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The Use of Neuronal Networks, Cultured on Microelectrode Arrays, to Explore the Pharmacological and Neurotoxicological Effects of Different Compounds

E. Kirazov[1], L. Kirazov[1], C. Naydenov[2], V. Mitev[2]

[1]*Institute of Experimental Morphology, Pathology and Anthropology with Museum, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria*
[2]*Department of Chemistry and Biochemistry, Medical University, Sofia, 1431 Sofia, Bulgaria*

Microelectrode arrays (MEAs) have been in use over the past decade and a half to study multiple aspects of electrically excitable cells. In particular, MEAs have been applied to explore the pharmacological and toxicological effects of numerous compounds on spontaneous activity of neuronal and cardiac cell networks. The MEA system enables simultaneous extracellular recordings from multiple sites in the network in real time, increasing spatial resolution and thereby providing a robust measure of network activity.

Key words: Microelectrode arrays, amyloid-beta peptides, neuronal networks, Alzheimer's disease.