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Japan's Yokogawa helps to revolutionise Single-Cell Lipidomics

April 29, 2024 | News

Yokogawa's Single Cellome System SS2000 uses confocal imaging technology to help abrogate challenges with single-cell lipidomics



Japanese multinational company Yokogawa Electric Corporation's latest single-cell analysis solution, the Single Cellome System SS2000, has been featured in an article published in the high-profile journal Analytical Chemistry regarding groundbreaking work conducted by researchers at the University of Surrey in the emerging field of single-cell lipidomics.

The SS2000 is a live cell image device equipped with Yokogawa's original dual-microlens spinning disk imaging technology, and enables cutting-edge life science research.

Single-cell lipidomics is an emerging field where the lipid composition of single cells is analysed. These studies help overcome the challenges of bulk lipidomics by offering scientists a means of exploring spatial and temporal differences in addition to intercellular variability. Understanding these differences is key to creating a more complete picture to understand diseases such as cancer.

One challenge facing researchers is the ability to isolate single cells in a way that maintains the natural lipidome of a cell. Current methods of single-cell isolation detach and suspend multiple cells at once and then isolate them through a narrow channel, but this can be particularly stressful to cells and may result in alterations to cellular lipid make up. Yokogawa's Single Cellome System SS2000 uses confocal imaging technology to help abrogate challenges with single-cell lipidomics. It is a dual purpose system that enables live cell imaging and also performs fully automated single-cell and subcellular sampling without going through the suspension process, thereby minimising stress on the cells.

Yokogawa's collaborators at the University of Surrey have shown that Yokogawa's SS2000 is a vast improvement over other single-cell isolation technologies in the context of single-cell lipidomics.