# <u>Neuronal Network HTS Device</u>

# ~ To Measure Synaptic Spontaneous Release Microcurrents at Multiple Points ~

## **KEY INVENTION**



#### [Current Technology] - Pipette Patch Clamp

- Best method to measure ion channel current
- Difficulty to measure at the multiple points
- Important technology, but difficult to acquire



[Advantages of Invention] a. Synaptic Spontaneous Release Microcurrents at Glutamine Receptors

Buffer Solution (BS) + Glutamic Acid (Glu) +20 1800 1600 (Val) Current -1600 -1800 10 -3800 -4200 10 20 30 (s) b. Neuronal Network formed

Glu B CNQX: NMDA: Glu R N-me

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Time : 11th days of Incubation

- Green: Synapsin
- Blue : Nucleus (DAPI) Magnification: x 100 (Left)
  - x 400 (Right)

A neuronal network is formed with good spatial uniformity.

## APPLICATION expected

- © Cause Elucidation of Intractable Neurological Diseases & Drug Discovery : Alzheimer, Parkinson, SCD, ALS, Stiff-Person Syndrome, etc.
- In Neuroscience Research Tool: For research methods to study statistical phenomena in many neuronal network systems

## **Representative Inventor:**

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### Licensable Patents (Title of Invention - International Publication No.)

- © Planar patch clamp device, electrodes for said device and cell ion channel current measurement method - WO2013094418
- © Planar patch clamping device and method using the planar patch clamping device WO2015030201
- © Formation and use of neuronal network, and neuron seeding device WO2014045618
- $\hfill \heartsuit$  Cell-seeding and -culturing device WO2015111722