European Lead Factory

High Throughput Screening in the European Lead Factory

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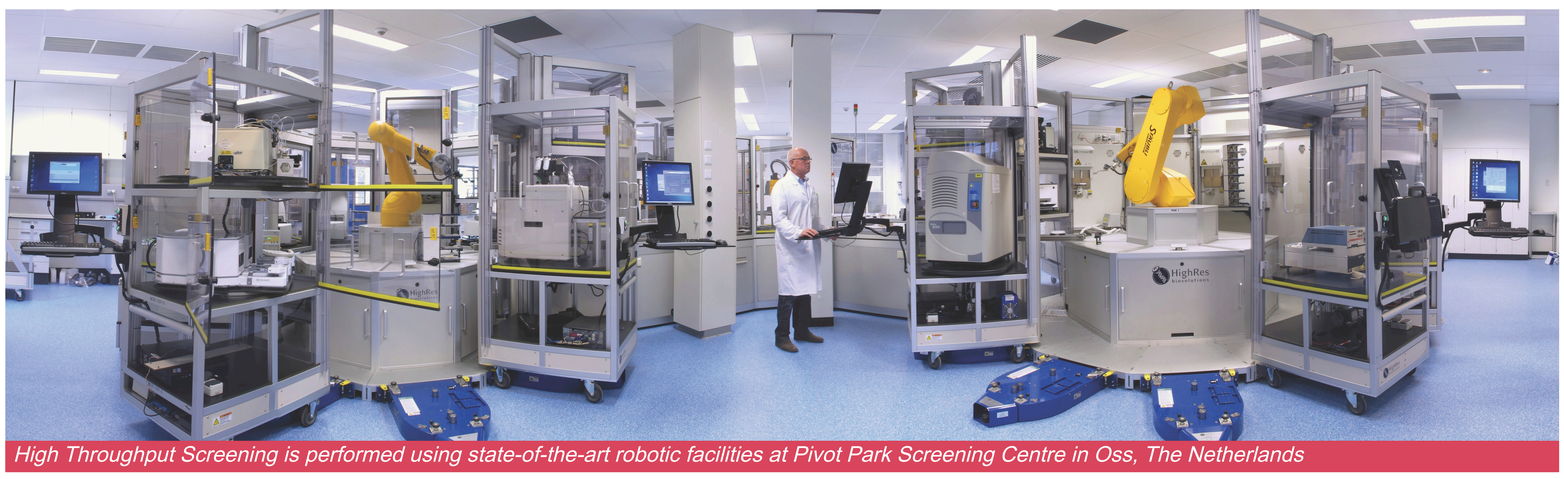
European Lead Factory

The European Lead Factory was established to promote the discovery of novel small molecule candidates, suitable for subsequent optimization either to drug lead candidates or to high-quality pharmacological tools for the experimental validation of targets. European academia and SMEs are invited to submit proposals for innovative biological targets to the European Lead Factory. This way the European Lead Factory will help private and public collaborators to exploit compounds, and to evaluate which are most active against novel targets.

For each approved target, the output of the European Lead Factory is a Qualified Hit List (QHL) which contains structures and data of active compounds.

The European Lead Factory provides access to an exceptional collection of 300,000 optimised industrial research compounds that have been contributed by seven pharmaceutical companies. In addition, an all-new compound collection of 200,000 drug-like molecules will also be built over time, creating a Joint European Compound Collection of up to 500,000 compounds. Screening of compounds to assess their activity is also funded and performed by the EU Lead Factory. The high throughput screening campaigns for the EU Lead Factory are all performed at the Pivot Park Screening Centre (PPSC) as described below. The Project started Jan 1st 2013 with assay recruitment, building the compound library and testing facilities. The first HTS campaign was already performed August 2013.

Flow of projects in the EU Lead Factory. As of July 2014, 65 proposals have been received from academia and SMEs throughout Europe. 58 of these proposals have been reviewed and 26 have been approved and entered the European Lead Factory. The Pivot Park Screening Centre (PPSC) has completed screening of 13 programs, the remaining 13 proposals are in various phases of assay development and are expected to be screened in the next few months. Statistics on these programs that are at PPSC are shown below.

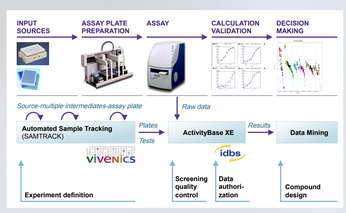


High Throughput Screening is performed using state-of-the-art robotic facilities at Pivot Park Screening Centre in Oss, The Netherlands

pivot park | screening centre

Operational excellence in HTS

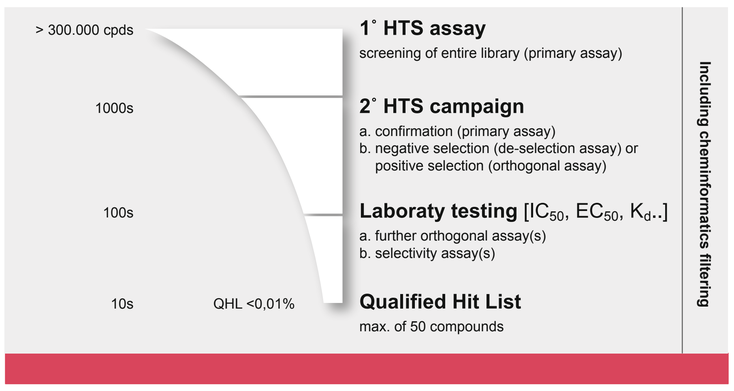
- Proven, efficient procedures to transfer assays & information from European clients to the screening centre.
- Robustness set to determine assay quality on the robot.
- Industrial workflow to maintain the quality of the compound solutions.
- Sophisticated scheduling algorithms to ensure a smooth and high quality screening process.
- Fully automated data tracking in the lab, real-time quality control and visualisation tools.
- Systematic error correction using statistical algorithms.

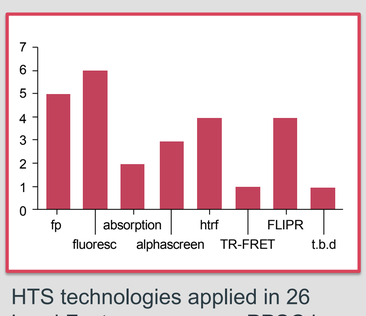


PPSC contribution to the European Lead Factory

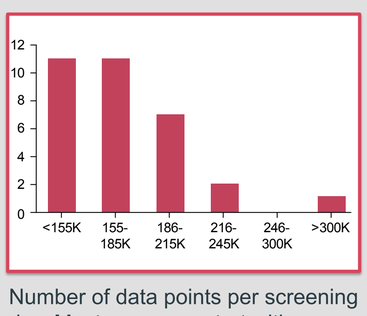
- Development of biochemical and cellular assays
- Large scale cell culturing for HTS
- Several technologies available: E.g. Fluorescence polarization, Colorimetric, Luciferase, Beta-lactamase, FRET, TR-FRET, HTRF, IMAP, Alpha-screen, FLIPR
- Active confirmation
- IC-50 determination

Your Target

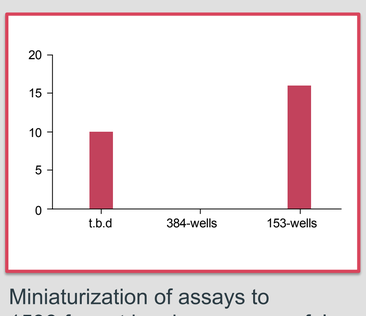




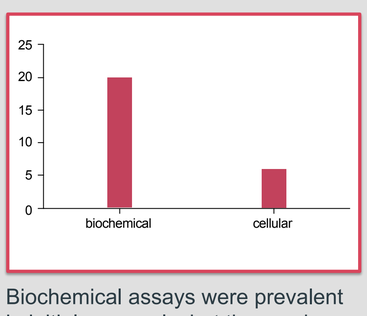
HTS technologies applied in 26 Lead Factory programs: PPSC has a broad range of experience.



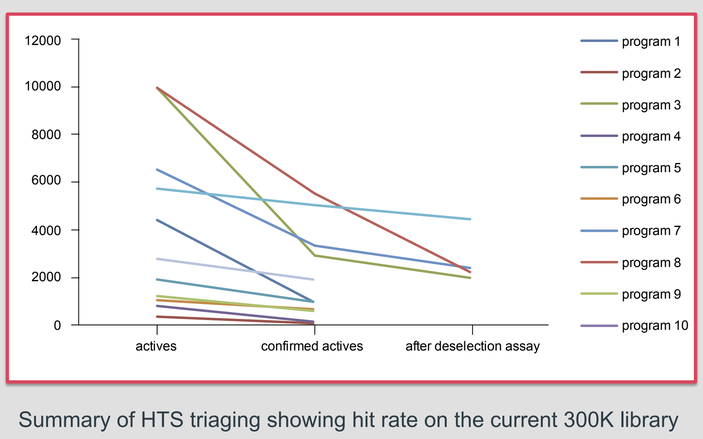
Number of data points per screening day. Most programs start with a small batch of < 50 plates. Batches of 110-160 plates are routinely screened per day creating up to 250.000 data points per day.



Miniaturization of assays to 1536-format has been successful for all 16 programs received so far.



Biochemical assays were prevalent in initial proposals, but the number of cellular assays is now increasing.



Summary of HTS triaging showing hit rate on the current 300K library

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