Aigenpulse launches CytoML 5.2: automated flow cytometry with unbiased analysis

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Aigenpulse has rolled out an update to its CytoML Experiment Suite – its automated, end-to-end, machine learning solution specifically aimed at streamlining and automating cytometry analysis at scale and replacing manual gating processes. The latest release of the Suite (v5.2) introduces new unbiased analysis features and has an easy-to-use interface with no need for difficult installation or programme scripting.

Users can perform automated analyses in an unbiased manner for exploratory use cases, including FlowSOM and Phenograph for algorithm-based clustering, and use powerful dimensionality reduction methods such as tSNE and UMAP to visualise connected data.

The batch processing tool enables a range of parameters to be simultaneously explored to assist scientists in finding the best representation of their data. Once interesting clusters have been identified, these can be overlaid with marker expression and many types of meta-data to drive hypothesis testing. With the ability to back-gate events from selected clusters into two-dimensions, the new unbiased analysis features streamline the process of assigning identities to populations from clustering outputs – a traditionally arduous task. To enable comparison and validation of approaches, results can also be compared with semi-automated gating methods.

Satnam Surae, Chief Product Officer at Aigenpulse, commented: “Where researchers need data to support a regulatory use cases, guided/semi-automated analysis is key because it is 100% reproducible. However, there is a depth of rich data that underpins the information provided by flow cytometry, and here, unbiased analysis for exploratory use cases can help uncover new insights by finding novel populations or clustering non-intuitive populations together, for instance.

“Unbiased analysis tools allow complex multi-dimensional data to be simplified, unified, processed and visualised so that it can be more easily explored and compared. This kind of analysis can be very useful

in exploring data without any prior assumptions, as a means to uncover novel insights. It is a complementary technique to semi-automated approaches and is interoperable within the CytoML 5.2 Suite, enabling comparison and validation."

CytoML automates every stage of the flow cytometry data lifecycle, from data acquisition to insight generation. It can help increase throughput of data processing and analytics by as much as 600%, simultaneously increasing the accuracy, reproducibility, and quality of flow cytometry data. It can be implemented in a GxP environment and, as well as automating processing, the platform enables the reuse of processed cytometry data, integrating population counts identified by manual gating (in .csv format) to increase the value of the data and enable cross-project analysis.

CytoML is underpinned by Aigenpulse's state of-the-art data intelligence platform, which is designed to expedite the drug discovery and development process. The Aigenpulse Platform harnesses the latest artificial intelligence and machine learning tools to deliver advanced analytics to support scientific decision making.

For more information, visit: https://www.aigenpulse.com/cytoml-suite/.