

In Vivo Deep Brain Imaging with Sutter MOM® and Neurotar Mobile HomeCage™

Sutter's Movable Objective Microscope $^{\textcircled{g}}$ easily accommodates the Neurotar Mobile HomeCage $^{\texttt{TM}}$ and Mobile HomeCage Large. This system provides a real, tangible and familiar environment that the animal can explore and navigate during $in\ vivo$ recordings while deep laser scanning imaging with two-photon excitation.

Optical and electrical recordings performed in live rodents have revolutionized brain research. However, the use of general anesthetics strongly affects the brain function and greatly limits the relevance of *in vivo* experiments.

Early solutions for immobilizing the head of an awake rodent gave rise to break-through research.* With those experiments in mind, Neurotar has designed this platform to be flexible across a range of experimental methods and very easy to setup and use. Fortunately, this system is now commercially available to perform these complex experiments in any lab.

Combined with the Sutter Movable Objective Microscope, the Neurotar Mobile HomeCage enables two-photon imaging studies in live, head-fixed animals without the use of anesthetics. The specimen is held with stable, firm micron-precision fixation under the objective. The Sutter MOM® is the only two photon microscope with enough extension to accommodate the Mobile HomeCage Large.

*Selected key references:

Kislin. M. et al (2014) *JoVE*, PMID: 24998224 Dombeck et al/Tank (2007) *Neuron*, PMID: 17920014 Nimmerjahn et al (2009) *Neuron*, PMID: 19447095 Gentet et al/Petersen (2010) *Neuron*, PMID: 20159454

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