

THE UNIVERSITY OF TENNESSEE-MARTIN
BYLAWS OF
THE INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE
(IACUC)

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I. PREAMBLE

The Institutional Animal Care and Use Committee (IACUC) is responsible for overseeing the use of animals and animal facilities, and for the review of basic science and biomedical research and teaching activities involving animals conducted at, or in association with The University of Tennessee Martin (UTM). Members of the IACUC are appointed by the Chancellor of UTM or designate. The IACUC ensures that animal care and use is in compliance with all federal, state, and local regulations as well as University policy and assurance to the Office for Protection from Research Risks. The basis of compliance is determined by the Federal animal Welfare Act (P.L. 89-544) and amendments, the ILAR Guide for the Care and Use of Laboratory Animals, the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, the Public Health Service (PHS) Policy on the Care and Use of Laboratory Animals (hereafter called the PHS Policy), the Food and Drug Administration (FDA) Good Laboratory Practices, and other applicable regulations. The IACUC is the principal advisory source on humane care and use of animals within the University and, as such, the appropriate body for reviewing and investigating concerns or complaints involving the appropriate care and use of animals. The Committee has the authority to negotiate modifications, suspend or terminate animal use that is not in compliance with these regulations. The Committee shall review the University animal program semiannually and inspect all University animal facilities, and review and approve the care and use of all animals as described in animal use protocols. The Committee shall recommend to the designated institutional official changes and improvements to the University animal program or facilities necessary to maintain a high quality animal use program that is in compliance with all appropriate regulations.

As stated in the PHS Assurance Document, the IACUC shall:

1. Review the institution's program for humane care and use of animals at least once every six (6) months.

2. Inspect all the institution's animal facilities, including satellite facilities at least once every six (6) months.
3. Review concerns involving the care and use of animals at the institution.
4. Make written recommendations to the appropriate Institutional Official regarding any aspect of the institution's animal program, facilities, or personnel training in their respective areas.
5. Review and approve, require modifications, or withhold approval of proposed initial protocol regarding the use of animals in ongoing activities as set forth in the PHS (Sec. IV, B).
6. Review and approve, require modifications, or withhold approval of proposed significant changes regarding the use of animals in ongoing activities as set forth in the PHS (Sec. IV., B).
7. Notify investigators and the institution in writing of its decision to approve or withhold approval of those sections of protocols related to the care and use of animals or of modifications required to secure IACUC approval as set forth in the PHS Policy (Sec. IV., C).

II. IACUC MEMBERSHIP

II.A. Composition

The IACUC must be qualified through the experience, expertise, and diversity of its members to maintain oversight of the use of animals, animal facilities, and to provide review of basic science and biomedical research and teaching animal use conducted within the University. All members shall be appointed by the UT Martin Chancellor (or his/her designee). The Committee will be composed of at least 5 members including a veterinarian trained in laboratory animal care, at least one faculty member actively involved in animal research or teaching, one individual having no official affiliation with the University and non-family member affiliated with the University, and one individual whose primary vocation is nonscientific in nature. An individual who meets the requirements of more than one of the categories detailed in II.A., may fulfill more than one requirement. Excluding the laboratory animal veterinarian(s), no more than three members shall be from the same department.

As deemed necessary, the Committee may also call on consultants, with a special expertise in areas of interest to the Committee.

II. B. Officers and Responsibilities.

1. The office of Chair is appointed by the Institutional Official and must be filled with an individual with previous experience on an IACUC. The Chair shall preside over IACUC meetings, approve minutes, and sign letters of correspondence and other official documents for the IACUC.

2. The Vice Chair shall be appointed by the Institutional Official, and shall serve as Chair in the absence of the IACUC Chair.
3. The University Veterinarian or his/her designee shall serve as a member of the IACUC for an indefinite term. It is the responsibility of the University Veterinarian or his/her designee to provide veterinary review of protocols.
4. Various University officials and specialists may be asked to serve as non-voting ex-officio members of the IACUC.
5. Administrative and clerical support for the IACUC is provided by the Office of Research, Grants, and Contracts. These responsibilities include:
 - a. Recording and distributing minutes of IACUC meetings.
 - b. Preparing correspondence.
 - c. Preparing a roster of the IACUC members.
 - d. Assistance to the Institutional Official in preparing and submitting reports.
 - e. Issuing notices of meetings.
 - f. Preparing agendas for the presiding chair.
 - g. Other related duties.

II. C. Terms and Appointment

All voting members (except the University Veterinarian) shall be appointed by the UT Martin Chancellor to serve staggered two year terms. The term of the University Veterinarian is indefinite. The UT Martin Chancellor may appoint members to fill the unexpired terms of members who have temporarily or permanently left the Committee. The Institutional Official will appoint a committee Chair and Vice Chair who may fill these positions for two years.

II. D. Responsibilities of Members

The IACUC recognizes that University research scientists must conduct their research in a timely and responsible fashion. Therefore, to facilitate research while assuring animal welfare, the committee must conduct its business as efficiently as possible. This can only be accomplished by all Committee members participating fully in committee activities. Committee members should make every effort to attend and actively participate in all regularly scheduled meetings, promptly conduct complete reviews of assigned protocols, and participate in facility and program reviews. Committee members must also recognize the sensitive nature of committee activities and maintain confidentiality.

All IACUC members are expected to:

1. Attend regularly scheduled meetings of the IACUC. Three or more absences from scheduled meetings per year (except under documented extenuating circumstances) are unsatisfactory.
2. Review protocols (Refer to Section IV of this document):
3. Actively participate in animal facility inspections and review and sign facility inspection reports semiannually.
4. Maintain confidentiality about Committee activities.

The efficient operation of the IACUC depends on the full participation of its members. The name of any member who exhibits repeated unsatisfactory performance shall be

submitted to the IACUC Chair. The Chair shall provide necessary documentation to the Chancellor or his/her designee who shall make the final decision regarding dismissal from the Committee.

III. RULES OF ORDER

All meetings shall be governed by The Modern Edition of Robert's Rules of Order, except as otherwise indicated in this document.

III. A. Regularly Scheduled Meetings

The IACUC shall schedule regular monthly meetings and post these dates on the Office of Research, Grants, and Contracts' web site. The meeting may be cancelled if the IACUC has no current business and may be rescheduled in extenuating circumstances. Emergency meetings may be called by the Chair or Vice Chair if required. An agenda listing all proposed activities involving the care and use of animals shall be provided to all IACUC members and IACUC ex-officio members before the scheduled meeting. The names of the reviewers to present the protocols will be provided with the agenda.

III. B. Voting

A motion may only be passed at a convened meeting of a quorum of the IACUC if it receives the affirmative vote of a majority of the quorum present. A quorum means a simple majority of the members of the Committee. A tally of the numbers of members who vote for, against, or abstain from voting shall be recorded in the minutes. Any minority views shall also be recorded in the minutes.

III. C. Conflict of Interest

An IACUC member should not vote on protocols in which he/she is listed as an investigator. The member may provide information to the Committee, if the Committee so desires. The member must be excused prior to voting on the associated protocol. No member may participate in the IACUC review or approval of an activity in which that member has a conflicting interest.

III. D. Sub-committees

The IACUC Chair may appoint sub-committees, as deemed appropriate, to facilitate the business of the Committee. All members of sub-committees shall consist of members in good standing. Sub-committees shall report directly to the IACUC with recommendations or reports. No actions may be taken by the subcommittee without prior approval of a majority of the quorum at a convened IACUC meeting.

IV. PROTOCOL REVIEW PROCEDURES

The Federal Animal Welfare Act (P.L. 89-544) and amendments, the Institute of Laboratory Animal Resources (ILAR) Guide for the Care and Use of Laboratory Animals, the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, and the PHS Policy on the Care and Use of Laboratory Animals shall be used as basis for review.

IV. A. Principal Investigator (PI)

The principal investigator or faculty advisor of a graduate or undergraduate student conducting research or teaching involving live vertebrate animals shall submit a typed and signed protocol for the use of live vertebrate animals. Protocols requiring full review must be received in the Office of Research, Grants, and Contracts 10 working days before the regularly scheduled IACUC meeting. Protocols requiring full review that are received less than ten (10) working days before the scheduled IACUC meeting shall be reviewed the following month.

IV. B. Secretary of the Office of Research, Grants and Contracts

The Secretary of the Office of Research, Grants and Contracts accepts the protocol, stamps the completed protocol form with the date received, assigns an IACUC number, verifies Occupational Health Program participation, and ensures that appropriate signatures are provided. The Secretary attaches a review sheet, signs the review sheet with his/her name indicating that clerical review has been completed, and delivers the protocol to the IACUC Chair by the close of business on the day of receipt unless receipt is 4:30 pm. In this case, the protocol will be delivered to the IACUC Chair by noon the following day (unless the next day is a weekend or the university is closed).

IV. C. IACUC Chair

The IACUC Chair reviews the protocol for clarity and completeness (any required clarifications are discussed with the Committee Veterinarian). The protocol is forwarded to the Committee Veterinarian or his/her designee within one working day of receipt for veterinary review. If the protocol is incomplete, the Chair notifies the principal investigator and immediately returns the protocol with a listing of information or sections needed.

IV. D. Committee Veterinarian

The Committee Veterinarian or her/his designee assigns a category of ethical concern, and performs a veterinary review. The Committee Veterinarian shall make a determination regarding the category of ethical concern and return the protocol and veterinary review recommendation to the Chair.

IV. E. Designated Member Review Protocol

A designated review process can enable IACUCs to review and approve protocols faster than those presented for full committee review. Designated review in no way implies the quality of review is less stringent than a protocol reviewed by the full committee. Written descriptions of research projects that involve the care and use of animals must be made available to all IACUC members, and any member of the IACUC must have the opportunity to obtain, upon request, full committee review of those research projects. If full committee review is not requested, at least one member of the IACUC, designated by the Chair and qualified to conduct the review, shall review those activities, and shall have the authority to approve, require modification in (to secure approval), or request full committee review of any of those activities (PHS Policy IV,C,2; AWAR §2.31,d,2). The

University of Tennessee at Martin has adopted the following criteria to determine the types of protocols qualifying for a designated member review:

Designated member review protocols are those that are defined under Categories A and B, if the protocol follows previously approved IACUC Guidelines. See Appendix A for an explanation of the Categories of Ethical Concern.

The following outlines the procedures and processes to be followed for a designated member review:

1. The RGC Secretary makes copies of the cover page and the non-technical summary and circulates them to all members of the IACUC for review (copies of the complete protocol shall be available to any member who requests it).
2. Any member may request a full committee review.
3. If no member requests a full committee review within 10 days of mailing, the protocol will be assigned by the Chair to a designated reviewer. The designated reviewer will review the protocol and make one of three decisions: (1) approve protocol as written, (2) require the **PI** to modify the protocol to receive approval, or (3) remand the protocol for full committee review. If approved, the Chair sends a letter notifying the **PI**. If not approved the protocol is remanded to the full committee. Protocols are approved for a maximum of three years. After three years, the **PI** will rewrite and resubmit the protocol for review.

IV. F. Full Committee Review:

If full committee review is requested for a Designated Member Review Protocol, or if the protocol is not a designated review, the Chair assigns the protocol to a reviewer(s). The Secretary sends full copies of the protocol along with a Protocol Screening Form to the reviewer. Copies of the cover sheet and the non-technical summary are circulated to all other IACUC members. The designated reviewer(s) shall receive the protocol at least ten (10) working days before the scheduled meeting. If the reviewer(s) are unable to complete the review before the meeting, the reviewer(s) shall notify the Secretary within 48 hours of receipt.

1. Reviewer: After initial review, the reviewer will communicate with the principal investigator and attempt to clarify any questions and resolve any minor problems. If major irresolvable problems exist, the principal investigator may be asked to attend the meeting. If more than one reviewer is assigned, they should discuss the protocol before the IACUC meeting. This communication may raise discrepancies in the protocol or resolve misunderstandings.

2. Approval of protocols assigned for full committee review: Approval of protocols assigned for full committee review may be granted only after review at a convened meeting of a quorum of the IACUC and the approval vote of a simple majority of the quorum present. If approved, the Chair notifies the **PI** in writing. Protocols are approved for a maximum of three years. After three years, the principal investigator will rewrite and resubmit the protocol for review.

3. Withholding approval of protocol assigned for full committee review:

If the IACUC decides to withhold approval, the Chair will notify the **PI** in writing to include a statement of the reasons for its decision. The **PI** will be given an opportunity to respond in person or in writing. The IACUC may reconsider its decision with documentation in committee minutes in light of the information provided by the **PI**.

IV. G. Revisions:

1. Revisions must be submitted to the Office of Research, Grants and Contracts secretary in writing.
2. Revisions consisting of minor changes may be approved by the Chair or designee.
3. Significant changes will require a full or designated member review. Material from both the original and the revised protocol will be distributed to the IACUC members and reviewer(s).

IV. H. Procedures for the Annual Review of Protocols

1. Approved protocols must be reviewed at least annually. Therefore, at least four (4) weeks prior to the anniversary date of an approved protocol, the Secretary shall send to the principal investigator an Annual Review of Protocol for Use of Live Vertebrates Form indicating that the annual review form must be completed and submitted to Office of Research, Grants and Contracts before the first day of the anniversary month.
2. The Secretary shall forward the annual review form to the Chair for action. The annual reviews approved by the Chair on behalf of the committee will be listed on the agenda and minutes of the next monthly meeting.
3. Administrative Review: Annual reviews consisting of minor changes may be approved by the Chair or his/her designee. Significant changes require a revision in writing and will be handled as in section G above.

IV. I. Production Agriculture Protocols (Work Plans)

Production agriculture protocols for animals housed on the University of Tennessee at Martin Teaching Farm are not included in the Animal Welfare Act or by the policies of the Public Health Service; therefore, these protocols/work-plans will be not be reviewed by this IACUC, but will be reviewed by an existing process in the Department of Agriculture and Natural Resources' Agricultural Animal Care and Use Committee. A copy of the Standard Operating Procedures (SOPs) for the (1) Horse Teaching and Research Farm, (2) Sheep and Goat Teaching and Research Farm, and (3) Beef Teaching and Research Farm may be obtained from the Office of Research, Grants, and Contracts. These SOPs are designed to follow the *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching*.

V. PROGRAM AND FACILITIES REVIEW

V. A. Program Review and Site Inspection

The IACUC shall review The University Animal Care and Use Program and all University animal facilities, as defined in the PHS Policy and the Animal Welfare Act, at least once every six months. Site inspections shall be organized and coordinated by the IACUC. A sub-committee of the IACUC may conduct the inspection, but any member wishing to participate may not be excluded and the program review and inspection report must be reviewed and approved by a majority of a quorum of the Committee at a convened meeting of the IACUC and include any minority views. The sub-committee conducting the review and inspection must include at least two members. The sub-committee shall use the ILAR Guide for the Care and Use of Laboratory Animals as a standard for evaluating all laboratory animal facilities. Other guidelines and recommendations will be used as appropriate. The Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching shall be used as a standard for the non-PHS supported research and teaching activities involving production agricultural animals.

V. B. Program Review and Site Inspection Report

The Office of Research, Grants and Contracts shall prepare a report based on the findings of these reviews. The report shall contain a description of the extent of each facility's adherence to the Federal Animal Welfare Regulations and shall distinguish significant deficiencies from minor deficiencies. A significant deficiency is one that, in the judgment of the IACUC and the Institutional Official, regarding the Animal Welfare Regulations, may be a threat to the health or safety of the animals. The IACUC shall include a plan of action with specific dates for correcting any deficiencies. Any failure to adhere to this plan that results in a significant deficiency remaining uncorrected shall be reported within 15 business days through the appropriate Institutional Official to United States Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), Office for Protection from Research Risks (OPRR) and any federal agency funding that activity.

VI. ANNUAL REPORTS

VI. A. USDA, Regulatory Enforcement of Animal Care

Annual reports shall be prepared by the Office of Research, Grants and Contracts according to the provisions of 9CFR 2 (Subpart A, 2.36) and distributed to the IACUC. This report shall be submitted to the Institutional Official as appropriate. The reports are submitted to APHIS on or before December 1.

VI. B. PHS, OPRR

Annual reports shall be prepared by the Office of Research, Grants and Contracts according to the requirements of the PHS Animal Welfare Policy (IV., F.) at least once every 12 months. This report shall be provided to the IACUC following signatures by the Institutional Official. Reports will be submitted to OPRR.

The IACUC, through the Institutional Official, shall provide OPRR with a full explanation of the circumstances and actions regarding:

1. Serious or continuing noncompliance.
2. Serious deviations from the ILAR Guide.
3. Suspension of any PHS funded activity by the IACUC.
4. Minority opinions.

VII. TRAINING

VII. A. Committee Members

Committee members shall receive copies of these bylaws, the Animal Welfare Regulations, the PHS Policy, and other documents, as well as, copies of individual policies developed by the IACUC regarding specific animal use issues. The University shall provide funding for training of IACUC members through the Office of Research, Grants, and Contracts. Each year, two members shall have the opportunity to attend an animal care and use meeting.

VII. B. Scientists, Research Assistants, and Animal Technicians

It is the responsibility of the Office of Research, Grants and Contracts to assure that all scientists, research technicians, animal technicians, and other personnel involved in animal care, treatment and use are qualified to perform their duties. The IACUC shall be responsible for reviewing and approving all teaching and training methods. Subcommittees of the IACUC may be appointed to develop specific training programs.

VII. C. Training and instruction shall be made available in areas of:

1. Humane methods of animal maintenance and experimentation, including:
 - a. The basic needs of each species of animal.
 - b. Proper handling and restraint for the various species of animal used.
 - c. Proper pre-procedural and post-procedural care of animals.
2. Aseptic surgical methods and procedures.
3. The concept, availability, and use of research or testing methods that limit the use of animal or minimize animal distress.
4. Proper use of anesthetics, analgesics, and tranquilizers for any species of animals used.
5. Methods whereby deficiencies in animal care and treatment are reported, including deficiencies in animal care and treatment reported by any employee or student of the University.
6. Regulatory rules and policies governing the care and use of laboratory animals.

VIII. NONCOMPLIANCE

VIII. A. Distribution of Procedures for Reporting Non-Compliance

Everyone involved in animal care and use at the University shall receive a copy of the reporting procedure. These procedures will be posted in appropriate places where animal research and teaching is occurring.

VIII. B. Procedures for Reporting Noncompliance with Laboratory Animal Care and Use Guidelines

1. Concerns or complaints regarding animal usage within UTM should be brought directly to the attention of the people involved whenever possible.
2. If the concern or complaint cannot be handled directly, it may be handled in one of two ways:
 - a. If an emergency exists, the Committee Veterinarian should be contacted immediately. The individual with a concern or complaint should call the Office of Research, Grants and Contracts for the appropriate contact information. The Committee Veterinarian will take any necessary action.
 - b. If the situation is not an emergency, the concern or complaint should be submitted to the IACUC Chair. The Chair will assign an ad hoc committee to investigate the concern or complaint during the next regularly scheduled meeting. The IACUC will determine what action will be taken and the Chair will notify the principal investigator of such action.
3. A written reply to those primarily involved and to the appropriate Institutional Official will follow each written concern or complaint submitted to the IACUC. All reports will be filed in the Office of Research, Grants and contracts for documentation of the incident and the investigation.
4. No facility employee, student, IACUC member or laboratory personnel will be discriminated against, or be subjected to any reprisal for reporting suspected noncompliance.
5. The IACUC may suspend an activity that is previously approved if it determines that the activity is not being conducted in accordance with applicable provisions of the Animal Welfare Act, the Guide, and the Institution's Letter of Assurance with the National Institutes of Health.

VIII. C. Suspension of Activity

If the IACUC suspends an activity due to continuing significant deficiencies in animal care and use, the Institutional Official in consultation with the IACUC shall review the reasons for suspensions, take appropriate corrective action, and report the action with a full explanation to USDA, Regulatory Enforcement of Animal Care, OPRR, and any agency funding that activity.

Any proposal for animal use approved by the IACUC may be subject to further approval by the Institutional Official. However, Institutional Official may not approve activities involving the care and use of animals that have not been approved by the IACUC.

VIII. D. Investigator Appeal

The principal investigator of any activity that has been disapproved/suspended by the IACUC may appeal that action to the IACUC and request another review based on the correction of misinformation or additional information not available at the time of the initial review.

IX. AMENDMENTS

Any member may request a review of any part of these bylaws. The review shall be conducted by an ad hoc sub-committee appointed by the Chair. The IACUC may amend these bylaws by a two-thirds vote at any meeting at which a quorum is present, providing that all IACUC members receive notification of the pending vote 10 working days prior to the meeting.

X. APPENDIX

CLASSIFICATION OF PROTOCOLS (based on anticipated level of pain and distress)

The following categories are based upon the relative level of pain, discomfort or distress that is associated with procedures commonly used in experimental animals. Categories C, D, and E require full committee review and approval. A justification for Category D and E studies must be submitted by the investigator for inclusion with the USDA report (Animal Welfare Act).

CATEGORY A. Procedures do not induce pain, discomfort or distress greater than that produced by routine injections or venipuncture; and do not use anesthetics, analgesics and/or tranquilizers for pain relief.

EXAMPLE/COMMENTS: This category includes simple procedures (injections, cystocentesis of the urinary bladder; blood sampling; ultrasound diagnostics; anesthetics, analgesics, and tranquilizers may be used for immobilization; percutaneous catheterization); physical examinations, live animal evaluations; behavioral testing without significant restraint or noxious stimuli; holding animals for experimental purposes; nutritional studies; breeding studies; routine farm animal management practices.

CATEGORY B. Non-survival anesthetic surgical procedures; tissue collection following euthanasia.

EXAMPLE/COMMENTS: Euthanasia by exsanguinations under anesthesia; any nonsurvival surgical procedure performed under general anesthesia. Tissue collection preceded by approval methods of euthanasia that induces rapid unconsciousness such as anesthetic overdose and decapitation, humane slaughter using USDA approved procedures.

CATEGORY C. Procedures that may involve some minor distress or discomfort (short-lasting pain) not relieved by analgesics and procedures that induce moderate pain, distress or discomfort which will be alleviated with drugs.

EXAMPLE/COMMENTS: Exposure of blood vessels and surgical implantation of chronic catheters; behavioral experiments on conscious animals that involve restraint (less than 4 hours) with or without food/water for short periods; noxious stimuli from which escape is possible; social isolation or crowding; surgical procedures under anesthesia that may result in some post-operative discomfort, but no gross anatomical or functional deficits (skin biopsies, suturing of skin, gonadectomy beyond the age recommended for routine farm management, fistulation, uterine flush, ovariectomy, dehorning of older animals); diagnostic procedures that require anesthesia (bone marrow sampling, CSF taps, arthrocentesis, endoscopy, laparoscopy, electrodiagnostics); induction of infection or infestation which is expected to produce mild or no clinical disease; application of toxic agents that do not produce major functional deficits and will result in mild or no clinical disease or discomfort; the administration of Complete Freund's Adjuvant.

CATEGORY D. Surgical procedures which may induce more than minor post-operative pain or distress, and other procedures that may induce more than minor distress or discomfort which, for scientific reasons, cannot/will not be alleviated by the use of drugs.

EXAMPLE/COMMENTS: Major surgical procedures under anesthesia that result in significant post-operative discomfort or functional deficit invasion of chest or abdomen, orthopedic surgery, removal of organs, surgery involving organs of special sense, implantation, transplantation, surgery that will result in a prolonged recovery. Prolonged periods (more than 4 hours) of physical restraint; noxious stimuli in which escape is not possible; induction of infection or infestation which is expected to cause serious clinical disease; application of toxic agents that may cause major functional deficits and serious clinical disease. Chronic maintenance of a disease/functional deficit where the endpoint is death of the animal (e.g., toxicity testing -lethal dose determination; radiation sickness; tumor inducement; virulence challenge); severe chemical or physical injury experiments where post-procedural analgesics/anesthetics are not provided; experiments involving abnormal environmental conditions, e.g., hypoxic chambers or extreme temperatures or humidity levels; prolonged restrictions of food or water intake.

CATEGORY E. Procedures that involve inflicting severe pain on unanesthetized conscious animals.

EXAMPLE/COMMENTS: Use of muscle relaxants or paralytic drugs (succinylcholine or other curariform drugs used for surgical restraint without use of anesthetics in sufficient dosage to produce loss of consciousness); administration of colchicines to block central transmission of encephalins; inflicting burns or severe trauma on unanesthetized animals; permitting recovery of consciousness after severe trauma has been caused under anesthesia; other procedures involving severe pain or severe deprivation.