

An Inexpensive Metabolism Cage for Small Animals

by

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There are many types of metabolism cages suited for metabolic studies dealing with small animals. The majority are constructed from plastic (1), glass (2), or a combination of plastic, glass, and metal screen (3,4) with the primary function of urine-feces separation. Many of the cages available have several disadvantages: expensive construction, lack of versatility, inadequate space for the animal, and incomplete separation of urine and feces. The apparatus to be described eliminates many of these problems.

Materials and Consturction

Figure 1 shows the components of the metabolism cage to be described. The base and funnel is made by etching a five gallon glass carboy completely around the outside 11 1/2 in. from the bottom, breaking along the etch by lightly tapping, and inverting the top into the bottom. The urine-feces separation device is made from a 50 ml pyrex volumetric flask. The tips of two glass rods are heated until molten and attached to the top and bottom of the flask serving as a holding device while heating the neck until soft, drawing it apart and bending at the desired length forming a hook (100 mm from base of the the neck to top of hook). The rod connected to the bottom of the flask is heated and removed forming a nipple on the bottom (1/4 in.). A 1 x 3/16 in. stainless steel spiral spring is hooked to the separator and to a 9 in., 3 mm O.D. glass rod inside the funnel sideways thus suspending the separator. A 50 ml glass beaker is used as the urine receptacle and a small piece of aluminum foil used to collect the feces. The cage is made of 1/2 x 1/2 in. mesh hardware cloth. The floor and top are 12 x 12 in. with a 1/2 in. 90° bend on each side and a 5 1/2 x 11 in. hinged door in the top. The sides are 9 x 32 1/2 in. arranged in a cylinder with a diameter of 10 1/2 in. and secured to the floor and top using short lengths of wire. The cage is then placed on top of the funnel forming the complete metabolism cage.

References Cited

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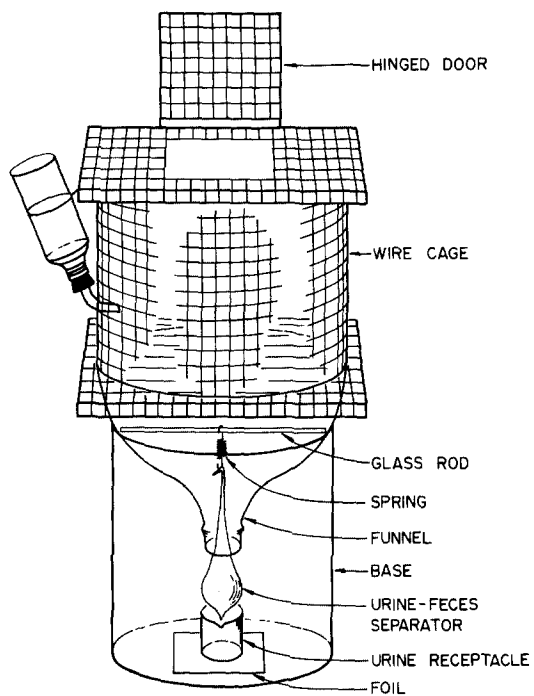


Figure 1. Components of the Metabolism Cage