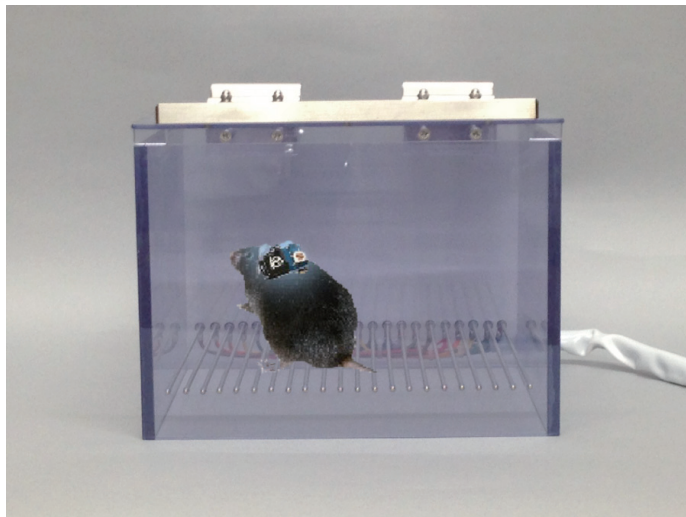


Fear Conditioning test System & Wireless Optogenetics Stimulator “Teleopto”

Behavior test
with
wireless
optogenetics!

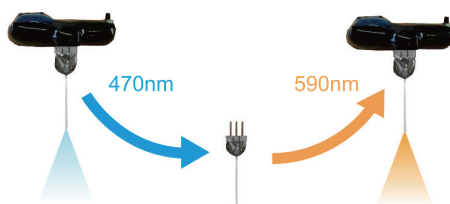
Combined our Fear conditioning test system
&
Teleopto (Bio Research Center Co.,Ltd.)



Teleopto
Wireless Optogenetic Stimulator



When you just change cannula,
you can change the wave length
of opto-stimulus.



The teleopto can activate or inactivate cells by wireless, instead of conditioned stimulus (CS) or unconditioned stimulus (UCS).

Teleopto achieves to combine fully programmable wireless optogenetic to our fear conditioning test system as you like. User friendly setting program, and these program are reproducible. The amount of freezing can be fully automatic measurement at online.



O' HARA & CO., LTD.

★ Please understand that appearance & specification of this product may be changed for improvement without notice.

Fear Conditioning test System & Wireless Optogenetics Stimulator “Teleopto”

TimeFZ

Freezing detection software by image analysis
TimeFZ1 for single animal, TimeFZ4 is for up to 4 animals

The screenshot shows the TimeFZ software interface with several panels:

- Control Panels:** Duration(sec): 60, Rate/frame(sec): 2, Freezing Criterion(pixel): 20, Trace Mode: value(0): 10, Tone Duration(sec): 10, Bin Duration(sec): 60, Freezing Duration-min(sec): 2, Erode: No of erode: 3, Shock Duration(sec): 2, Frame Size - width(cm): 25, Subject Size - min(pixel): 10, Dilate: No of dilate: 3, Light Duration(sec): 10, Frame Size - height(cm): 15, Subject Size - max(pixel): 500.
- Live image:** A window showing a mouse in a chamber with a red bounding box.
- Image:** A window showing the XOR image of the mouse.
- B&W:** A window showing the binarized (Black & White) image of the mouse.
- Erode & Dilate & Particle Filter:** A window showing the noise-reduced image of the mouse.
- Pixel No.:** A display showing the value 0.
- Luminance:** A slider ranging from 0 to 255.
- Particle size(pixel):** A list showing values 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68.

Annotations on the screenshot:

- Live image:** A blue box highlights the live image window.
- Image:** An orange box highlights the XOR image window with the text: "XOR (if the XOR is less than Freezing criterion, software judge the mouse as immobile)".
- B&W:** A purple box highlights the binarized image window with the text: "binarization (Black & White)".
- Erode & Dilate & Particle Filter:** A green box highlights the noise-reduced image window with the text: "Noise reduction (Erode & Dilate & Particle Filter)".



Image is captured from just above the test chamber

Main data

Freeze percent(%)
Distance
Freezing% at before CS
Freezing% at CS

System Configuration

- Software : TimeFZ
- Interface
- Shock generator
- Chamber
- Sound attenuating box (with electro magnetic shield)
- Camera : 902B
- PC, Frame grabber and I/O device
- Teleopto (by Bio Research Center Co.,Ltd.)

Manufacturer

Bio Research Center Co.,Ltd.

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