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A Multinetwork, Multiwell Assay Platform for Drug Development and Toxicology Screening

A major temporal and financial burden associated with drug development and toxicology assessment is the lack of physiological assay platforms positioned between the biochemist and the animal or human experiments to provide rapid, quantitative data on neuroactive/neurotoxic responses. Deficient is a platform that uses the complex and sensitive neurophysiological network dynamics (provided by the simultaneous recording of action potentials from hundreds of nerve cells) for determination of pharmacological and toxicological responses. By employing many networks parallel in an automated robotic system, it is possible to develop a highly efficient screening for compounds substantially accelerating research in these areas as well as drastically reducing the number of animals required by current testing and evaluation procedures.

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