



自己拘束オペラント実験システム  
 <学習記憶>  
 Dr. Benucci type Self head-restraint platform  
 for mouse behavioral training  
 <learning memory>

This unit is designed that subject mouse moves to restrain the head by himself and performs operant task with voluntary. A head plate is attached to the subject by surgical operation. Handling and habituations to experimental setup are also needed before you put the subject to setup. And limitation of water supply has been given to the subject from the day before experiment. When a door between cage and self head restraint chamber opens, mouse voluntary enters corridor, and moves to head restraint position by induced movements of doors. Head restraint is achieved guide of head plate in guide rail of chamber and electronic latch. When the electronic latch release after training is over, mouse goes back to his home cage induced by movements of doors.

マウスが自ら頭部を拘束する位置へ移動し、オペラント課題を訓練するように仕向けられたシステムです。マウスの頭部には手術により予め頭部固定具を装着しておきます。同時にハンドリング、実験装置への馴化、実験開始前日からの絶水を施します。ケージに設置されたドアが開くと、マウスは自発的に通路に入り、ドアの動きに誘導され自ら頭部を固定される位置へ移動します。頭部への固定は電動ラッチによります。訓練後に電動ラッチが解除されると、ドアの動きに誘導されマウスはホームケージに戻ります。

## Full Automatic

### Components — dual cage —

#### Self head restraint unit

Stage, Chamber, Automatic self head-restraint latch, Steering wheel with electric rotary encoder

#### Water-supply unit

Water bottle, Spout, Tubes with connector, Controller

#### Licking unit

Licking sensor, Controller

#### Automatic door unit

Photo beam sensor

#### Weight scale unit

Weight sensor, Interface

\*When you do not need to weight, this unit is not required

#### Interface

Input signals (Steering wheel, Photo beam, Licking sensor Head plate latch),

Output signals (Doors, Head plate latch catch & release), Control water supply unit, System power supply

#### Manual switch box for remote control

#### Software

#### Corridor unit for dual cage

\*required for dual cage task

#### Interface for Corridor unit

\*required for dual cage task

#### Habituation water supply unit

Water tank, Tube valve, Valve holder, Habituation tube

#### Tower computer with I/O board

Single cage system is also available.

