NOV 11, 2023

OPEN ACCESS

DOI:
dx.doi.org/10.17504/protocols.io.j8nlkonj6v5r/v1

Protocol Citation: Leonardo A Parra-Rivas 2023. Multi-electrode array (MEA). **protocols.io** https://dx.doi.org/10.17504/protocols.io.j8nlkonj6v5r/v1

Protocol status: Working
We use this protocol and it's working

Created: Nov 02, 2023

Last Modified: Nov 11, 2023

Multi-electrode array (MEA)

Leonardo A Parra-Rivas[1]

[1]University of California, San Diego

Subhojit Roy Lab

Leonardo A Parra-Rivas
University of California, San Diego

ABSTRACT

Multi-electrode array (MEA)

PROTOCOL integer ID:
90325

1 One day before plating, 6-well MEA plates (Axion Biosystems, M384-tMEA-6W) were coated with poly-D-lysine (Millipore Sigma P6407-5MG) in borate buffer

2 ,then washed six times with sterile water and aspirated prior use.

3 150,000 cells in a 15 µl drop were plated on a 6-well MEA plate. Cultures were maintained for 17-21 days at 37 °C in 5% CO2

4 On the day of recording, MEA plates were equilibrated for 10 min on the pre-warmer reader at 37 °C in 5% CO2

5 2 mins of firing activity was recorded at a 12.5 kHz sampling rate and filtered with a bandpass filter from 200 Hz to 2.5 kHz. Each MEA well contained 64 electrodes that detected changes in extracellular field potentials reflecting the spiking activity of neurons.Spike detection was performed with the adaptive threshold crossing algorithm with a threshold of 6× standard deviation using the AxIS software version 2.4 (RRID:SCR_016308) https://www.axionbiosystems.com/products/axis-software. All spike trains were exported from AxIS software.