The RRC High-Throughput Screening Facility

Molecular Biology Research Building
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http://www.rrc.uic.edu/hts
The RRC High-Throughput Screening Facility

<table>
<thead>
<tr>
<th>Robotic workstations:</th>
<th>Microplate readers:</th>
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<tbody>
<tr>
<td>Tecan Freedom EVO 200: 96-channel dispensing + 8-channel liquid handling arm. Customizable deck.</td>
<td>Tecan Infinite F200 Pro Perkin Elmer Envision (with Alpha Screen module)</td>
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<tr>
<td>Perkin Elmer Janus: enclosed in biosafety cabinet. 384/96-channel dispensing.</td>
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<td>siRNA library:</td>
<td><strong>plate washer:</strong></td>
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<tr>
<td>Ambion Silencer® Select Human Druggable Genome siRNA Library V4</td>
<td>Tecan Hydrospeed for 96- and 384-well plates</td>
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Commercial compound collections (>200,000 compounds):

**Diverse, drug-like sets:**
Chembridge DiverSet, NovaCORE, Express Pick collections (165,000 compounds)
Maybridge HitFinder (14,400 compounds)

**FDA-approved drugs:**
Prestwick Library (1,200 compounds)
Chembridge CNS set (10,000 compounds with increased probability of BBB permeability)

**Fragment library:** ~300 (Zenobia) and 2,000 from ChemDiv

**Targeted libraries:**
Enzo Biochem Kinase Inhibitor library
Enzo Biochem Nuclear Receptor Ligand library

**UIC chemistry library:** 1,000+ curated, synthetic samples from Chemistry and Medicinal Chemistry Depts, offer more complex and unique chemistries
Natural products libraries

*Murphy lab & Orjala labs (>4,000 samples)*

- **>350 aquatic actinomycete strains;** 1,440 metabolite fractions, global collection locations
- **>3000 metabolite fractions from 650 strains of cyanobacteria** collected within the US
- All fractions contain approximately 10 compounds
- Structurally diverse, cover a large chemical space
- Represent new chemical scaffolds not typically encountered in synthetic small molecule screening collections
Biochemical & cell-based assays

expertise in biochemical assays
• kinase, protease, various viral and bacterial targets, enzyme kinetics and mechanism
• flexible deck layout—screen up to 10,000 compounds in duplicate in a working day

Absorbance
Fluorescence intensity
Fluorescence polarization
FRET, TR-FRET, HTRF
AlphaScreen
Luminescence

Equipped to run cell-based assays with a uniform readout
• Mammalian, yeast, and bacterial cells
• Assays such as viability and reporter gene
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**pre-screen:**
- assay development
- assay optimization

**high-throughput screening (primary assay)**
- compound libraries
- robotic workstations
- multimode detectors
- data collection

**post-screen**
- data analysis
- cherry pick hit compounds
- confirmatory assays (dose response curves)
- counter-screening & secondary assays