Workshop on Comprehensive In Vitro Pro-Arrhythmia Analysis Using Human Pluripotent Stem Cells-Derived Cardiomyocytes and Multielectrode Array System

Cardiotoxicity is one of the major reasons for drug attrition from market which may impose tremendous costs to pharmaceutical companies. Drugs may impose side effects on structure or electrophysiology of cardiac myocytes. Comprehensive in vitro proarrhythmia assay (CiPA) using the hPSC-CM/MEA system has been proposed as a robust, efficient, and sensitive platform for electrophysiological cardiotoxicity screenings. While industry standard assays are based on using immortalized cell lines or animal models, CiPA takes the advantage of cardiomyocytes obtained from cardiogenic differentiation of hPSC, literally representing the most similar physiology to human heart. Therefore, this high throughput physiologically relevant platform for cardiotoxicity may provide an advanced complementary method with great potential for reducing the costs of drug development and cardiotoxicity-related drug attrition.

In this workshop nonclinical evaluation of the potential for delayed ventricular repolarization (QT Interval Prolongation) by human pharmaceuticals will be conducted.

This workshop is suitable for graduates and students of all academic levels in biology, paramedical, and medical fields. A minimum knowledge of drug development, membrane physiology, stem cells, and their differentiation into cardiomyocytes is required.