

Functional Cell Based High-Throughput Screening

GOAL: Leverage a remote High Throughput Screening (HTS) platform to quickly identify small molecule hits in a proprietary functional cell based assay

Having not run an HTS campaign, our client wanted to screen over one million compounds to identify novel leads using a proprietary functional cell based assay. The client required an investment into the intellectual aspects and the high-value hypothesis generation to advance their drug discovery efforts, but desired to forgo the cost of capital investment in equipment with the requisite maintenance, along with the necessary complex training and retention of specialized in-house staff. This made the Strateos Automated Cloud Laboratory an ideal fit for their needs.

CLIENT CHALLENGES

- ▶ Our client had not run a high-throughput screen to generate leads in years, and therefore lacked in-house HTS expertise, workflows, and processes in place.
- ▶ High up-front costs of running an HTS campaign (equipment, maintenance, and complex training and retention of FTEs) further limited the feasibility of an in-house set-up.
- ▶ Inherent limitations in outsourcing HTS to CROs, such as lack of real-time data, process transparency, and access to metadata lead to historically longer and more expensive projects.

CLIENT RESULTS

>1.2
M

Compounds
Screened
1536 Well Plates

1
Month

Screening
Duration

Real
Time

Screening
Results

Up to
100K

Compound
Throughput
Per Day

THE FULL STORY

Our client was interested in running an HTS campaign post target identification. However, setting up in-house HTS capabilities require significant internal know-how, capital investments, and long timelines. Outsourcing to a CRO also has inherent limitations, such as lack of real time data and ancillary data, limited process transparency, and potential for long turnaround times. The typical HTS workflow includes multiple steps such as assay development, compound selection and plating, primary screening, hit confirmation, and potency determination, all of which can take months to execute.

Strateos' Automated Cloud Laboratory HTS facility is equipped to provide a comprehensive, automated drug discovery screening workflow from assay development, to hit identification, to lead-compound generation. The Automated Cloud Laboratory integrates over 100 instruments, robotics and control software to enable automation and virtual access from anywhere, allowing scientists to

quickly manage and control the design, synthesis, and testing of compounds in a reproducible manner, without the need for manual involvement. This allowed the client to focus on more critical workflows, such as experimental design, development of new hypotheses, and data analyses.

Strateos' Automated Cloud Laboratory enabled our client to screen >1.2M compounds in a one month duration, with a maximum throughput of 100,000 compounds a day. Our client had experiment visibility in real time and access to the data they needed to make decisions. In addition to primary data, ancillary data such as sample trace history, instrumentation information and experimental metadata (including calibrations and qualifications), and metadata captured through embedded sensors in the facility are available. With the Strateos Automated Cloud Laboratory, our client was able to perform an HTS campaign in the cloud without the need to build the required infrastructure themselves.

Strateos' Automated Cloud Laboratory HTS facility is equipped to provide a comprehensive, automated drug discovery screening workflow from assay development, to hit identification, to lead-compound generation. The Automated Cloud Laboratory helps scientists more efficiently and reproducibly design, run, and analyze experiments to achieve new and faster scientific discoveries.