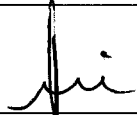




SOP #: 604.01

Title: SOP - Cardio-Pulmonary Resuscitation of Laboratory Animals  
Approvals: \_\_\_\_\_

Attending Veterinarian 

Date: 10/11/12

Assistant Director LAR 

Date: 10/11/12

1. Purpose

1.1 The purpose of this SOP is to provide guidance on how to diagnose, treat and prevent cardiopulmonary arrest in animals that have experienced general anesthesia and/or an invasive procedure under a protocol approved by the Institutional Animal Care and Use Committee.

2. Responsibility

2.1 ACF Veterinary Staff, Principal Investigators, laboratory technicians.

3. Definitions

3.1 Cardiopulmonary arrest: is defined as the abrupt, unexpected cessation of spontaneous and effective ventilation and systemic perfusion (circulation).

3.2 Cardiopulmonary resuscitation (CPR): provides artificial ventilation and circulation until spontaneous circulation and ventilation can be restored.

4. Guidelines

4.1 Normal Vital Signs

4.1.1 Mouse

4.1.1.1 Heart Beats: 325-780 beats/minute

4.1.1.2 Normal Respiratory Rate: 94-163 breaths/minute

4.1.1.3 Normal Temperature: 97.7 – 100.4 °F (36.5-38.0 °C)

#### 4.1.2 Rat

4.1.2.1 Heart Beats: 250-450 beats/minute

4.1.2.2 Normal Respiratory Rate: 70-115 breaths/minute

4.1.2.3 Normal Temperature: 96.6 – 99.5 °F (35.9-37.5 °C)

#### 4.2 Cardiopulmonary arrest

##### 4.2.1 Signs and diagnostic:

4.2.1.1 Signs: Changes in the respiratory rate, depth, or pattern; a weak or irregular pulse; bradycardia; hypotension; unexplained changes in the depth of anesthesia; cyanosis; and hypothermia.

4.2.1.2 Diagnostic: The classical description of arrest includes the following:

4.2.1.2.1 Absence of ventilation and cyanosis ("respiratory arrest");

4.2.1.2.2 Absence of a palpable pulse (pulse will disappear when systolic pressure < 60 mm Hg);

4.2.1.2.3 Absence of heart sounds (heart sounds will disappear when systolic pressure < 50 mm Hg);

4.2.1.2.4 Dilatation of the pupils.

##### 4.3 Resuscitation:

4.3.1 If the animal is apneic and requires assisted ventilation place the animal on dorsal recumbency, close the animal's mouth and place a 3 cc syringe body over its nose, deep enough to create a seal. Start to ventilate the animal rapidly, to produce inflation and deflation of thoracic cavity.

4.3.2 Determine if you can feel the heart beating by placing the thumb and the index finger on both sides of the thorax. If not perform cardiac massage with the fingers by compressing rhythmically the chest to cause at least 25-30% displacement of the chest wall.

4.3.3 Administer with a syringe, ~ 0.2 ml epinephrine / intralingual

4.3.4 Monitor oxygenation and ventilation. During CPR you should see an improvement of mucous membrane color. If animal recovers, provide oxygen by mask until stable.

4.3.5 If cardiac function has not returned after 3 min, discontinue cardiopulmonary resuscitation

5. References

5.1 N/A