ISTITUTO ITALIANO
DI TECNOLOGIA

TITLE

Three-Electrode electroporation device

INVENTORS

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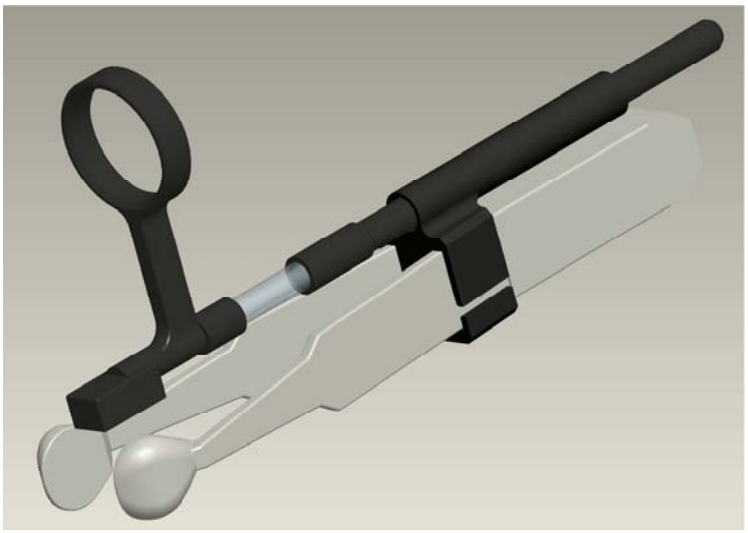
DESCRIPTION

In vivo electroporation makes it possible to render cell membranes temporarily permeable to substances that otherwise would not be able to effectively enter the cell interior. This invention describes a simple and yet very effective redesign of the existing electroporation devices, using three electrodes instead of two. This device presents a new electrode configuration for in vivo electroporation in the nervous system of embryonic mice. The new configuration entails a common bipolar electrode connected to only one polarity and a third new electrode connected to the other polarity.



APPLICATIONS

The addition of the new electrode allows highly reliable and reproducible electroporation of cells at previously unreachable brain locations, like the cortex and hippocampus, allowing in vivo imaging of unexplored brain areas. In particular, it is possible to target the hippocampus, motor cortex, and cerebellum upon a simple change in the relative position of the three electrodes and their polarity orientation allowing to transfect cell at locations that can be imaged in vivo easily.

KEYWORDS

electroporation, in-vivo, imaging

BIBLIOGRAPHIC DATA TO2011A000411

Dispositivo per elettroporazione	
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