe methods used to monitor for known or unknown infectious agents.

- The ABBM has a health monitoring laboratory that works continuously both routinely and in cases of a suspected problem.
- In all rodent units there is a bedding sentinel program.
- In the quarantine unit there is a contact sentinels program.
- There are routine annual health examinations for rabbits and primates.

b. Describe methods used to control, contain, or eliminate infectious agents.

All animal units receive animals and materials only from controlled sources.
All units are equipped with palm readers, so that only authorized personnel can enter. The veterinarians perform regular inspections in all units. In every case of a suspected infection, laboratory tests are performed. In case of infection, ABBM management decides what steps are to be taken. All relevant researchers and employees are immediately informed regarding the actions taken: quarantine of the infected room/unit; protective and isolation measures; treatment for all animals; complete cleaning of the room, the hood, and the equipment twice within the treatment period; animal testing in the room and in the entire unit. When it's all done, we release the unit from quarantine, but only after testing the animals and receiving negative results.


a. Describe the initial animal evaluation procedures for each species.

<table>
<thead>
<tr>
<th>a) Rodents:</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. From approved vendors – Animals arrive directly to the animal units. Boxes are unpacked by the animal technicians, who examine the animals upon arrival and then on a daily basis.</td>
</tr>
<tr>
<td>ii. From non-approved institutes - Animals arrive to one of the two quarantine units (see detailed procedure below).</td>
</tr>
<tr>
<td>b) Zebra fish – when embryos are received, they are put on a plate and checked if healthy. If they haven't hatched yet, it is possible to disinfect them. If there are unhealthy or dead embryos, they are removed. If there are suspicious organisms in the plate, they must be identified and we must consider whether to accept the embryos or not. Afterwards there is a follow up after the embryos development in the quarantine system (placed in a separate room from the main breeding and holding area).</td>
</tr>
<tr>
<td>c) Amphibians - Animals arrive directly to the animal units. Boxes are unpacked and the animals checked upon arrival and then on a daily basis.</td>
</tr>
<tr>
<td>d) Rabbits - Animals arrive directly to the animal unit. Boxes are unpacked by the animal technicians, who examine the animals upon arrival and then on a daily basis. The responsible vet examines the animals not more than 24 hours after arrival.</td>
</tr>
<tr>
<td>e) Large animals (pigs, ruminants) - Animals arrive directly to the animal unit. The animals are received by the animal technicians, who examine the animals upon arrival and then on a daily basis. The responsible vet examines the animals not more than 24 hours after arrival.</td>
</tr>
<tr>
<td>f) Primates (purpose bred) - Animals arrive to the quarantine in the primate unit. The responsible vet receives the animals.</td>
</tr>
</tbody>
</table>

b. Describe quarantine procedures for each species that are purpose bred.

<table>
<thead>
<tr>
<th>a) Rodents</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. From non-approved institutes with &quot;clean&quot; health reports – animals arrive to the &quot;clean&quot; quarantine in E. Safra campus. The animals are received by the technician and placed in IVC cages. The animals remain in</td>
</tr>
</tbody>
</table>
the quarantine for a period of 6 weeks during which they undergo health screening (contact and bedding sentinels). After being proved as "clean", the animals are transferred to the animal units.

i. From non-approved institutes with "non-clean" health reports – animals arrive to the "dirty" quarantine in E. Safra campus. The animals are received by the technician and placed in cages. The animals remain in the quarantine until a caesarean re-derivation is performed. The newborns are held in the "clean" quarantine for health monitoring and then transferred to the animal units.

b) Zebra fish – A small quarantine in the Ein Carem campus serves for receiving fertilized eggs and fish from other institutes. Handling procedures in the quarantine are performed at the end of the working day, so that after working there, employees will not enter the main fish room. Reproduction is made in the quarantine, and before hatching, the embryos (1 day of age) are transported to the main fish room after being disinfected by dipping in chlorine solution. Primates – Primates in the HU are purpose breed and arrive from two approved sources (mainly from BFC farm in Israel and rarely from Barbados/St. Kitts). Prior to arrival the animals are tested for TB, presence of Ab (Herpes B, Measles, STLV-1, SRV, SIV), and blood count, and receive Ivermectin shots. Upon arrival the animals are received by the vet and are held in a negative pressure quarantine area for one month. During the quarantine period animals are tested for TB (Mammalian tuberculin) and tested for the presence of Ab (Herpes B, Measles, STLV-1, SRV, SIV.

c) Large animals – brought in only from approved sources. No quarantine, only stabilization periods.

c. Describe the quarantine facilities. In your description explain any special measures used for quarantine/conditioning of each random source (not bred and raised specifically for research) species used.

Rodent quarantine – Located in the E. Safra campus. The “clean” quarantine is a room in the lower level of the SPF facility. The animals are held in IVC cages. Entrance is restricted to the ABBM technician who takes care of the animals. He enters the room as the last job in the day. The “dirty” quarantine is a stand – alone rodent room. The worker is a part time worker who does not enter any other ABBM facility. Animals are held in open top cages.

Zebra fish quarantine – Small, two tank unit serves to receive fertilized eggs, located in the Ein Carem campus. As detailed above

Primate quarantine – Located in the primate unit in Ein Carem campus. Equipped with 2 interconnecting cages and a yard. Negative air pressure

d. Describe the required/recommended stabilization period for each species.

a) Animals from local breeders - 3 days

Rodents from abroad, farm animals from local breeders – 7
e. Describe the program for the separation of animals by species, source, and health status. If the animals in different status are not maintained separately, describe circumstances in which mixing occurs and explain the rationale for mixing.

a) Rodents are separated according to their microbiological and functional status into the following units:
   i. SPF source/breeding units
   ii. SPF end/research units
   iii. Conventional units

b) In most cases different rodent species are held in separate rooms. Exceptions are:
   i. In case where mice and rats are held in the same room, mice are held in IVC cages and rats in filter cages, or vice versa.
      Amphibians are housed in separate rooms

c) In case where mice and rats are held in the same room, mice are held in IVC cages, or vice versa.


a. Describe isolation procedures and related facilities for animals.

Both the large animal facility and the primate facility in Ein Carem include isolation rooms that can be used to isolate sick animals if requested. Rooms are equipped with separate temperature control. Entrance to both rooms is by personal code. Rodents that are found to be ill, are reported to the PI and the veterinarian and according to the veterinarian's instructions are either treated or euthanized.

c. Describe situations where multiple species may be housed in the same room, area, or enclosure.

i. Sheep and pigs are held together in the same room at the large animal unit.
ii. In case where mice and rats are held in the same room, mice are held in IVC cages, or vice versa.

4. Surveillance, Diagnosis, Treatment and Control of Disease [Guide, pp. 112-113]

a. Describe 1) the procedure(s) for daily observation of animals for illness or abnormal behavior, 2) the observer’s training for this responsibility, and 3) method for reporting observations (written or verbal). Include a description of the method for ensuring that reported cases are appropriately managed in a timely manner.

1. Morning check is performed by trained technicians 7 days a week. During this check the animals are observed.
2. In case of illness or any abnormal conditions the researcher and the responsible vet are informed.
3. During after-work hours, weekends and holidays there is always a vet on call (if the responsible vet for that specific unit is unavailable).

4. Cage cards indicate the research severity and technicians are informed to give special attention to high severity research.

5. Further to notifying the researcher, the technician puts on the cage a designated cage – card with the wording "Wounded animals".

6. All special events (cage flooding, unexpected death, environmental changes etc.) are collected and reported monthly for all ABBM facilities. The computerized (Excel format) report includes data from previous months and is distributed to all the veterinarians. Special events are discussed either immediately or during the regular monthly management meeting.

7. For ensuring that reported cases are appropriately managed, vets or supervisors make sure by phone call or an email that the action instructed has been done.

b. Describe the methods of communication between the animal care staff/veterinarians and the researcher(s).

   See above

c. Describe the procedure for providing veterinary medical care to ill animals and note who is contacted and the method of communicating (written or verbal) information to the veterinarian regarding sick animals.

1. All ABBM facilities are headed by veterinarians. Vets perform routine visits to all the units and are informed verbally by the technicians or supervisors regarding any signs of illness or problem.

2. Technicians inform researchers verbally regarding sick or wounded rodents. The ABBM has a pre-established time frame for the researchers to take action within a time period determined according to the severity of the situation, and if they don’t or if they can't be reached, than the ABBM technician informs the attending vet to give instructions regarding what to do..

3. All vets have HU cellular phones and are available on call.

4. In case of a problem after work hours, weekends or holidays, the technician calls the responsible vet for advise/help. If the responsible vet cannot be contacted, an on-call vet (according to a previously prepared list) is called.

d. Describe the preventive medicine and health management/ monitoring programs (e.g., physical examination, TB testing, vaccination, hoof/nail trimming, teeth cleaning/floating, vendor surveillance, use of sentinel animals, etc.) for each species.

   1. Rodents
      Animals held and bred in the animal facilities:
All units undergo monthly health monitoring tests (parasitology, bacteriology, serology and pathology). The ABBM has a prefixed annual monitoring schedule by which bedding sentinels are routinely tested by the ABBM HM (Health Monitoring) laboratory. A detailed report is produced and published.

All animals that need to be moved from the breeding units to the end units undergo anal tape tests for parasites.

Animals are tested by the veterinarians and the HM laboratory when clinical findings indicate it or upon researcher’s requests.

Procurement of animals:

1. From approved vendors – animals are received only after review of health screening. Twice annually sample animals from our main vendor (Harlan) are tested on arrival day. Testing includes bacteriology, parasitology and serology.

2. From non-approved institutes with "clean" health reports – Prior to shipping, the ABBM vet reviews the health reports from the sending institute as filled in the Import form. Animals arrive to the "clean" quarantine in E. Safra campus. The animals are received by the technician and the veterinarian. And placed in IVC cages. The animals remain in the quarantine for a period of 6-8 weeks, during which they undergo health screening (contact and bedding sentinels). After being proved as "clean", the animals are transferred to the animal units.

3. From non-approved institutes with "non-clean" health reports – animals arrive to the "dirty" quarantine in E. Safra campus. The animals are received by the technician and placed in cages. The animals remain in the quarantine until a caesarean re-derivation is performed. The newborns are held in the "clean" quarantine for health monitoring and then transferred to the animal units.

2. Rabbits - From approved vendors – animals are received only after review of health screening. All rabbits arrive from a single SPF source (Harlan).

3. Pigs - From approved vendors – All pigs arrive from one source (Lahav farms). Breeders supplies health screening reports.

4. Ruminants – All ruminants are received from an approved-monitored farm. Usually the sheep we get are females which are either vaccinated for Q fever or checked serologically for it and found negative before arrival. In any case, we assure that the females are not pregnant.

5. Primates – Primates in the HU are purpose bred and arrive from two approved sources (Barbados/St. Kitts, Israel). Prior to arrival we receive a health report and the animals are tested for TB, presence of Ab (Herpes B, Measles, STLV-1, SRV, SIV), and blood count, and receive Ivermectin shots. Upon arrival the animals are received by the vet and are held in a negative pressure quarantine area for one month. During the quarantine period animals are tested for TB (Mammalian tuberculin) and tested for the presence of Ab (Herpes B, Measles, STLV-1, SRV, SIV)

C. Clinical Care and Management [Guide, pp. 113-115]
a. Describe the procedures to ensure that emergency care is continuously available for animals during and outside of regular work hours.

- During working days, ABBM has in most units technicians who stay after regular work hours to support researchers and to ensure wellbeing of animals.
- ABBM has technicians in all units on weekends and holidays to check on animals and handle emergency cases.
- There is a rotation program of the ABBM vets, so there will always be a vet who is on call.
- An emergency phone number and list of vets on call are written on a sign in all animal facilities.

b. Describe the authority of the Attending Veterinarian or his/her designee relative to the emergency treatment of animals in the program.

The vet has a complete and absolute responsibility to treat the animal according to his/her professional judgment. The vet informs the researcher, but the authority and responsibility are his/her.


Describe the procedure for maintaining medical records and documenting treatment of ill animals including: clinical laboratory findings, diagnoses, treatments, medical progress records, etc. Identify individual(s) (titles, not necessarily names) responsible for maintaining such records and identify where the records are maintained and who has access to the records. Describe the role of the Attending Veterinarian in record keeping.

1. All large animals (pigs, small ruminants, and primates) have individual animal cards. Dr. Dagan (the vet responsible for the large animal units) is responsible for updating the files.
2. Hard copy files are updated by the responsible vet and the technicians and are kept in the animal quarters so that every vet, researcher and ABBM staff that needs to take care of the animals (during or after working hours) can view them.
3. Rodents - All cages have cage cards indicating the procedures.
4. Researches of severity levels 4 and 5 have a form describing potential clinical signs and HEPs. Forms are kept in the animal rooms, filled by the researchers and routinely checked by the ABBM technicians and vets.
5. Semi-annual IACUC visits include review of the medical records.
6. The attending veterinarian updates the record keeping himself when he visits the unit, and is also in charge of making sure it is done correctly by the technicians.
7. The ABBM has an in-house HM lab managed by an MSc. In Biology (M. Mujahed) who gives diagnostic services Additional diagnostic services are given by either outsourced veterinary labs (AML) or the Hadassah hospital labs.

3. Diagnostic Resources. Describe available diagnostic methods used in the program including:
a. **In-house diagnostic laboratory capabilities.**

i. Macroscopic Pathology  
ii. Parasitology (Ecto and Endo)  
iii. Bacteriology (Respiratory and digestive)  
iv. RT-PCR (Helicobacter)  
v. Histology  
vi. Fluoroscope  
vii. Exhaled gas analyzer  
viii. sPO2, ECG, end tidal CO2, blood pressure monitor  
ix. ACT measurement  
x. PCV/TS

b. **Commercially provided diagnostic laboratory services.**

1. Serology (RADIL)  
2. PCR (RADIL)  
3. Clinical biochemistry and CBC (AML)

c. **Necropsy facilities and histopathology capabilities.**

1. Necropsy is performed mainly by Dr. Dagan from the ABBM staff  
2. Histopathology is performed by the ABBM lab and interpretation is outsourced to Dr. Anug, ABBM's pathologist.

d. **Radiology and other imaging capabilities.**

Surgery room is equipped with a fluoroscope as an imaging device.

4. **Drug Storage and Control**

a. **Describe the purchase and storage of controlled and non-controlled drugs.**

a. All drugs are ordered only by the ABBM purchase/finance person and received by the veterinarians.  
b. All drugs are kept in a locked cabinet and are handed out by the ABBM staff to the researchers only after receiving the computerized order.  
c. A detailed list is kept for controlled drugs.
b. Describe record keeping procedures for controlled substances.

   See above

D. Surgery [Guide, pp. 115-123]


   Describe the process(es) used to ensure adequate pre-surgical planning, including: identifying personnel; locating equipment, supplies, veterinary involvement for selecting analgesic and anesthetic agents and facilities; planning; and pre- and postoperative care.

   An ABBM person is involved in every surgical procedure that involves large animals (ruminants, swine, NHP). The ABBM person (either a DVM or a trained vet technician) is responsible for the anesthetic and analgesic aspects (and occasionally to the surgical procedure). Prior to the surgical process, the ABBM vet meets the researcher to discuss pre and postsurgical treatment, according to the IACUC approval, and coordinate the technical aspects of the surgery. Each large animal has a personal file, which includes the anesthesia report, routine tests/examinations, and special post-op treatment instructions. Prior to the surgical project the ABBM staff makes sure that all the needed equipment and medications are available.


   a. Describe the criteria used to differentiate major from minor survival surgery, including classification for certain procedures (e.g., laparoscopic technique, etc.).

   Major survival surgery (e.g., laparotomy, thoracotomy, joint replacement, and limb amputation) penetrates and exposes a body cavity, produces substantial impairment of physical or physiologic functions, or involves extensive tissue dissection or transection. Minor survival surgery does not expose a body cavity and causes little or no physical impairment; this category includes wound suturing, peripheral vessel cannulation, percutaneous biopsy, and most procedures routinely done on an “outpatient” basis in veterinary clinical practice. Animals recovering from these minor procedures typically do not show significant signs of postoperative pain, have minimal complications, and return to normal function in a relatively short time. Laparoscopic surgeries and some procedures associated with neuroscience research (e.g., craniotomy, neurectomy) may be classified as major or minor surgery depending on their impact on the animal.

   b. How is non-survival surgery defined?
Any surgery when the animal doesn’t wake up from anesthesia is defined as non-survival surgery.


a. Describe procedures, equipment, and protective clothing used for aseptic surgery. Include patient and surgeon preparation.

Large animals – Anesthesia induction (SC or IM injection) and primary preparation that includes rough cleaning and hair clipping, are performed in a designated area at the large animal unit of the animal facility. Excess hair or bedding material is vacuumed, the animal cleaned and an IV line is placed. The animal is moved to the surgery room and scrubbed with Chlorhexedine solution followed by iodine-alcohol solution. The animal is draped with sterile drapes. All the surgical equipment is autoclaved prior to use. Surgeons perform the scrubbing procedure in the preparation room, and then dress with sterile gowns and gloves. All personnel that attend the surgery room are required to wear face mask, head and shoe covers.

Rodents – Most surgical procedures are performed in designated areas in the animal facilities (SPF or conventional). Surgeries performed in the research labs need to be justified by the researcher and authorized by the IACUC and ABBM Vet. Most surgeries are performed in laminar flow hoods where the animal is prepared, scrubbed and undergoes surgical procedure with sterile instruments and gloves. The ABBM supplies bead-sterilizers to all the animal facilities. In special occasions (usually when large surgical equipment is requested) the procedure is performed on the bench in a designated laboratory within the SPF facility (such procedure need to be approved in advance by the ABBM vet).

b. Describe methods used to sterilize instruments and protective clothing. Indicate how effectiveness of sterilization is monitored and, if applicable, any approved alternate methods for instrument re-sterilization between serial surgeries. If used, include a description of approved liquid sterilants and instrument exposure time(s) required for each.

All the instrument sets, sterile clothing and drapes are packed individually and marked with time-cards and autoclave tape. Sets are autoclaved in an autoclave adjacent to the respective animal unit. Sterilization log is kept for each autoclave including type of material autoclaved and the respective time-card. Once annually, all autoclaves undergo a biological test (M. Thermophilus).

All rodent units have bead sterilizers for the use of the researchers.

All the researchers in all the animal units dress with clean, pre-autoclaved (in SPF units) gowns.

All animal units are routinely disinfected: the floor- with detergent and bleach, working stations- with alcohol or Virusolve.

Researchers that perform non-survival surgery and laboratories use liquid sterilants or bead sterilizers. The procedure has to be approved by IACUC and monitored in the semiannual visits.
c. Describe surgical support functions provided by the program to investigators.

All surgical areas are separated from the surrounding areas. The main surgical room at the Medicine building on -1 floor has its own support area (autoclave room, separate animal preparation area, surgeon's scrub, designated sterile storage area). All the other areas serve as treatment rooms and as such have separate animal preparation areas.

Describe monitoring and recording requirements for each species, including the type of record(s) maintained. Also note monitoring of anesthesia during non-survival procedures.

Large animals- there are monitors in each anesthesia station which include pulse, oxygen saturation, capnograph, respiratory rate, invasive and non-invasive blood pressure, rectal temperature. Two of the anesthetic machines also have gas analyzers to monitor the anesthetic gas level inhaled and exhaled.

Describe the postoperative care program, including who is responsible for overseeing and providing the care, types of records maintained (e.g., perioperative), where the records are maintained, etc.

a. Postsurgical program is carried out in Ein Carem at the large animal facility on the 7th floor. Surgical and post-surgical records are filled in designated forms by the surgical staff. Records are kept in the animal quarters for the researchers, the technicians, and the vets to fill and follow. Also the IACUC members can examine the documentation on their visits.
b. The post-surgical program is performed according to the authorized ethics application. The researcher and the ABBM staff determine the responsibilities prior to the operation.

E. Pain and Distress [Guide, pp. 120-121]

1. Describe how and by whom pain and distress are assessed and categorized.

a. The Ethics application includes categorization of pain and distress to one of 5 pre-established categories. The categories are set by the National Council and apply to all research institutes.
b. Each ethics application is assessed by at least one vet. The vet and the other committee members decide if the pain and distress level indicated by the researcher is adequate.
c. All applications of severity level 4 and 5 (the highest level) cannot be initiated before the entire team meets with the responsible ABBM vet to ensure that all members are familiar with the pain and distress symptoms expected in the experiment.
d. Following the meeting a severity form indicating signs of pain, needed attendance, HEPs, and special
measures required is filled. The form is held in the animal room and the research team must fill in and sign for each activity. The form is regularly checked by the ABBM technicians and vets.
e. During the experiment, ABBM technicians report to the vet every irregular pain and distress events. The vet is the final authority regarding the actual level of pain and distress that occurs and the means that have to be taken.
f. An ABBM vet or technician is present at every surgical intervention with large animals. The ABBM person ensures that pain and distress levels are kept to a minimum level.

2. Describe how the IACUC/OB ensures that unnecessary pain and distress are avoided (e.g., pilot studies, monitoring by veterinary staff, animal use protocols, humane endpoints, other refinements, etc.).

   a. The ethics application includes a list of expected clinical signs. The researcher needs to indicate from the list the expected signs.
   b. The ethics application includes several pre-formed scoring tables (EAE, IBD, Rheumatoid arthritis, Neurologic severity, NSS). The researcher has to commit to act according to such tables (if the type of research fits such tables), or produce an adequate scoring table if requested by the IACUC.
   c. The researcher needs to indicate in the ethics application the means for looking after the animals and the point where HEP (Humane End-Points) need to be applied.
   d. The researcher needs to indicate in the ethics application the method of euthanasia.
   e. All the above sections of the ethics application include useful links to aid the researcher when filling the application.
   f. The ethics application includes a section of "Special methods", where the researcher needs to indicate any special research methods he plans to perform. Methods include space limitations, food or water restriction, irregular environmental conditions, performance of more than one major survival surgery in one animal, single housing of animals because of research needs, using stressful behavioral methods.

2. Describe how the veterinarian provides guidance and advice to researchers concerning choice and use of anesthetics, analgesics or other pain moderating methods.

   a. Researchers consult with the veterinarians before and during the submission of the ethics application.
   b. Every application is reviewed by at least one ABBM veterinarian who makes sure that the anesthetics and analgesics requested are appropriate.
   c. An ABBM vet or technician is present at every surgical intervention with large animals. The ABBM person ensures that pain and distress levels are kept to a minimum level.
   d. All applications that receive severity level 4 and 5 (the highest severity level) cannot be initiated before the entire team meets with the responsible ABBM vet to ensure that all members are familiar with the anesthetics and analgesics that need to be used in the experiment.
3. Describe the monitoring of the effectiveness of anesthetics and analgesics, including who does the monitoring.

The HU IACUC requires documentation in the protocol for anesthesia monitoring by the PI and parameters of evaluating pain and how it will be managed. The guidelines utilized by the Attending Veterinarian and the IACUC is that unless it is contrary to scientific goals, investigators should consider that procedures that cause pain or distress in human beings may cause pain or distress in other animals, and it is expected that the animal will be treated with analgesics.

4. Describe how the veterinarian(s) and the IACUC/OB evaluate the proposed use of neuromuscular blocking agent to ensure the well-being of the animal.

Rare cases of use of neuromuscular blocking agent have to be approved by the IACUC. Such research can be performed only in the main surgical area (Ein Carem -1 level) that is equipped with adequate monitoring. Monitoring includes measurements of blood pressure, heart rate. In addition, the penalization period does not exceed half an hour each time, and in between there are non-penalization periods.

5. Describe policies and practices for maintaining and ensuring function of equipment used for anesthesia.

Anesthetic machines are checked annually.


1. Describe approved methods of euthanasia, including humane slaughter. Include consideration of species, age, condition (e.g., gestational period, or neonatal) and location(s) for the conduct of the procedure.

RODENTS

CO2 – most units are equipped with automated CO2 devices that calibrate the rate and time of exposure. The process is divided between newborns and adult rodents (15 minutes of CO2 flow for newborns, 6 minutes for adults. For both-10 minutes more of exposure without CO2 flow.)

Inhalant anesthetics
Terminal bleeding/Perfusion under injectable anesthetic (Barbiturates/Ketamine/Other*)
Overdose of Injectable anesthetic (Barbiturates/Ketamine/Other*)
Potassium Chloride under general anesthesia
Cervical Dislocation under sedation or anesthesia – for mice and rats up to 100g
Decapitation under sedation or anesthesia - Requires justification for use
Terminal Bleeding
RABBITS

Terminal bleeding/Perfusion under injectable anesthetic (Barbiturates/Ketamine/Other*)
Overdose of Injectable anesthetic (Barbiturates/Ketamine/Other*)
Potassium Chloride under general anesthesia

PIGS, DOGS, CATS

Terminal bleeding/Perfusion under injectable anesthetic (Barbiturates/Ketamine/Other*)
Overdose of Injectable anesthetic (Barbiturates/Ketamine/Other*)
Potassium Chloride under general anesthesia

SMALL RUMINANTS

Terminal bleeding/Perfusion under injectable anesthetic (Barbiturates/Ketamine/Other*)
Overdose of Injectable anesthetic (Barbiturates/Ketamine/Other*)
Potassium Chloride under general anesthesia

NHP

Terminal bleeding/Perfusion under injectable anesthetic (Barbiturates/Ketamine/Other*)
Overdose of Injectable anesthetic (Barbiturates/Ketamine/Other*)

FISH & AMPHIBIANS

Tricaine methane sulfonate buffered (TMS, MS222)
Anesthesia followed by pithing
CHICKEN & BIRDS

CO2
Inhalant anesthetics
Terminal bleeding/Perfusion under injectable anesthetic (Barbiturates/Ketamine/Other*)
Overdose of Injectable anesthetic (Barbiturates/Ketamine/Other*)
Cervical Dislocation under sedation or anesthesia - Requires justification for use
Decapitation under sedation or anesthesia - Requires justification for use

2. Describe policies and practices for maintaining and ensuring function of equipment used for euthanasia.

- In several animal facilities there is an automatic device for CO2 euthanasia. The function is periodically checked by the ABBM maintenance person.
- The technicians follow the procedure to the end and are instructed to leave the animals for additional 10 minutes after the procedure, and to re-check lack of movement and breathing, before disposing of the carcasses.

Repeat this section for each animal housing area, including agricultural settings, temporary holding areas for field studies, aquatic environments, and each IACUC/OB approved satellite housing facility.

A. Location and Construction Guidelines

1. Note the location (building, floor, wing, etc.) of the animal facility(ies). Describe the management structure and program oversight for each of the areas listed in this section.

<table>
<thead>
<tr>
<th>Location (Campus)</th>
<th>Location (Building/site name)</th>
<th>Approx. sq. m. animal care &amp; use</th>
<th>species housed</th>
<th>floors</th>
<th>walls</th>
<th>ceilings</th>
<th>doors</th>
<th>specialized types of available animal housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ein Carem</td>
<td>Medicine Bldg., Units 3 &amp;4</td>
<td>SPF</td>
<td>317</td>
<td>Same building and campus</td>
<td>Mice, Rats</td>
<td>Epoxy coating</td>
<td>Paint</td>
<td>Washable, spring, window, ABSL-2 room, radioactive room</td>
</tr>
<tr>
<td></td>
<td>Medicine Bldg.</td>
<td>Conv.</td>
<td>15</td>
<td>Same building</td>
<td>Rabbits</td>
<td>Epoxy coating</td>
<td>Tiles</td>
<td>Washable,</td>
</tr>
<tr>
<td>Building</td>
<td>Type</td>
<td>Area</td>
<td>Location</td>
<td>Species</td>
<td>Surface</td>
<td>Construction Features</td>
<td>Cleanliness Features</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
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<td></td>
</tr>
<tr>
<td>Rabbit Room</td>
<td>Conv.</td>
<td>100</td>
<td>Same building and campus</td>
<td>Pigs, small ruminants,</td>
<td>Epoxy tiles</td>
<td>Concrete or plaster</td>
<td>Washable, spring, windo</td>
<td></td>
</tr>
<tr>
<td>Medicine Bldg., Large animal Unit</td>
<td>Conv.</td>
<td>80</td>
<td>Same building and campus</td>
<td>primates</td>
<td>Epoxy coating</td>
<td>Tiles</td>
<td>Washable, spring, windo, primates yards</td>
<td></td>
</tr>
<tr>
<td>Medicine Bldg., Primate Unit</td>
<td>Conv.</td>
<td>25</td>
<td>Same building and campus</td>
<td>Mice</td>
<td>Epoxy coating</td>
<td>Paint, constructive</td>
<td>Washable, spring, windo, Negative pressure cabinets</td>
<td></td>
</tr>
<tr>
<td>Pharmacy Rodent Unit SPF</td>
<td>SPF</td>
<td>36</td>
<td>Same building and campus</td>
<td>Mice, Rats</td>
<td>Epoxy coating</td>
<td>Paint, constructive</td>
<td>Washable, spring, windo</td>
<td></td>
</tr>
<tr>
<td>Sharet Inst. Rodent Unit SPF</td>
<td>SPF</td>
<td>114</td>
<td>Same building and campus</td>
<td>Mice, Rats</td>
<td>Epoxy coating</td>
<td>Paint, constructive</td>
<td>Washable, spring, windo</td>
<td></td>
</tr>
<tr>
<td>Parasitology Bldg. Conv.</td>
<td>69</td>
<td>Same building and campus</td>
<td>Mice, Rats, Psammomys, Amphibians</td>
<td>Epoxy coating</td>
<td>Paint, constructive</td>
<td>Washable, spring, windo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine Conv. SPF 25</td>
<td>SPF</td>
<td>25</td>
<td>Same Zebra</td>
<td>Tiles</td>
<td>Paint</td>
<td>Suspect</td>
<td>Washable, spring, windo</td>
<td></td>
</tr>
<tr>
<td>Location (Campus)</td>
<td>Location (Building/site name)</td>
<td>general arrangement of the animal facilities</td>
<td>Approx. sq. m. animal care &amp; use</td>
<td>physical relationship to the research labs.</td>
<td>Species housed</td>
<td>floor s</td>
<td>wall s</td>
<td>ceiling s</td>
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<tr>
<td>E. Safra</td>
<td>Wing 3</td>
<td>Conv.</td>
<td>20 Same building and campus</td>
<td>Amphi biens, PVC coating, Tiles</td>
<td>constr uctive</td>
<td></td>
<td></td>
<td>Washab le, spring,</td>
</tr>
<tr>
<td>Wing 4 – Upper level</td>
<td>SPF</td>
<td>Same building and campus</td>
<td>Mice, Rats, Epoxy coating, paint, constructive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td></td>
<td>Washab le, spring, window</td>
</tr>
<tr>
<td>Wing 4 – Lower level</td>
<td>SPF</td>
<td>Same building and campus</td>
<td>Mice, Rats, Epoxy coating, paint, constructive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td></td>
<td>Washab le, spring, window</td>
</tr>
<tr>
<td>&quot;Dirty Quarantine&quot;</td>
<td>Conv.</td>
<td>Same building and campus</td>
<td>Mice, Rats, tiles, paint, constructive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td></td>
<td>Washab le, spring, window</td>
</tr>
<tr>
<td>Bird Shed</td>
<td>Conv.</td>
<td>Same campus</td>
<td>Birds, soil, fence</td>
<td>Fence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mount Scopus</td>
<td>Psycholog y</td>
<td>Conv.</td>
<td>Same building and campus</td>
<td>Mice, Rats, tiles, paint, constructive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td>Washab le, spring, window</td>
</tr>
<tr>
<td>Rehovot</td>
<td>Veterinary Medicine School</td>
<td>SPF</td>
<td>Same building and campus</td>
<td>Mice, Rats, Epoxy coating, paint, constr uctive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td>Washab le, spring, window</td>
</tr>
<tr>
<td>Agri. Ruminant facility</td>
<td>Conv.</td>
<td>Same campus</td>
<td>Sheep, Concrete, Con structive, constructive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agri. Hen house facility</td>
<td>Conv.</td>
<td>Same campus</td>
<td>Chicken, Concrete, Con structive, constructive</td>
<td>Washab le, spring, window</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Functional Areas and Operations

1. Heating, Ventilation, and Air-Conditioning (HVAC) [Guide, pp. 139-140, 143]

a. Describe the mechanical systems used to provide temperature, humidity and air pressure control. Include details such as the use of variable air volume (VAV) systems, and additional key features of HVAC systems affecting performance.

Animal units are equipped with central HVAC systems. All systems supply 100% fresh air at a minimum of 15 air changes per hour. Cooling/heating is either from autonomous units or from central campus units.
Animal facilities are controlled and monitored automatically for temp, humidity and air pressure difference (in SPF units only).
We do not use VAV systems
Most units have cooling/heating back-up system. All units have a generator back-up in case of electrical failure.
Agri animals are kept in natural climatic conditions with forced ventilation.

b. Describe construction features that minimize the potential for adverse consequences to animal well-being, such as re-heat coils that fail closed or that are equipped with high-temperature cut-off systems.

All our re-heat coils are water operated (not electrical circuits) so that there is no danger of creating fire. In case of over-heating there is an alarm system connected to the attending vet and the maintenance person.

c. Describe how critical air pressures, ventilation, and temperature are monitored and maintained in the event of a system or component failure.

All animal facilities are monitored either by computerized systems or dialing systems (SENSAPHONE).
Both systems dial to the veterinarians and maintenance personnel in case of deviation from pre-established criteria.
The HU maintenance department has employees on call 24 hours a day, whom we can contact with needed.
In addition, the ABBM has a maintenance contract with an external HVAC service company, also on call 24/7.

d. Describe procedures for monitoring animal facility mechanical systems and notifying appropriate personnel in the event of a significant failure that occurs outside regular work hours.

As above.

a. Note if emergency power is provided for the animal facility and if so, what electrical services and equipment are maintained in the event the primary power source fails.

| a) All ABBM units are provided with an emergency power supply. Supply is guaranteed by the central maintenance department of the Hebrew University. |
| b) Emergency power enables the operation of all air handling units. |
| c) Emergency power is activated automatically and the ABBM computerized environmental system alerts the ABBM staff. |
| d) Every room at the ABBM has some (or all) electric sockets connected to emergency power supply. IVC units are connected to these sockets. |

b. Give history of power failures for the animal facility. Note frequency and duration. If emergency power was not available during a power failure, describe steps taken to ensure the comfort and well-being of the animals and the temperature extremes reached in the animal rooms during the failure.

Very rare (not more than once annually).

c. Describe lighting system(s) for the animal housing facility(ies). For each species or holding room type, list light intensity, photoperiod (Light:Dark), construction features (e.g., water resistance), and control (e.g., automatic versus manual, phasing). For systems automatically controlling photoperiod, describe override mechanisms.

- The determined light intensity is up to 300 lux, 1 meter above the floor.
- There are 12 hours of light a day. It is checked once a year by an external contractor that performs inspections in all animal facilities.
- The light fixtures are water resistant and the control is automatic.
- In order to make sure the lights are turned off on time (dark phase continues 12 hours), in some of the animal facilities there are photo-sensors which alarm when the light isn't turned off. In the others, there is a periodical checking performed by the technicians of the unit.
  In all units override mechanisms are located in locked cabinets (or can be activated from the vet computers)

3. System Malfunctions. If not previously reported, describe animal losses or health problems resulting from power, HVAC, or other life support system (e.g., individually ventilated cages) failures, and mechanisms for reporting such incidences. AAALAC International Rules of Accreditation (Section 2.f)

N/A
4. **Storage Areas [Guide, pp. 141-142]**

a. **Describe storage areas for feed and bedding, including temperature and vermin control.**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>a) Ein Carem:</td>
<td></td>
</tr>
<tr>
<td>- The main diet and bedding storage is on -2 floor. The storage area is isolated from external environment changes. Temperature is regularly monitored.</td>
<td></td>
</tr>
<tr>
<td>b) E. Safra:</td>
<td></td>
</tr>
<tr>
<td>- Bedding storage in two containers outside the animal facility.</td>
<td></td>
</tr>
<tr>
<td>- Diet is stored in the outer area of the animal facilities. All areas are temperature controlled.</td>
<td></td>
</tr>
<tr>
<td>c) Mount Scopus:</td>
<td></td>
</tr>
<tr>
<td>- Bedding and equipment are stored in a magazine about 30 meters from the animal facility.</td>
<td></td>
</tr>
<tr>
<td>- Diet is stored within the animal facility in a temperature controlled area.</td>
<td></td>
</tr>
<tr>
<td>d) Rehovot (Veterinary school):</td>
<td></td>
</tr>
<tr>
<td>No storage area, Diet and bedding are brought routinely and small quantities are held outside the facility in a controlled area.</td>
<td></td>
</tr>
</tbody>
</table>

Vermin control:
There is an external contractor who comes routinely (every 3 months) to disinfect (pesticide).
All storage areas have rodent traps that are routinely checked by the ABBM technicians

b. **Describe storage areas for cages, equipment, supplies, etc.**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Ein Carem:</td>
<td></td>
</tr>
<tr>
<td>- Two containers outside Pharmacy building for bedding and cardboard boxes.</td>
<td></td>
</tr>
<tr>
<td>- Large storage magazine for cages and equipment near the Harlan breeding farm.</td>
<td></td>
</tr>
<tr>
<td>b) E. Safra:</td>
<td></td>
</tr>
<tr>
<td>No storage area</td>
<td></td>
</tr>
<tr>
<td>c) Mount Scopus:</td>
<td></td>
</tr>
<tr>
<td>No storage area</td>
<td></td>
</tr>
<tr>
<td>d) Rehovot:</td>
<td></td>
</tr>
<tr>
<td>No storage area</td>
<td></td>
</tr>
</tbody>
</table>

c. **Describe storage areas for flammable or hazardous agents and materials (e.g., disinfectants, pesticides, fuel).**
Materials are brought to the ABBM in relatively small quantities. All the containers are held in spill containers according to the HU safety department regulations.

C. Special Facilities [Guide, pp. 144-146, 150]

1. Specialized Types of Animal Housing

Note specialized types of available animal housing spaces such as barrier, hazard containment (infectious, radioactive, chemical), "animal cubicles" (also known as "Illinois Cubicles", "Horsfal Cubicles," and "animal modules"), or facilities designed specifically for housing certain species such as aquatic or agricultural animals (e.g., barns, feedlots). [Guide, pp. 160-161]

See above.

ABS L 3 unit (not active for over 3 years) is isolated from other units. It has negative pressure cabinets that contain static micro isolator cages. The unit is equipped with an autoclave and a biological hood. Entrance is only by trained personnel.

ABS L2 and radioactive rooms include:
In Ein Carem facilities there are three animal rooms:
- ABSL-2 pathogen room in the 7th floor. About 10 Sq. m. Equipped with a biological hood.
- Two rooms designated for radioactive experiments in the 7th floor facility. Total of about 12 Sq. m. Built according to the safety department instructions.
- One PET-CT lab designated for radioactive experiments in the Sharet Building. Total of 20 Sq. m.
In E. Safra there is one ABSL -2 room in the basement area. About 15 Sq. m.
All ABSL-2 rooms have a separate set of gowns, shoe covers, gloves.
Large animal surgery – All workers are equipped with irradiation exposure badges.


a. Describe facilities for aseptic surgery, surgical support, animal preparation, surgeon’s scrub, operating room, and postoperative recovery.

<table>
<thead>
<tr>
<th>Campus</th>
<th>Building</th>
<th>Floor</th>
<th>Species</th>
<th>Nature of procedure</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ein Carem</td>
<td>Medicine</td>
<td>-1</td>
<td>Rabbits, pigs, ruminants, primates</td>
<td>Major, survival, emergency</td>
<td>Heavy</td>
</tr>
<tr>
<td>Ein Carem</td>
<td>Medicine</td>
<td>5</td>
<td>Primates</td>
<td>Minor (treatment)</td>
<td>Light</td>
</tr>
</tbody>
</table>
Describe other facilities such as imaging, irradiation, and core behavioral laboratories or rooms. Include a description of decontamination and methods for preventing cross-contamination in multi-species facilities.

Other specialized animal use facilities include MRI room, PET-CT room, cardiac evaluation room, fluoroscopy and ultrasound in the OR, Imaging room in Sharet (IVIS), behavioral research rooms in the Pharmacy building in Sharet and in the Parasitology Building, and several general research labs in the animal facilities.

All these areas are treated as animal rooms regarding decontamination procedures, entry of only SPF animals from approved sources and activity by authorized personnel.

4. Other Animal Support Facilities

Describe other facilities providing animal care and use support, such as food preparation areas, feedmills, abattoirs, etc.

N/A

Describe such features as control of entry, perimeter fences, gates, entryways, cameras, guards.

HU sites:
    a. The perimeters of all HU campuses are fenced. The entrance gates are guarded 24 hours and only authorized vehicles and personnel can enter.
    b. HU security personnel are on campus 24 hours and perform night and off hour patrols.
    c. All ABBM facilities are locked and the entrance is through palm readers.
    d. Most rooms have a coded lock on the door.
    e. Most units are connected to a computerized environmental system that signals when forcing doors. Signaling is through the cellular phones to ABBM personnel.
    f. Primate and large animal unit is equipped with cameras connected to the attending vet’s computer.
App 1a – Authority for Biological and Biomedical Models (ABBM)
Organizational Chart – Oct. 2014
IACUC Chair
Prof. A. Fainsod

HU IACUC
(includes the IO - VP for R&D – Prof. Arkin)

IACUC
E. Safra & Mount Scopus Campus
Chair – Prof. Yarom

IACUC
Agri. Campus
Chair – Dr. Mabjeesh

Attending Veterinarian
ABBM
Director – Rony Kalman

IACUC
Ein Carem Campus
Chair – Prof. Nussinovitch
# Appendix 2- IACUC/OB Membership Roster

## HU Main IACUC

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Role</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Fainsod</td>
<td>Ph.D.</td>
<td>Chair person</td>
<td>Faculty of Medicine staff.</td>
</tr>
<tr>
<td>I. Nussinovitch</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Chair of Ein Carem IACUC Faculty of Medicine Staff</td>
</tr>
<tr>
<td>J. Yarom</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Chair of E. Safra &amp; Mount Scopus IACUC, Faculty of Natural Sciences staff</td>
</tr>
<tr>
<td>I. Arkin</td>
<td>Ph.D.</td>
<td>Member (IO)</td>
<td>HU VP for R&amp;D and Chair of ABBM</td>
</tr>
<tr>
<td>S. Mabjeesh</td>
<td>DVM Ph.D.</td>
<td>Member</td>
<td>Chair of Agriculture IACUC &amp; Faculty of Agriculture, Dep. Of Animal Sciences staff</td>
</tr>
<tr>
<td>R. Yirmiya</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Social Sciences, Dep. Of Psychology – Mount Scopus staff</td>
</tr>
<tr>
<td>N. Shpigel</td>
<td>DVM, Ph.D.</td>
<td>Member</td>
<td>Faculty of Agriculture, Vet. school staff</td>
</tr>
<tr>
<td>E. Budick</td>
<td>Ph.D.</td>
<td>Non Life Science member</td>
<td>Faculty of Humanities staff</td>
</tr>
<tr>
<td>I. Magora</td>
<td></td>
<td>Member</td>
<td>HU academic secretary, Rector’s office.</td>
</tr>
<tr>
<td>I. Uzi</td>
<td>DVM</td>
<td>Member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>R. Kalman</td>
<td>DVM Ph.D. DECLAM</td>
<td>Member</td>
<td>ABBM Director Attending Veterinarian</td>
</tr>
<tr>
<td>Name</td>
<td>Degree</td>
<td>Role</td>
<td>Affiliation</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
<td>-----------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>I. Nussinovitch</td>
<td>Ph.D.</td>
<td>Chair person</td>
<td>Faculty of Medicine, Anatomy and Cell Biology</td>
</tr>
<tr>
<td>N. Eshkol</td>
<td>DVM</td>
<td>member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>S. Even-Ram</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Hadassah Medical Center Microbiology</td>
</tr>
<tr>
<td>A. Peled</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Hadassah Medical Center, Inst. Of Gene Therapy</td>
</tr>
<tr>
<td>N. Shpigel</td>
<td>DVM, Ph.D.</td>
<td>Member</td>
<td>School of Veterinary Medicine</td>
</tr>
<tr>
<td>A. Binshtok</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Medicine, Neurobiology</td>
</tr>
<tr>
<td>H. Lemberg</td>
<td>Ph.D.</td>
<td>Member – Not a researcher</td>
<td>Hadassah Medical Center R&amp;D Dep.</td>
</tr>
<tr>
<td>M. Hanani</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Hadassah Medical Center, Dep. Of General Surgery</td>
</tr>
<tr>
<td>R. Gabizon</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Hadassah Medical Center Neurology</td>
</tr>
<tr>
<td>O. Grafstein</td>
<td>Ph.D.</td>
<td>Biological Safety officer</td>
<td>HU Safety Dep.</td>
</tr>
<tr>
<td>E. Golomb</td>
<td>Ph.D.</td>
<td>Non Affiliated Member</td>
<td>Shaarei Tzedek Hospital</td>
</tr>
<tr>
<td>Y. Ben-Shaul</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Medicine, Dep. Of Physiology</td>
</tr>
<tr>
<td>R. Aqeilan</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Medicine, Dep. Of Immunology</td>
</tr>
<tr>
<td>O. Benny</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Medicine School of Pharmacy</td>
</tr>
<tr>
<td>Y. Dagan</td>
<td>DVM</td>
<td>Member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>U. Uzi</td>
<td>DVM</td>
<td>Member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>R. Kalman</td>
<td>DVM, Ph.D., Dip. ECLAM</td>
<td>Member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>Y. Ginosar</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Hadassah Medical Center</td>
</tr>
<tr>
<td>S. Eyal</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Medicine School of Pharmacy</td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td><strong>Degree</strong></td>
<td><strong>Role</strong></td>
<td><strong>Affiliation</strong></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>--------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>J. Yarom</td>
<td>Ph.D.</td>
<td>Chair person</td>
<td>Faculty of Natural Sciences. Inst. Of Life Science</td>
</tr>
<tr>
<td>Y. Fitelson</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Retired, Faculty of Natural Sciences, Dep. Of Chemistry staff</td>
</tr>
<tr>
<td>O. Grafstein</td>
<td>Ph.D.</td>
<td>Biological Safety Officer</td>
<td>HU Safety Dep.</td>
</tr>
<tr>
<td>U. Gat</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Faculty of Natural Sciences. Inst. Of Life Science</td>
</tr>
<tr>
<td>A. Davidian</td>
<td></td>
<td>Biological Safety Officer</td>
<td>HU Safety Dep.</td>
</tr>
<tr>
<td>D. Ginzburg</td>
<td>Ph.D.</td>
<td>Non affiliated member</td>
<td>Faculty of Natural Sciences. Inst. Of Life Science</td>
</tr>
<tr>
<td>R. Kalman</td>
<td>DVM Ph.D. Dip. ECLAM</td>
<td>Member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>N. Epstein</td>
<td></td>
<td>Coordinator</td>
<td>Faculty of Natural Sciences. Inst. Of Life Science</td>
</tr>
</tbody>
</table>
## Rehovot IACUC

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Role</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Mabjeesh</td>
<td>DVM Ph.D.</td>
<td>Chair person</td>
<td>Faculty of Agriculture, Dep. Of Biochemistry and Nutrition</td>
</tr>
<tr>
<td>D. Levin</td>
<td>Public representative</td>
<td>Non affiliated member</td>
<td></td>
</tr>
<tr>
<td>A. Ttoen</td>
<td>Ph.D.</td>
<td>member</td>
<td>Faculty of Agriculture, Dep. Of Biochemistry and Nutrition</td>
</tr>
<tr>
<td>E. Cohen Halala</td>
<td></td>
<td>Biological Safety Officer</td>
<td>Biological Safety Dep.</td>
</tr>
<tr>
<td>D. Ohad</td>
<td>DVM.</td>
<td>Member</td>
<td>Agriculture faculty, veterinary Science</td>
</tr>
<tr>
<td>R. Kalman</td>
<td>DVM Ph.D. Dip. ECLAM</td>
<td>Member</td>
<td>ABBM Veterinarian</td>
</tr>
<tr>
<td>Z. Rot</td>
<td>Ph.D.</td>
<td>Member</td>
<td>Agriculture faculty, animals and cell biology</td>
</tr>
</tbody>
</table>
Appendix 3- Aquatic Systems Summary* – Part I

Please summarize water management and monitoring information programs for each animal facility, including all satellite facilities/rooms/enclosures. The following key will assist you in completing the form:

1. List location of aquaria, including outdoor enclosures (ponds or outdoor tanks). If indoors, list building and room number. Note that all species housed at the same location and maintained via the same design and monitoring may be listed in the same row.
2. Please indicate if embryonic (E), larval (L), juvenile (J) or Adult (A).
3. Group tanks (ponds, outdoor tanks, multiple aquaria) are arranged as arrays with shared water supply; individual aquaria have exclusive water handling systems.
4. Indicate water type, e.g., fresh, brackish, or marine.
5. Indicate water circulation, e.g., static, re-circulated, constant flow, or some combination of these. If applicable, indicate water exchange frequency and amount (percentage).
6. Provide a key word for filtration employed, e.g., biological, chemical, mechanical, etc. and type (e.g., mechanical-bead filter). A diagram may be provided showing the flow of water, filtration, source of “make-up” water and amount replaced daily.

### Part I

<table>
<thead>
<tr>
<th>Location</th>
<th>Species</th>
<th>System Design</th>
<th>Water Type</th>
<th>Pre-treatment</th>
<th>Circulation</th>
<th>Filtration</th>
<th>Disinfection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ein Carem conventional unit</td>
<td><em>Xenopus levis</em></td>
<td>Group tanks</td>
<td>Fresh tap water</td>
<td>Active charcoal filtration and dechlorination</td>
<td>static</td>
<td>Active charcoal filters</td>
<td>N/A</td>
</tr>
<tr>
<td>E Safra amphibian unit</td>
<td><em>Xenopus levis</em></td>
<td>Group tanks</td>
<td>Fresh tap water</td>
<td>Dechlorination</td>
<td>static</td>
<td>Active charcoal filters</td>
<td>N/A</td>
</tr>
<tr>
<td>Ein Carem Zebra fish unit</td>
<td><em>Danio rerio</em></td>
<td>Group tanks</td>
<td>Fresh tap water</td>
<td>Reversed osmosis</td>
<td>90%</td>
<td>Particle filter Charcoal filter</td>
<td>UV</td>
</tr>
</tbody>
</table>
*Records of equipment maintenance (filter changes, UV bulb changes, probe changes, calibrations, etc.) should be available for review.

Aquatic Systems Summary – Part II

### Part II

#### Monitoring

*Indicate in the boxes below the frequency of monitoring and method of control for the following parameters. (1)*

<table>
<thead>
<tr>
<th>Location (from Part I)</th>
<th>Temperature</th>
<th>Salinity</th>
<th>pH</th>
<th>NH$_4$</th>
<th>NO$_2$</th>
<th>NO$_3$</th>
<th>Dissolved O$_2$</th>
<th>Total Dissolved gases</th>
<th>Other. Please List (2):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ein carem conventional unit</td>
<td>Every two weeks manually</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td></td>
<td></td>
<td>Every two weeks Conductivity Digital meter</td>
</tr>
<tr>
<td>E Safra amphibian unit</td>
<td>Every two weeks manually</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td>Every two weeks</td>
<td></td>
<td></td>
<td>Every two weeks Conductivity Digital meter</td>
</tr>
<tr>
<td>Ein Carem Zebra fish unit</td>
<td>Twice daily (Sunday-Thursday) Once daily (Friday-Saturday)</td>
<td>Twice daily (Sunday-Thursday) Once daily (Friday-Saturday)</td>
<td>Twice daily (Sunday-Thursday) Once daily (Friday-Saturday)</td>
<td>Once weekly</td>
<td>Once weekly</td>
<td>Once weekly</td>
<td></td>
<td></td>
<td>Once daily Differential pressure before and after filters - daily</td>
</tr>
</tbody>
</table>
(1) In these columns, please indicate monitoring frequency, e.g. daily, weekly, monthly or other point sampling frequency; continuous/real time, or none, if applicable. Also indicate method of control (heaters versus room HVAC, hand versus auto dosing, etc.).

(2) Indicate other parameters and their monitoring frequency, e.g., alkalinity, total hardness, conductivity, chlorine/chloramine, etc.

This information may be provided in another format, provided that all requested data is included.
Appendix 4

Animal Safety Guidelines
Hebrew University of Jerusalem
(translated by Dr. Ora Grafstein, Biological Safety Officer)

Resources:


III. Additional sources:

1. Hebrew University regulations and guidelines regarding biological, chemical and radiation safety, and hazardous waste disposal.

2. Hebrew University ABL3 Unit Operating Procedures - December 2005, including chapters on:
   1. Worker training.
   2. Ordering animals.
   3. Animal intake.
   4. Equipment intake.
   5. Entrance and exit of personnel from the ABL3 unit.
   6. ABL3 log and incident report.
   7. Routine animal facility procedures for ABL3 workers.
   8. Morning inspection.
   10. Autoclave use.
   12. Removing equipment from the ABL3.

Appendix: Animal inspection (in cage).


Appendix 5

<table>
<thead>
<tr>
<th>Year of review</th>
<th>Disaster plan</th>
<th>Edition:01; Version 01</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>ALL-AWORK-DISASTER-001</td>
<td>Date.09.03.2014</td>
</tr>
</tbody>
</table>

1. **Purpose**

Preparation of an action plan for various emergencies

2. **Domain**

All authority employees

3. **Safety**

No special specifications for this procedure.

4. **Instructions**

4.1 Disaster type
4.2 Means of communication
4.3 Equipment supply
4.4 Evacuation procedures
4.5 Veterinary medical care
4.6 Drill
4.7 General instructions during an event
## 4.1. Disaster type

<table>
<thead>
<tr>
<th>Disaster type</th>
<th>Likeliness of occurrence</th>
<th>Geographical boundaries</th>
<th>Impact (People\animals\equipment)</th>
<th>Duration of event (hours\days\weeks)</th>
</tr>
</thead>
</table>
| Fire          | Low                      | Within the unit          | Damage to animal facility equipment  
Structural damage  
People – physical harm  
Animals – physical harm | Hours |
| War           | Intermediate             | National                 | Unit shutdown  
Personnel drafting  
Direct damage  
People  
Animals – lack of care | Days-weeks |
| Terror        | Low                      | Within the unit          | Structural damage  
Harm to people  
Harm to animals | Hours |
| Activists     | Low-Intermediate         | Within the unit          | Structural damage  
Public relations  
Harm to people  
Releasing animals from cages | Minutes-hours |
| Power out     | Low-Intermediate         | Campus                   | Environmental control systems shut-down  
Alteration of animal environmental parameters | Minutes-hours |
| Earthquake    | Low                      | National                 | Structural damage  
Harm to people  
Harm to animals | Unknown |
Alternative service which we may need to provide:

4.1.1.1. Emergency provisions for the animals.
4.1.1.2. Evacuation of animals into temporary shelters.
4.1.1.3. Veterinary medical care.
4.1.1.4. Continuation of routine animal care.

4.1.2. Animal cages and equipment required for these services:

4.1.2.1. Food and water.
4.1.2.2. Rodent cage rack and rodent cages.
4.1.2.3. Canine flight cages.
4.1.2.4. Rodent cardboard boxes.
4.1.2.5. Anesthesia and sedation agents for large animals.

4.1.3. The unit’s vehicle must be available.

4.2. Means of communication

4.2.1. Running electricity

4.2.1.1. Land phones.
4.2.1.2. Mobile phones.
4.2.1.3. Email.
4.2.1.4. PA system.

4.2.2. Power out

4.2.2.1. Land phones (partial).
4.2.2.2. Mobile phones.
4.2.2.3. Messengers.
4.3. Equipment supply

4.3.1. Emergency supply:

4.3.1.1. Emergency list intended to help emergency teams which include the general staff-veterinarians-maintenance man teams.

4.3.1.2. Equipment will be kept in the central command of the unit to be distributed when necessary.

4.3.1.3. This equipment will be used in case of emergency only.

4.3.1.4. Equipment list:

4.3.1.4.1. Rechargeable flashlights.

4.3.1.4.2. Tool box.

4.3.1.4.3. Long electrical extension cord + splitters.

4.3.1.4.4. First aid kit.

4.3.1.4.5. Heavy work gloves.

4.3.1.4.6. Master key.

4.3.1.4.7. Copy of this procedure.

4.3.1.4.8. Updated contact page.

4.3.2. Animal emergency provisions:

4.3.2.1. Water

4.3.2.1.1. There are 2 water tanks on the roof of the 7th floor of the medical building that can be used in case of necessity.

4.3.2.1.2. In the event of an interruption to the water supply, the water system on the roof of Building 3 will be used. The water will be acidified and dispensed to the rodents.

4.3.2.2. Additional provisions supplied routinely:

4.3.2.2.1. Food.

4.3.2.2.2. Bedding.

4.3.2.2.3. Clean cages.

4.3.2.3. Required environmental temperature:
Environment temperature kept by routine and emergency systems (University’s generator).

4.3.2.3.1. Rodents: 20-24
4.3.2.3.2. Rabbits: 19-22
4.3.2.3.3. Large animals: 22-24

4.3.2.4. Situations requiring intervention:

4.3.2.4.1. **Heat:** temperature rising by 2 degrees or more.
   4.3.2.4.1.1. The hoods in the animal rooms must be turned off. There is a possibility to add fans in order to control the elevated temperature.
   4.3.2.4.1.2. Animal rooms’ doors must be kept open to maintain circulation.
   4.3.2.4.1.3. If possible, fans should be placed in the corridors in order to flow cool air into the various rooms.
   4.3.2.4.1.4. In case the mentioned above dose not lower the temperature, the team leader will make a decision as to further actions.
   4.3.2.4.1.5. Evacuation of animals to a temporary shelter will be done only under the instructions of a veterinarian.

4.3.2.4.2. **Cold:** temperature dropping by 2 degrees or more.
   4.3.2.4.2.1. If possible, heaters should be used to raise the temperature.
   4.3.2.4.2.2. In case of a prolonged power-out, evacuation of animals should be consulted with the veterinarian.

4.4. Evacuation procedures

4.4.1. People:
   4.4.1.1. Decision making and personnel updates will be held in the following locations:
4.4.1.1.1. Ein-karem – Medical school entrance lobby.
4.4.1.1.2. Givat-ram – conference room next to veterinarian’s office in structural biology building.
4.4.1.1.3. Mount-scopus – next to administration gate.
4.4.1.1.4. Rehovot – veterinarian’s office in the vet school building.
4.4.1.2. The arrival of all personnel to the assigned assembly location must be confirmed.
4.4.1.3. Communication between all parties involved is essential.

4.4.2. Animals
4.4.2.1. When there a decision to evacuate all animals from the different units due to danger, the following measurements must be taken: Adequately maintaining the required temperature.
4.4.2.2. Maximum maintenance of microbiological environment.
4.4.2.3. If possible, the transfer should be performed in the units’ vehicle.

4.5. Veterinary medical care
The vet in the emergency team should be available at all times for administering veterinary medical care if needed.

4.6. Drill
4.6.1. Drills of the conduct in emergency situations have been carried out with the Authority of biological models’ staff and taught in during the units’ annual seminar.
4.6.2. The Hebrew University and civilian defense authorities have performed emergency situation drillings.
4.6.3. An updated list of contact numbers for national, University and biological models authority’s emergency units is fixed on the walls of all the units of the authority, and is updated at least once a year.

4.7. General instructions during an event

4.7.1. Command center:

The area functioning as the command center: in Ein-karem – the main office, in Givat-ram – the veterinarian’s office, in Rehovot – the veterinarian’s office.

4.7.2. List of priorities:

Human life safety must be placed at the top of the list:

4.7.2.1. Human life

4.7.2.1.1. If the given emergency situation is hazardous to humans, their safe evacuation to the assigned meeting place, according to the contact list in the command center, must be made sure.

4.7.2.1.2. Only after verifying the presence of all evacuated personnel before proceeding with further actions according to the priority list.

4.7.2.1.3. Public health and environment safety

In case of emergency involving hazardous \ volatile substances, the university’s safety unit must be contacted to avoid contamination and perform purification.

4.7.2.2. Animals:

List of the units’ evacuation order according to species:

4.7.2.2.1. Monkeys

4.7.2.2.2. Dogs\Cats

4.7.2.2.3. Barn animals\Rabbits
4.7.2.2.4. Rodents:
   4.7.2.2.4.1. GEM breeding pairs
   4.7.2.2.4.2. Research animals
   4.7.2.2.4.3. Breeding stocks
4.7.2.2.5. Amphibians
4.7.2.2.6. Fish

5. Relevant documents
   5.1. National emergency numbers page
   5.2. Authority contact page
Appendix 6

Regulations and Instructions issued by the Israeli National Council on Animal Experimentation
MINISTRY OF HEALTH
THE COUNCIL FOR EXPERIMENTS ON ANIMAL SUBJECTS

25/1/2010

This Note:

Minister of Health

With reference to your note of 31/01/2010

I wish to inform you that the meeting of the Council for Experiments on Animal Subjects has been postponed to 25/1/2010.

The meeting will be held at the Ministry of Health.

Yours sincerely,

[Signature]

[Note: The text is in Hebrew and English, with the English text preceding the Hebrew text. The English text is a notice to the Council regarding a postponed meeting. The Hebrew text is a copy of the English text.]
התרחשות נוספת במפגש הלאקטיוסikelוקסין קוקוס ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.  

לעמיקות של החיבור הקוקוס מאוזן ברוחב התרחשות ברוב מתן ירייה לאירטוגונון, גם כן.

לאחר המפגש בתרחשות התרחשות ברוב ירייה לאירטוגונון, גם כן.

א. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ב. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ג. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ד. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ה. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ו. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ב. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ג. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ד. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ה. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ו. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ב. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ג. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ד. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ה. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.

ו. האנקור של קוקוס פלט חלב מסתובב בברור תרמוסילוקסין ממקצת המשחת כמות מקורות של חלב בהליך התייבשות של הקוקוס.
㎏וֹפֶסֶם שֵׁאלוֹמִים

אֵישֶׁר הֹוָדוֹתִהוּ לְהוֹדוֹתִיָּה גּוֹפֵם בָּעֲלֵיתָוּ לְאַמּוּת וּלְהָלַעְתָּוּ לְקִהֲלָתָוּ לְהוֹדוֹתִיָּה. ייְחָד אָנֵה בַּפְּרֵסִים נִנְפָּרִים לְכָל מַעֲלֵיהָ. בַּפְּרֵסִים נִנְפָּרִים לְכָל מַעֲלֵיהָ.
MINISTRY OF HEALTH
THE COUNCIL FOR EXPERIMENTS ON
ANIMAL SUBJECTS

17/02/2011

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1. The impact of technology on education has been significant over the past decade. The advent of online learning platforms has allowed students to access educational resources from anywhere, anytime. This has led to an increase in the number of students pursuing higher education. Furthermore, technology has facilitated the creation of customized learning experiences tailored to individual student needs.

2. Despite the benefits, there are also concerns about the reliance on technology. Some argue that it can lead to a decrease in critical thinking skills and the ability to engage in face-to-face interaction. Additionally, there is a growing concern about the potential for technology to widen the achievement gap among students who do not have equal access to digital resources.

3.政策制定者 and educators are working to address these challenges. Efforts include increasing digital literacy among students, improving equity in access to technology, and integrating technology into the curriculum to enhance student engagement and learning outcomes.

4. However, more research is needed to fully understand the impact of technology on education. This includes examining the role of technology in different learning environments and identifying effective strategies for integrating technology into the classroom.

5. Despite the challenges, the potential benefits of technology in education cannot be忽视. It is crucial for policymakers, educators, and technology providers to work together to ensure that technology is used effectively and equitably to support student learning.
החלטת המועצה ליחסים במעלי חים - 2/2003

החלטת המועצה דבר ערכיה ניסיוני לטרכי קיבוץ יrvine לברך

לכבוד:

הוראות הסדר של הארגון למיסים המאוישים בבניין

החלטתلغיש לי הניסויים בבניין המלון בברכה ב-15.6.2003

החלטת המועצה ליחסים במעלי חים: "נאירו בברכה בארוחת היום לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברך לברכ".

נטファזב אופניים קצק להנאת ברכה.

בברכה,

מי הבירן

פרימר אandest

ידי המועצה
מכתב

מרק מוסד / יורי ועדת מוסדות

שלום רב,

נוחותتعليم ממקימי סקיפיקולוציות רעלת

הคำถาม לשירות הלופיטה של הספרות והערכהANK בתקופהHonскийולקחיון בית הספרות של הספרות של הספרות של הספרות של הספרות של הספרות של הספרות של ספר

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ואנחנו דברים

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PREVENTION OF CRUELTY TO ANIMALS LAW (EXPERIMENTS ON ANIMALS) 5754-1994
PREVENTION OF CRUELTY TO ANIMALS RULES (EXPERIMENTS ON ANIMALS) 5761-2001
correct as of December 1, 2005

PREVENTION OF CRUELTY TO ANIMALS LAW (EXPERIMENTS ON ANIMALS) 5754-1994

CHAPTER ONE: INTRODUCTION

Definitions
1. In this Law -
   "prevention of cruelty to animals society" - a registered body corporate, the purpose and activity of which is the protection of animals, the prevention of their suffering and concern for their welfare;
   "animal facility" - a place where animals are raised for experimental purposes;
   "animal house" - the location and infrastructure, in which animals are kept before, during and after the performance of experiments;
   "animal" - any vertebrate, other than a human being;
   "kill" - killing an animal while preventing unnecessary suffering;
   "the Director" - the Director of Veterinary Services in the Ministry of Agriculture;
   "supervising veterinarian" - the person appointed as responsible for supervision under section 5(b);
   "qualified researcher" - the employee of an institution, whom the director of the institution authorized to carry out experiments on animals, and who was trained in the minimalization of suffering of the laboratory animals, as the Council prescribed in Rules;
   "educational institution" - an educational institution, within its meaning in the Compulsory Education Law 5709-1949;
   "institute of higher education" - an institution given recognition as an institution of higher education under section 13 of the Council of Higher Education Law 5718-1958;
"institution" - a scientific, research, medical, industrial, educational institution or an institution of higher education, in which experiments on animals are carried out, including an animal house;
"defense establishment" - the Ministry of Defense and its attached units, the Israel Defense Forces or any other institution that operates for a defense purposes and which, for purposes of this Law, was approved by the Minister of Defense;
"experiment on animals" - an experiment on animals, for one of the following purposes:
   (1) the advancement of health and of medicine and the prevention of suffering;
   (2) the advancement of scientific research; (3) testing or producing materials or objects; (4) education and teaching;
"veterinarian" - a veterinarian with a degree as specialist in the medicine of laboratory animals or a veterinarian whom the Director authorized for the purposes of this Law;
"public servant" - a State employee or a municipal employee;
"the Minister" - the Minister of Health.

CHAPTER TWO: THE COUNCIL

Council for Experiments on Animals
2. (a) A Council for Experiments on Animals is hereby established (hereafter: the Council); the Council shall have twenty-three members who shall be appointed by the Minister, as follows:
   (1) six representatives of the National Academy of Science, of them two from the sphere of the life sciences or medicine, and four from the spheres of social science, liberal arts, exact science and law, one from each sphere;
   (2) the director of a school of veterinary medicine;
   (3) two deans of schools of medicine or their deputies;
   (4) a representative of the scientific council of the Israel Medical Association;
   (5) a representative of the scientific council of the Israel Veterinarians Association, who is a veterinarian;
   (6) a representative of the Israel Manufacturers Association; (7) a representative of the Minister of Health;
   (8) a representative of the Minister of Education, Culture and Sport;
   (9) a representative of the Minister of Science, Arts and Technology;
   (10) a representative of the Minister of Justice;
   (11) a representative of the Minister of Religious Affairs;¹
   (12) a representative of the Minister of the Environment;
   (13) the chairman of the Committee on Animal Experiments in the defense establishment;
   (14) the Director or a person authorized by him;
   (15) three representatives recommended by the roof organization of prevention of cruelty to animals societies, and
when there is no roof organization - from among persons recommended by prevention of cruelty to animals societies.

(b) The Minister may veto the candidacy of a representative, except for the representatives under paragraphs (2) and (13), if he is convinced that the appointment is liable to have a substantial adverse effect on the functioning of the Council.

c) If the candidacy of a representative was vetoed, then in his place the Minister shall appoint another, recommended by the same body, which the representative whose candidacy was vetoed represented.

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1 After the Ministry of Religious Affairs was dissolved, this power passed to the Minister of Health (YP of 5764, p. 1642)

(d) The term of a Council member's service is four years; a Council member may be reappointed.
(e) The Minister shall appoint one of the Council members, who was appointed under subsection (a)(1) to be chairman of the Council.

Termination of a Council member's term of office

3. (a) A Council member shall cease serving before the end of his term of office when one of the following occurs:

1. he resigned by delivering a letter of resignation to the Minister;
2. he is permanently unable to exercise his position or his continued membership is liable to have a real adverse effect on the functioning of the Council, and the Minister - after consultation with the chairman of the Council - removed him from his position by written notice;
3. he was convicted of an offense that, in the opinion of the Attorney General, is heinous;
4. he no longer holds a position in the body, on behalf of which he was appointed.

(b) When an indictment has been brought against a Council member for an offense which, on the face of it, is heinous, then the Minister may - in consultation with the Attorney General - suspend him from his position until final judgment on his case is handed down.

(c) If a Council member is absent from three consecutive meetings, then he shall cease being a member of the Council, unless he was absent because of illness or service in the Israel Defense Forces, or by written permission from the chairman of the Council, given in advance.

(d) When the term of office of a Council member has been terminated, the Minister shall appoint another in his place from the same body, which the member whose term of office was terminated represented.

The Council's functions

4. The Council is in charge of the subject of experiments on animals, and without derogating from its other functions -

1. it shall prescribe Rules, with the Minister's approval, for the grant of permits to carry out experiments on animals, and on the way
the experiments are to be carried out, all in order to ascertain that suffering caused to animals is minimized, and to prevent the conduct of superfluous experiments;

(2) it shall prescribe Rules, with the Minister's approval, about training in the sphere of minimizing the suffering of laboratory animals;

(3) it shall initiate information programs on subjects within the scope of its activity, as well as training and guidance programs for scientists on subjects connected to experiments on animals;

(4) it shall prescribe Rules, with the Minister's approval, for the maximum number of experiments that may be carried out on one animal;

(5) it may prescribe, with approval by the Minister and the Knesset Finance Committee, fees for applications and for permits granted under this Law; the amounts of the fees shall be used for the Council's activities and for other activities under this Law, and they shall be expended according to the Council's decisions.

Appointment of officers

5. (a) After consultation with the chairman of the Council, the Minister shall appoint an employee of the Ministry of Health to be the secretary responsible for the Council's administrative work.

(b) After consultation with the Council the Minister shall appoint a veterinarian, who will be responsible for the supervision in institutions.

Visits by Council members

6. Council members may - with permission from the chairman of the Council or according to arrangements prescribed by him - visit every place where experiments on animals are carried out, on condition that the Council members take the common precautions necessary in order to prevent interference with the experiment.

Meetings and procedures

7. (a) The Council shall convene at least three times a year, and also at the demand of one third of its members.

(b) A majority of Council members shall constitute a quorum for the approval of Rules.

(c) The Council shall determine its own procedures, as far as they have not been prescribed by this Law.

CHAPTER THREE: EXPERIMENTS ON ANIMALS

Experiments on animals

8. (a) Experiments on animals shall only be carried out under this Law.

(b) The number of animals in any experiment shall be limited to the minimal number required for the performance of the experiment.

(c) Experiments on animals shall be carried out with close attention to minimizing the pain and suffering caused to them.
(d) Experiments on animals shall be carried out as said in the Schedule.

**Experiments on animals are prohibited where there are alternatives**

9. No permit shall be granted for the conduct of any experiment on animals, if the objective of the experiment can be attained by reasonable alternate means.

**Experiments to test cosmetic preparations and cleaning materials**

10. No experiment shall be carried out to test cosmetic preparations, unless it be for reasons of health, and to test cleaning materials, except under a permit given for them by the Council plenum.

**Qualified researcher**

11. (a) Experiments on animals shall only be carried out by qualified researchers at institutions approved by the Council, in accordance with Rules prescribed by it.

(b) If a researcher carries out an experiment for a purpose other than teaching alone, then he must keep records according to a procedure, which the Committee set up under section 13 will prescribe, and when the experiment is concluded he shall report the results of the experiment to it.

(c) (1) Notwithstanding the provisions of subsection (a), students at an educational institution or at an institution of higher education may carry out experiments in the presence and under the supervision of a qualified researcher;

(2) for the purposes of this Law, all educational institutions shall be deemed a single institution, the director of which is the Director General of the Ministry of Education, Culture and Sport.

**Institutional permit**

12. The Council shall have the authority to permit experiments to be carried out at an institution, for which all the following hold true:

(1) the institution prepared a set of written guidelines, which obligate the employees and which was approved by the Council, on how animals are to be kept, on work procedures at the institution, on safety procedures, methods of anesthesia, the handling of animals, killing them, disposing of them in compliance with all statutes while paying attention to the prevention of damage to the environment, and on training for employees;

(2) the institution employs a veterinarian, who supervises the health and welfare of the animals and provides medical treatment for them, is in charge of disease prevention, of the minimization of the animals' suffering before, during and after the experiments and - when necessary - their euthanasia, and who instructs staff members on these subjects.

**Committee for the grant of permits for experiments on animals**
13.  (a) The Council shall appoint a Committee from among its members, which will be authorized to permit experiments on animals; it shall have at least three members, among them a veterinarian who shall serve as chairman, a researcher from the sphere of the life sciences or medicine, and a member who is not from the sphere of the life sciences or medicine.

(b) An application to the Committee, for approval of an experiment, shall include, inter alia -

(1) general information on the purpose of the experiment and its planned conduct;

(2) a detailed proposal of the plan for the experiment;

(3) reasons why the experiment is necessary and possible alternatives, if available.

(c) Notwithstanding the provisions of subsection (b), when the sole purpose of the experiment is educational, then the permit may be granted for the method of the experiment and its principles, and for any change therein.

(d) The Committee is authorized to permit an experiment on animals after it considered the matter and concluded that it complies with the requirements of sections 8, 9 and 11, and with the Rules of the Council.

(e) A permit may be granted by the Committee for a program of experiments that includes more than one experiment.

(f) The Committee's permit shall be subject to the provisions of this Law and to the Council's Rules, which were prescribed thereunder.

**Internal committee**

14.  (a) Notwithstanding the provisions of section 13, a Government Ministry, an institution of higher education, an educational institution or institution approved by the Council for this purpose, may set up an internal committee, one of its members being a veterinarian, and for that institution it shall perform the functions of the Committee set up under section 13.

(b) The committee shall act in compliance with the Council's Rules, or under internal rules, which the institution made for itself and which the Council approved.

(c) The committee shall report to the Council every six months about the experiments it permitted.

(d) If the chairman of an internal committee in a Government Ministry or in an institution of higher education concludes that - if an experiment is not carried out - there is an immediate danger to public health or to the health of animals, and that it is not possible to convene the committee urgently, then he may permit the experiment.

**Supervision of institutions**

15.  The supervising veterinarian or a public servant whom he appointed for this purpose may - after he so informed the Council - enter at any time any institution and any animal facility, on condition that he take the
necessary steps to prevent interference with an experiment, and he may read any document, in order to check whether the provisions of this Law are complied with.

**Control Committee**

16. (a) The Council shall appoint a Control Committee headed by the representative of the Minister of Justice, and the Director or his representative and a researcher from the sphere of medicine or the life sciences shall be its members.
(b) If the supervising veterinarian or the public servant appointed for that purpose concludes that an experiment was carried out in deviation from the permit granted under this Law, then he shall recommend to the Committee that the permit granted to the institute or for the experiments be canceled or suspended.
(c) After the Committee has heard the institution's arguments, it may cancel or alter the permit that was granted to the institution, and it also may set any condition it finds proper for the continuation of the experiments.
(d) If the Committee concludes that - under the circumstances of the case - the provisions of this Law were severely violated, then it may order that the experiments be stopped temporarily, even if it has not heard the institution's arguments.
(e) When a decision said in subsection (d) was adopted, then a hearing shall be held in the presence of the institution's representative at the earliest possible time and no later than seven days after the temporary decision was made.
(f) After it has heard the arguments, the Committee may adopt a final decision on the matter.
(g) If the institution's representative did not appear, even though he had been duly summoned, then the Committee may decide the matter in his absence.
(h) Any person injured by a decision of the Committee may contest it before the Council.
(i) The Committee shall report its recommendations under subsection (b) and its decisions to the Council.

**Reporting to the Council**

17. (a) Once a year - and no later than on February 28 - an institution shall give the Council a written report about -
(1) particulars of the experiments with which it dealt in the course of the preceding year;
(2) the name of the veterinarian employed by the institution under section 12(2).
(b) An institution shall give the Council a written report about every special problem or mishap that occurred, as soon as possible after the event.
(c) Notwithstanding the provisions of subsection (a)(1), whoever reports to the Council about experiments under section 13(c) shall report only about the method, principles and extent of the experiments that were carried out.
CHAPTER FOUR: EXPERIMENTS ON ANIMALS IN THE DEFENSE ESTABLISHMENT

Committee on animal experiments in the defense establishment
18. The Minister of Defense shall appoint a Committee for Experiments on Animals in the Defense Establishment (in this Chapter: the Committee), which shall be headed by a veterinarian, and its members shall be a researcher from the sphere of the life sciences, a licensed physician within its meaning in the Physicians Ordinance [New Version] 5737-1976, a legal jurist, the holder of an academic degree in the social sciences or liberal arts, and a public representative who is not a state employee and does not engage in experiments on animals, who shall be appointed after consultation with the Council.

The Committee's powers
19. The tasks and powers of the Council and of the committees that were established under section 13 and 16 on all aspects of experiments on animals in the defense establishment shall be vested in the Committee.

Council Rules
20. The Committee shall, as far as possible, be guided by the Rules prescribed by the Council, but it shall be entitled to digress from the said Rules and from regulations made under this Law if it is convinced - by arguments that shall be recorded - that the digression is essential because of reasons of national security.

 Supervisor of experiments in the defense establishment
21. (a) The comptroller of the defense establishment shall appoint a veterinarian as supervisor of experiments on animals in the defense establishment.
(b) The powers under section 15, as far as they relate to experiments on animals in the defense establishment, are vested in the supervisor appointed under subsection (a) or in a person he appointed for that purpose.

CHAPTER FIVE: PENALTIES AND MISCELLANIOUS PROVISIONS

Maintaining confidentiality
22. Any person who holds any position by virtue of this Law shall reveal any information or the content of any document which reached him by virtue of his position only by permission from the chairman of the Council; this provision shall not prevent disclosure on a demand from the Attorney General for purposes of a criminal trial, or on the demand of a Court.

Penalties
23. If a person committed one of the following, then he shall be liable to one year imprisonment, and in the case of a continuing offense - to an additional fine - at one half of the rate stated in section 61(c) of the Penal Law 5737-1977 - for every day on which the offense continues:

(1) he carried out experiments on animals without a permit, or he digressed from a permit granted to him;
(2) he disclosed information or the content of a document, in violation of section 22.

Transitional provision
24. (a) The Minister shall appoint the first Council within ninety days after this Law was adopted by the Knesset.
(b) The Council shall prescribe Rules within six months after its appointment; if the Council did not prescribe Rules by that date, then the chairman of the Council shall - with the Minister’ consent and with approval by the Knesset Education and Culture Committee - make Rules in its stead.
(c) This Law shall not apply to experiments on animals, which were begun before it went into effect, or to experiments on animals, which were begun before the Council's Rules under section 4 were prescribed.

Implementation and regulations
25. (a) The Minister is charged with the implementation of this Law, and with approval by the Knesset Education and Culture Committee he shall make regulations on anything related to its implementation, including the determination of law procedure in appeals under section 16(h).
(b) The Minister of Agriculture shall, in consultation with the Minister of Health, make regulations on keeping animals and caring for them in animal facilities.

The State
26. For the purposes of this Law, the State shall be treated like every other person.

NOTE: Section 27 amends various other Laws; here its translation is consequently omitted.

Effect
28. This Law - except for sections 24 (a) and (b) and 27 - shall go into effect one year after its adoption.

Publication
29. This Law shall be published in Reshumot within thirty days after its adoption.

SCHEDULE
(Section 8(d))
1. Experiments that cause pain or suffering shall be carried out only under local or general anesthesia or under analgesia; performance of an experiment under general muscle relaxation shall be carried out only together with general anesthesia, unless the use of anesthetics negates the experiment, or when anesthesia will cause greater suffering than is expected of the experiment; in aforesaid cases alternate methods for the minimization of pain and suffering shall be used.

2. The kind of animals used in an experiment shall be limited to those on the lowest philogenetic level, which makes it possible to conduct the experiment without a negative effect on its objectives.

3. If it becomes necessary to kill an animal after an experiment, then it shall be killed, as far as that is possible, before it regains consciousness; animals liable to or exposed to strong pain or prolonged suffering after the experiment shall be killed, even if the objectives of the experiment were not achieved.

PREVENTION OF CRUELTY TO ANIMALS RULES (EXPERIMENTS ON ANIMALS)

5761-2001

By virtue of its powers under section 4(1), (2) and (4) of the Prevention of Cruelty to Animals Law (experiment on animals) 5754-1994 (hereafter: the Law) and with the approval of the Minister of Health, the Council for Experiments on Animals (hereafter: the Council) hereby makes these Rules in order to ascertain minimization of the suffering caused to animals and to prevent unnecessary experiments:

Definitions
1. In these Rules -
"the Committee" - the Committee that issues permits for experiments under sections 13, 14 or 19 of the Law, as the case may be;
"institutional permit" - a permit to conduct experiments issued to an institution, as said in section 12 of the Law;
"NRC Rules" - the booklet "Guide for the Care and Use of Laboratory Animals", published by the National Research Council of the United States (NRC), which is available to the public at the library of the Ministry of Health in Jerusalem, and on the Internet sites of the National Research Council of the United States and the Ministry of Health of the Israel Government, as updated from time to time;
"experiment" - the smallest possible series of acts performed on an animal, which is necessary in order to achieve the objective of the experiment;
"experiment that involves little suffering" - each of the following: (1) biopsy or other small surgical operation without subsequent significant pain;
(2) keeping awake animals in movement restricting cages for up to ten minutes;
(3) behavioral experiments accompanied by minimal stress; (4) installing small permanent implants;
(5) other acts, in the course of which no greater a level of suffering is caused, than in those said in paragraphs (1) to (4).

Institutional permit
2. (a) An application for an institutional permit shall be submitted to the Council, in writing, by the director of the institution; the application shall include the name of the veterinarian employed as said in section 12(2) of the Law, and the set of guidelines required by section 12(1) of the Law shall be attached to it.
(b) The Council shall grant the institution a permit after it approved the set of guidelines that was attached to the application and after it received certification from the Council veterinarian that - on a visit he made to the institution - he found that the conditions under which animals are kept at the institution comply with the requirements of section 4.

Permit for an experiment
3. (a) An application for a permit to conduct an experiment on animals shall be submitted to the Council on the Form in the Schedule.
(b) An aforesaid application for a permit for an experiment shall be submitted by the head researcher, who will be in charge of the experiment for which the permit is requested.
(c) The Committee may demand additional particulars from the applicant, such as it deems necessary in order to decide whether to grant a permit for the experiment.
(d) The Committee may grant a permit for the experiment as proposed in the application, reject the application or approve it with changes, on conditions or with restrictions.
(e) The Committee shall grant a permit for an experiment only if it is convinced that the provisions of the Law and of these Rules will be complied with in the proposed experiment.

Conditions in the animal house
4. Animals in an animal house shall be kept under the conditions specified in the NRC Rules.

Conducting experiments
5. The NRC Rules shall apply to the following acts: (1) the acquisition and transport of animals; (2) the physical restraint of animals; (3) the identification of pain; (4) tranquilization and anesthesia; (5) euthanasia of the animals.

Additional experiment on an animal that already underwent an experiment
6. The Committee shall not grant a permit for an additional experiment on an animal, on which one experiment already was carried out, unless one of the following applies:
   (1) The Committee is convinced that the experiment already carried out involved little suffering; when application is made to permit an additional experiment on an animal on which more than one experiment already was carried out, then the Committee shall consider whether the aggregate of previous experiments does not justify rejecting the application;
   (2) the animal will be anesthetized at the beginning of the additional experiment and will be killed at its conclusion, without regaining consciousness in its course.

Economic considerations
7. The Committee shall not give a permit for an additional experiment on an animal only because using an additional animal would involve a considerable monetary outlay.

Examination of permits in the Council
8. Every year the Council shall hold a special session for an examination of the permits for additional experiments under section 6, which had been issued in the preceding year, in order to weigh whether a change of these Rules is necessary.

Training course for the minimalization of suffering
9. (a) Training in the minimalization of suffering of laboratory animals, which is a condition for authorization by the Institute director of an institute employee as a qualified researcher, shall be by means of a course that will be held at the institute, or in one of the ways said in section 10.
   (b) The Council shall approve a course after it received the curriculum from the institution that conducts it and after it is satisfied that the course can train the researcher in the minimalization of suffering by the laboratory animals, on which he will conduct experiments after he is qualified.
   (c) The person who conducts the course will decide at its conclusion - on the basis of academic criteria - whether each of the participants met the requirements of the course.
   (d) The course will qualify its participants to conduct experiments on the kinds of animals with which the course dealt, and they will have to undergo additional training to become qualified for experiments on other varieties of animals.
   (e) The course shall include at least the following subjects:
       (1) the definition of environmental and microbiological factors that affect the behavior and the biology of laboratory animals, and how they work;
       (2) a survey of the main genetic groupings of laboratory animals and their influence on the research;
       (3) detailed ethical rules on the use of animals - the contribution to scientific research, the fundamental principles of minimizing the number of animals in an
experiment, finding alternatives to experiments with animals, moderation of experimental methods, legal principles, and the ethical system in the country and in the institution;
(4) description of the animal varieties, with which the course deals;
(5) the significance of having different kinds of equipment and means for the enhancement of research;
(6) the biology and behavior of animals and the importance of different anatomical variables;
(7) particulars of materials, dosages and methods for the minimization of suffering, for reduction of pain, for anesthesia and euthanasia;
(8) particulars of methods for injections and for taking blood samples.

(f) The chairman of the Council shall appoint two council members with academic appointments for the constant supervision of standards of study at the course; this provision shall not apply to a course under academic supervision.
Additional training methods

10. (a) Under exceptional circumstances the director of an institution may award qualification to an employee of the institution, if he is convinced that that employee has many years of experience in the conduct of experiments on animals and consequently is skilled in the sphere of minimizing the suffering of laboratory animals.

(b) The director of an institution may award qualification to an employee of the institution, if successfully passed special training by a qualified head researcher who engages in the same research (hereafter: the head researcher), in coordination with the veterinarian employed by that institution under section 12(2) of the Law; such training shall include at least the following:

1. explanations on the correct handling of laboratory animals, the use of alternatives, and minimization of the suffering of animals used in experiments;

2. a practical demonstration of the experiment on animals, in which the employee will engage;

3. the conduct of at least two experiments on animals by the head researcher in the employee’s presence.

The said qualification shall be only for a six month period, after the head researcher signed an undertaking that every experiment on animals carried out by the employee will be under his supervision and on his responsibility, and it cannot be extended or renewed.

(c) The director of the institution may grant an employee qualification, if he is convinced, on the basis of documents, that the training on the minimalization of suffering of laboratory animals, which the employee underwent abroad, is an equivalent of the training in the course said in section 9.

Effect and validity

11. (a) These Rules shall go into effect 30 days after their publication (hereafter: day of effect).

(b) Section 10(b) is in effect during three years after the day of effect.

SCHEDULE

(Section 3(a))

Application for the Conduct of Experiments on Animals

(omitted)