

**EVALUATION OF THE METABOLIC RATE OF SMALL ANIMALS**  
**RESPIRATORY CALORIMETRY**

Name: .....

Group: .....

Date: .....

1. Goal of the experiment: .....

2. Mass  $m$  of the animal (in kilograms):

$m \pm \Delta m =$  .....

3. Amount of heat  $Q$  liberated by the animal calculated on the basis of Kleiber's equation:

$$\log_{10}\{Q\} = 5.44 + 0.756\log_{10}\{m\} \pm 0.05 = \dots\dots\dots$$

$Q =$  .....

$\Delta Q =$  .....

$Q \pm \Delta Q =$  .....

4. Power  $P$  of the animal (in watts) according to Kleiber's equation:

$P =$  .....

$\Delta P =$  .....

$P \pm \Delta P =$  .....

5. Calculations of the **safe time** of the experiment (oxygen concentration in the measuring chamber must not fall below 16%):

- a) energy equivalent of oxygen: .....
- b) volume of oxygen consumed by the animal in one second: .....
- c) volume of the measuring chamber: .....
- d) approximate volume of oxygen in the chamber: .....
- e) volume of oxygen that can be consumed by the animal: .....

**The safe time of the experiment: ..... ! - very important**

