ANIMAL FACILITY

STANDARD OPERATING PROCEDURE

SOP 11 : ANESTHESIA AND EUTHANASIA

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ANAESTHESIA AND EUTHANASIA

The investigators should ensure that the procedures, which are considered painful, are conducted under appropriate anesthesia as recommended for each species of animal. It must also be ensured that the anesthesia is given for the full duration of experiment and at no stage the animal is conscious to perceive pain during the procedure. If at any stage during the experiment the investigator feels that he has to abandon the experiment or he has inflicted irreparable injury, the animal should be humanely sacrificed. Neuromuscular blocking agents must not be used without adequate general anesthesia (Annexure - 5). In the event of a decision to sacrifice an animal or termination of an experiment or otherwise an approved method of euthanasia should be adopted (Annexure - 6) and the investigator must ensure that the animal is clinically dead before it is sent for disposal. The data of all the animals that have been euthanized, should be maintained.

Anaesthesia:

Unless contrary to the achievement of the results of study, sedatives, analgesics and anesthetics should be used to control pain or distress under experiment. Anesthetic agents generally affect cardiovascular, respiratory and thermo-regulatory mechanisms in addition to the central nervous system. Before using actual anesthetics the animals are prepared for anesthesia by overnight fasting and using pre-anaesthetics, which block parasympathetic stimulation of the cardio-pulmonary system and reduce salivary secretion. Atropine is most commonly used anti-cholinergic agent. Local or general anesthesia may be used, depending on the type of surgical procedure. Local anesthetics are used to block the nerve supply to a limited area and are used only for minor and rapid procedures. This should be carried out under an expert supervision for regional infiltration of surgical site, nerve blocks and for epidural and spinal anesthesia. A number of general anesthetic agents are used in the form of inhalants. General anesthetics are also used in the form of intravenous or intramuscular injections such as barbiturates. Species characteristics and variation must be kept in mind while using an anesthetic. Side-effects such as excess salivation, convulsions, excitement and disorientation should be suitably prevented and controlled. The animal should remain under veterinary care till it completely recovers from anesthesia and postoperative stress.

Euthanasia:

Euthanasia is resorted to events where an animal is required to be sacrificed or termination of an experiment or otherwise for ethical reasons. The procedure should be carried out quickly and painlessly in an atmosphere free from fear or anxiety. For accepting an euthanasia method as humane it should have an initial depressive action on the central nervous system for immediate insensitivity to pain. The choice of a method will depend on the nature of study, the species of

animal to be killed (Annexure - 6). The method should in all cases meet the following requirements: (a) Death, without causing anxiety, pain or distress with minimum time lag phase. (b) Minimum physiological and psychological disturbances. (c) Compatibility with the purpose of study and minimum emotional effect on the operator. (d) Location should be separate from animal rooms and free from environmental contaminants. Tranquilizers have to be administered to larger species such as monkeys, dogs and cats before an euthanasia procedure.