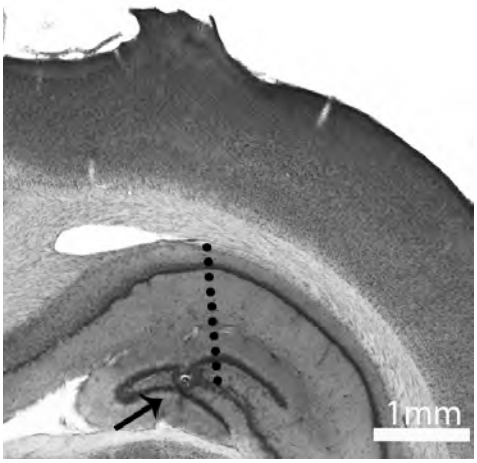

IMAGE 1

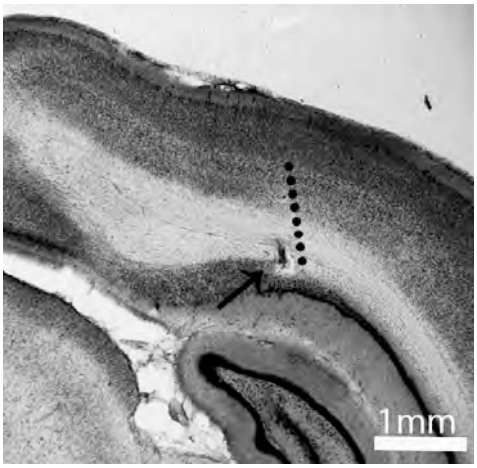

IMAGE 2

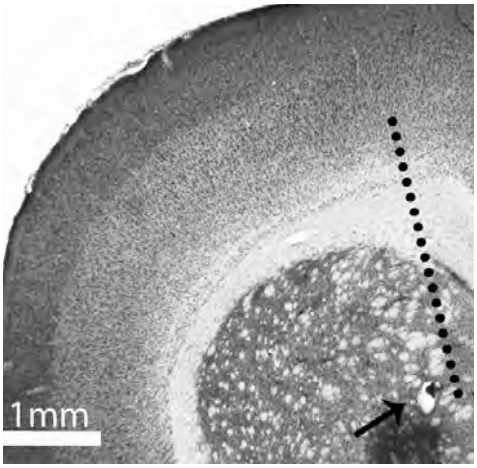

IMAGE 3

Images: Microlesions in Rat brain using a 1 shank, 16 channel probe (images 1 and 2) and a 1 shank, 32 channel probe (image 3).

A 35 µA constant current was passed for 2 seconds in the deepest part of an implant in an anesthetized animal using an Autolab Galvanostat. After 3 hours, the animal was euthanized and perfused. The brain was sliced using a vibrotome in 100 µm sections, and stained with the conventional cresyl violet Nissl technique.

We have empirically determined guidelines for microlesioning techniques to localize individual electrode sites via histology. The following equation normalizes for site area, current, and time to yield an optimal charge density for microlesions:

$$\frac{\mu A \bullet sec}{\mu m^2} = .056\ \mu\ C/\mu m^2$$

Examples:

1. (As in above) If you have a 1250 μm^2 site size and 35 µA current, stimulate for 2 seconds.
2. If you have a 1250 μm^2 site size and a 5 µA current, stimulate for 14 seconds.
3. If you have a 177 μm^2 site size and a 2 second stimulator, deliver 5 µA. Try to keep stimulation time under 15 seconds.

NOTE: These microlesion parameters are guidelines, and may not work in every situation. We recommend lesioning 3-4 individual sites per 16 channel array. As a user, you can help us build a complete database of lesioning techniques and parameters. If you would like to contribute to our database, email your microlesion results (with photographs) to support@neuronexus.com.