Strateos™ PLATFORM

High-Throughput Screening (HTS) Overview of Services

Strateos is a pioneer in the development of remote access laboratories and lab control software for life science discovery. The following document contains detailed information regarding our HTS products and services.

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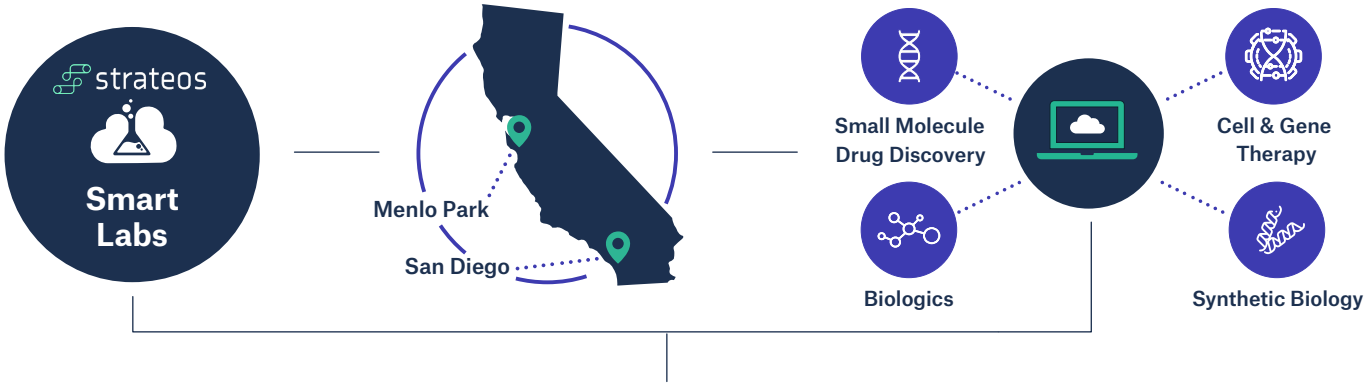
1 | Introduction

Summary of Strateos Platform and Key Capabilities

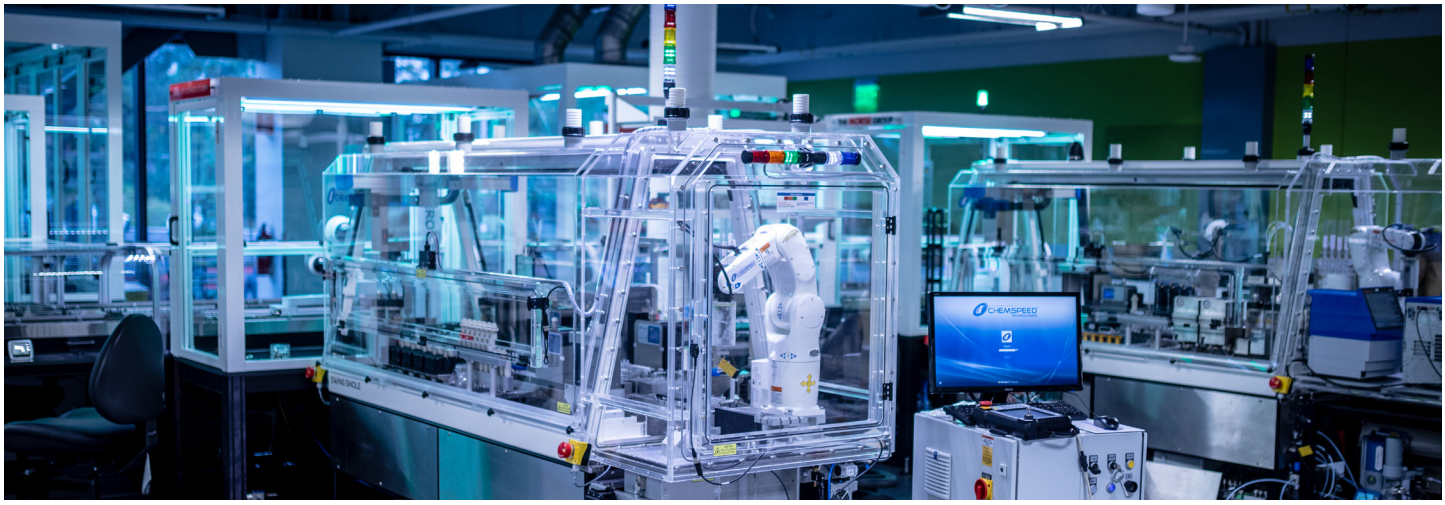
The small molecule drug discovery workflow can be long, complex, and challenging. High throughput screening (HTS) workflows are leveraged for drug discovery campaigns where barriers to in-house execution include significant capital investments, and specialized expertise. Outsourcing to a CRO has been the alternative to investing in HTS infrastructure in-house for many researchers. Strateos offers solutions to enhance the traditional CRO through automation and robotics, enabling scientific organizations to discover and characterize novel drug candidates with greater speed and accuracy.

Small Molecule Drug Discovery and HTS is a key product in our portfolio of life sciences solutions



Strateos' smart labs are located in San Diego and Menlo Park, California. The labs collectively span 14K sq. ft. with >200 instruments and 25 Automation Modules tailored to application needs in the areas of small molecule drug discovery.

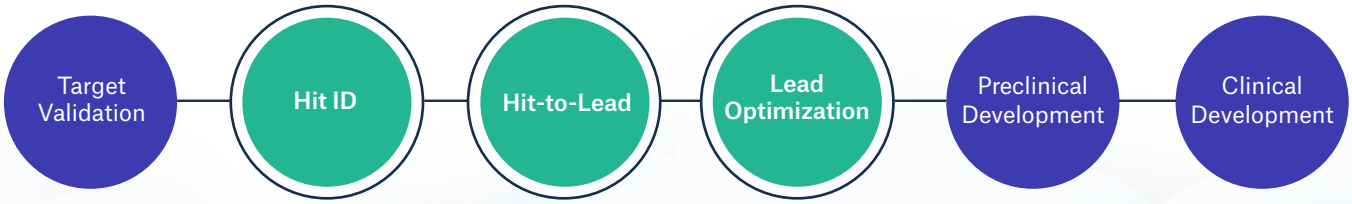
Strateos physically and virtually integrates drug discovery, creating a state-of-the-art automated platform



Medium throughput and high throughput screening (MTS/HTS) of small molecules are offered in a reproducible and agile manner with integration of over 200 instruments through 25 automation modules powered by robotics and software, allowing for a multitude of screening and profiling assays using 384- and 1536-well plates to support every stage of the HTS drug discovery continuum.

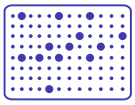
Strateos Platform Value Propositions

- Idea to data becomes agile, fast, and purely operating expense
- Access to robotic scale and novel instrumentation
- Programmatic and closed loop control of the lab
- Massive reduction in fixed capital assets, much more flexibility
- Facilitates collaboration
- Improved reproducibility
- Faster cycle times



Our integrated small molecule discovery workflows for hit ID, hit-to-lead, and lead optimization studies combined with unparalleled scope of capabilities in robotics and automation allow us to deliver quality hits that progress to lead candidates.

Small Molecule Drug Discovery - HTS Workflows and Services

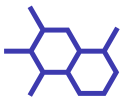


Assay Onboarding & Development

- Bring your assay or save months in development time and use our biochemical, phenotypic and cellular assays for off-the-shelf primary screening, hit confirmation, selectivity, and orthogonal testing

Miniaturization & Automation

- Miniaturize assays for reduced costs, quicker screening times, and leverage our automated laboratory for rapid exploration of large compound libraries



Hit Identification

- Bring your own compound library or use one of our libraries in a platform that combines a comprehensive range of HTS screening technologies including fluorescence intensity, TR-FRET, luminescence, BRET, absorbance, fluorescence polarization, AlphaScreen®, AlphaLISA®, qPCR, mass spectrometry assays and more
- Screen up to 100,000 compounds per day and rapidly identify active compounds

Hit Triaging and Characterization

- Characterize hits for desired biological activity and drug-like properties through the generation of near real-time datasets or collaboratively with our in-house expertise

Hit-to-Lead and Lead Optimization

- Select the most promising hits for lead identification and leverage automated chemical synthesis workflows for faster experimental screening cycles, decreased duration and hands-on-time, reducing the overall drug discovery timeline leading to promising preclinical candidates

Representative Hit Identification Workflow

CUSTOMER ONBOARDING
Custom Assay Development or Assay Transfer, or Off the Shelf Assay

▼

INTAKE AND ASSAY VALIDATION
Assay Feasibility, Miniaturization and Optimization

▼

HTS CAMPAIGN
Single Point Screen

▼

RETESTING AND CONFIRMATION
Retesting and Orthogonal Assays

▼

CHARACTERIZATION
Selectivity, and Secondary Assays

▼

HITS
DRC in Assays, IC50, EC50, 8pt dilution n=2

▼

CONFIRMED HITS
Hit List

Example of Client Onboarding, Execution and Key Milestones

On-boarding

- Feasibility assessment
- Quote acceptance
- SoW finalized
- Approval to transfer assay

Assay Development

- Initiate assay development/ biovalidation phase
- Assay development
- Control validation

- Plate optimization complete
- Autoprotocol code complete
- Pilot screen conducted
- Data analysis & client review meeting
- Approval to initiate primary screen

Primary Screening

- Conduct primary screen
- Perform screen QC
- Data analysis and screening metrics

- Primary screen report generation
- Client review meeting
- Approval to initiate hitpicking

Hit Confirmation

- Receipt of hit pick plates
- Perform single point confirmation screening

- Complete potency screening
- EC50 data analysis and client review meeting
- Approval to reorder stock compounds

Potency Determination:

- Receive compounds
- Complete additional follow-on DRC screening

- Final report generation
- Project finalization approval:

2 | Assays and Readouts

Summary of Assays and Readouts

- Cell-based, phenotypic and biochemical assay development and execution
- 384- and 1536-well plate compatibility
- Homogeneous and heterogeneous assay capabilities
- Luminescence, fluorescence, and TR-FRET readouts
- Threshold of one hundred 1536-well plates per day (equivalent to approximately 140K compounds per day) for simple cell-based and biochemical screens

Hit Finding Approaches

Phenotypic	Biochemical	GPCR	Ubiquintation
PPI	Protease	Transporter	Phosphodieterase
Ion Channel	Enzymatic	Nuclear Receptor	**And Many More**

Screening and Profiling Capabilities

Screening & Profiling Assays

- Compound screening ADP-Glo
- Compound screening UDP-Glo
- Compound screening Alpha
- Compound screening Lance
- Compound screening TR-FRET
- Compound screening fluorescence
- Quenching
- Protease assays
- Dual-Glo luciferase
- Luciferase reporter assay
- Enzymatic assays
- Non-radioactive binding assays
- Immunoassays
- Thermal shift assay
- Protein-protein interaction assays

Cell Based Assays

- CellTiter Glow
- Measurement of intracellular [Ca++]
- Intracellular second messengers (cAMP, IP1)
- Cell proliferation, Cytotoxicity
- Reporter assays
- Protein expression/secretion
- Intracellular protein phosphorylation
- Biomarker detection (MSD, qPCR, NGS)
- Expression analysis (NGS, qPCR)
- Flow cytometry (proliferation, cell cycle, viability, apoptosis, surface markers, etc.)

ADME

- Kinetic solubility

Label-free (Mass Spec)

- Rapid fire (HDAC, etc.)

Kinase Assays

- Kinase panels (40)
- HTRF KinEASE-STK
- HTRF KinEASE-TK

3 | San Diego Smart Lab

Automation Modules and Capacity Summary

Testing Module	Capability	Format	Throughput
TST-1	Biochemical Assays, SAR, MTS	96/384	50 plates/day
TST-2	Setup plates for TST6	96/384	20 plates/day
TST-3	Biochemical and cell-based assays, SAR, MTS, HTS	96/384/1536	70 plates/day
TST-4	Biochemical and cell-based assays, SAR, limited MTS	96/384	20 plates/day
TST-5	Biochemical and cell-based assays, SAR, MTS, HTS	96/384/1536	100 plates/day
TST-6	Label-free, affinity selection mass spectrometry(ASMS), RapidFire	96/384	20 plates/day

San Diego smart lab enables seamless end-to-end laboratory workflows

The custom-engineered MagneMotion track based layout combined with Strateos' scheduling/execution software system integrates and automates the drug discovery process, contextualizing data with the following features:

- Robot transfers to bring samples from track to modules
- Automated high density consumable storage module
- Input / Output module to label and accept sample containers
- Under track utility infrastructure provides power, water, air, exhaust, and various gases to each module
- Video surveillance system throughout the lab and within the track for monitoring of samples in process
- Solvent delivery system supplies solvents to the required modules from a central distribution room in bulk containers

Capabilities by HTS Automation Module

TST-1 | Biochemical Assay Module

- **Format: 96 and 384 well**
- **Throughput: 50 plates/day**
- **Automated Equipment**
  - Formulatrix TEMPEST and BioTek MultiFlo dispensers
  - BMG PHERAstar® FSX multimode plate reader
  - Labcyte Echo® 655T acoustic dispenser
  - Thermo Multidrop Combi dispenser
  - BioNex HiG™ centrifuge
  - KBiosystems Wasp sealer and Brooks XPeel®

TST-2 | Analytical Testing Module

- **Plate configuration and assay setup for TST-6**
- **Set up for RapidFire assays**
- **Set up for Tier 1 ADME assays**
  - Kinetic solubility
  - LogD
- **Sample preparation for affinity selection mass spectrometry (ASMS)**

TST-3 | Biochemical & Cell Based Assay Module

- **Format: 96, 384 and 1536 well**
- **Throughput: 70 plates/day**
- **Automated Equipment**
  - Formulatrix TEMPEST and BioTek MultiFlo dispensers
  - BMG PHERAstar® FSX multimode plate reader
  - Labcyte Echo® 655T acoustic dispenser
  - BioNex HiG™ centrifuge
  - KBiosystems Wasp sealer and Brooks XPeel®
  - LiCONiC automated incubators for 37°C and ambient incubation
  - HRB Lid Valets
  - Hamilton NIMBUS384 pipetter
  - BSL2 compliant

Capabilities by HTS Automation Module contd.

TST-4 | Biochemical & Cell Based Assay Module

- **Format: 96 and 384 well**
- **Throughput: 20 plates/day**
- **Built for prolonged kinetic assays**
- **Automated Equipment**
  - Tissue culture and media changing
  - LiCONiC automated incubator for 37°C
  - Hamilton STAR
  - BioTek Neo2 plate reader
  - BSL2 compliant
  - BioTek 405 dispenser/washer

TST-5 | Biochemical & Cell Based Assay Module

- **Format: 96, 384 and 1536 well**
- **Throughput: 100 plates/day**
- **Automated Equipment**
  - GNF Washer Dispenser II (qty 2)
  - Weigh station
  - Formulatrix TEMPEST and BioTek MultiFlo dispensers
  - BMG PHERAstar® FSX multimode plate reader
  - Labcyte Echo® 655T acoustic dispenser
  - BioNex HiG™ centrifuge
  - KBiosystems Wasp sealer and Brooks XPeel®
  - Cytomat™ automated incubators for 37°C and ambient incubation
  - HRB Lid Valets
  - BSL2 compliant

TST-6 | High Throughput Label-Free Assay Module

- **Format: 96 and 384 well**
- **Throughput: 20 plates/day**
- **Assay Types**
  - ADME
  - Label-free enzymatic assays
  - Affinity Screening by Mass Spec (ASMS)
- **Automated Equipment**
  - Agilent QQQ + RapidFire
  - Thermo Q-Exactive™

4 | Menlo Park Smart Lab

The Menlo Park facility is a deeply integrated technology stack of biology, robotics, automation and software that flexibly supports multiple biochemical and cell based assay types.

This allows for the ability to monitor the lab and instrument environment in real time as well as collect metadata to allow for experimental optimization and troubleshooting, ensuring the quality of experimental design and execution

Capabilities by HTS Automation Module

WC4 | Biochemical & Cell Based Assay Module

- **Automated Equipment**
  - BioNex HiG™ 4 Centrifuge
  - Tecan Infinite® M200 pro plate reader
  - Agilent Bravo multi-channel liquid handler
  - Tecan Cavro® ADP single-channel liquid handler
  - Bio-Rad CFX96 thermocycler
  - Bio-Rad CFX384 thermocycler
  - Thermo Fisher ALPS 3000™ Plate Sealer
  - Tiso* incubators 37°C (qty 2)
  - Tiso* incubator 4°C

WC5 | Biochemical & Cell Based Assay Module

- **Automated Equipment**
  - Agilent Bravo multi-channel liquid handler
  - BioNex HiG™ 4 centrifuge
  - Tecan Infinite® M200 pro plate reader
  - Tecan Cavro® ADP Single channel liquid handler
  - Bio-Rad CFX96 thermocycler
  - Bio-Rad CFX384 thermocycler
  - Thermo ALPS 3000™ plate sealer
  - Tiso* incubator 37°C
  - Tiso* incubator 4°C

*Proprietary to Strateos

Capabilities by HTS Automation Module contd.

WC6 | Biochemical & Cell Based Assay Module

- **Automated Equipment**
  - BlueCatBio Blue®Washer
  - Agilent Bravo multi-channel liquid handler
  - Tecan Infinite® M200Pro
  - Tecan Cavro® ADP single channel liquid handler
  - Bio-Rad CFX96 thermocycler
  - Bio-Rad CFX384 thermocycler
  - Thermo ALPS3000™ plate sealer
  - INHECO Thermoshake
  - Tiso* incubator 4°C
  - Tiso* incubator 37°C
  - Agilent Bravo multichannel liquid handler

WC7 | Biochemical & Cell Based Assay Module

- **Automated Equipment**
  - Perkin Elmer EnVision® plate reader
  - BioNex HiG™ 4 centrifuge
  - Tecan Infinite® M200 Pro plate reader
  - Thermo Fisher Multidrop Combi
  - Precise Automation PF400
  - Formulatrix® TEMPEST® Liquid Handler
  - Brooks XPeel®
  - Labcyte Echo® 525