

Webinar on:

Calls for new project support from the chemical  
biology and genome engineering platform and drug  
discovery & development platform @ SciLifeLab

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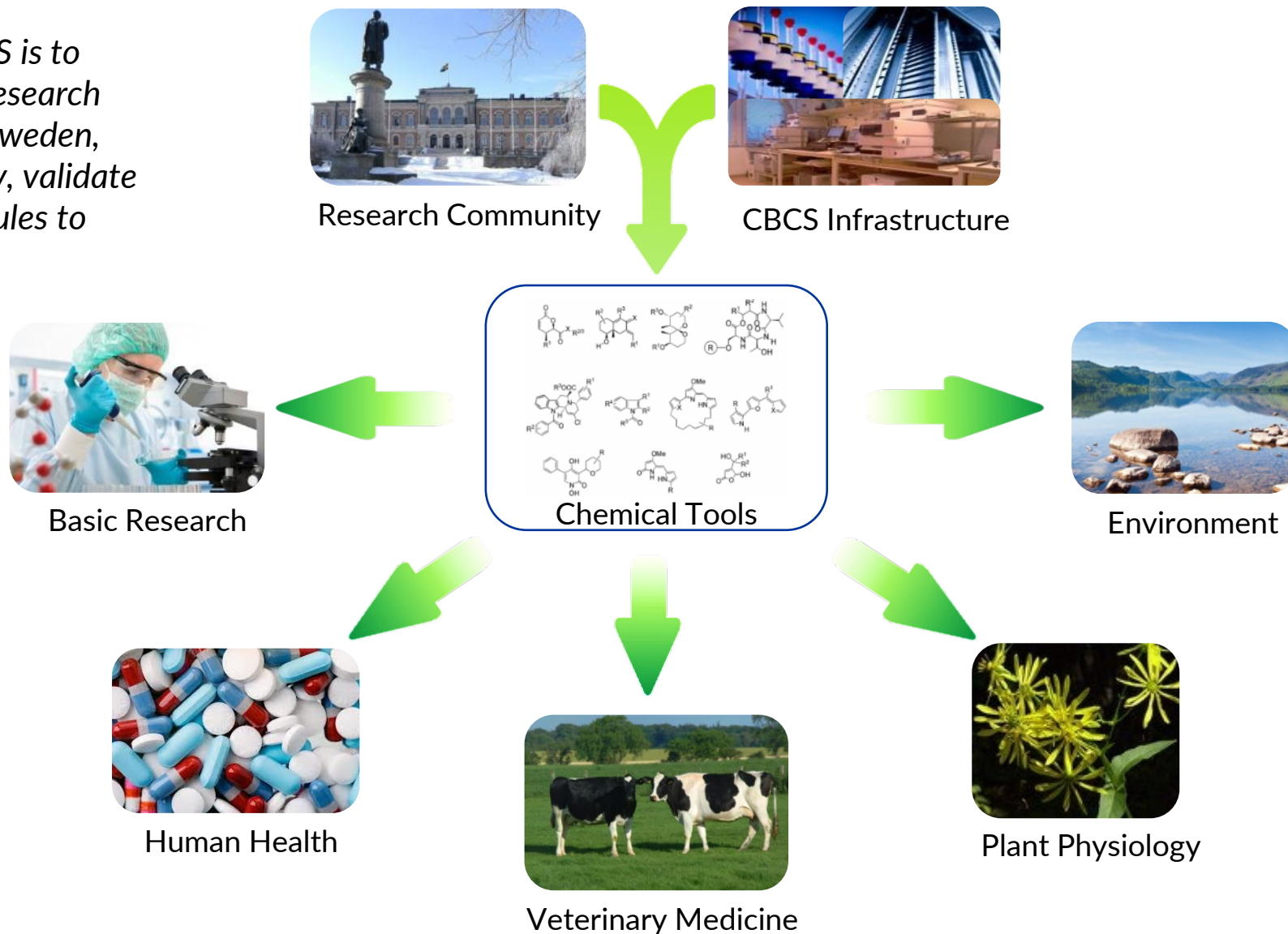
Per Arvidsson DDDp

Bernhard Schmierer CFG

# Chemical Biology Consortium Sweden (CBCS) Mission



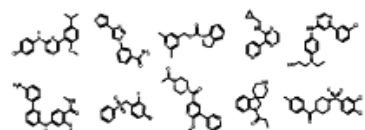
*"The mission of CBCS is to provide services to research groups throughout Sweden, and together identify, validate and use small molecules to explore biology."*



# CBCS Research Services



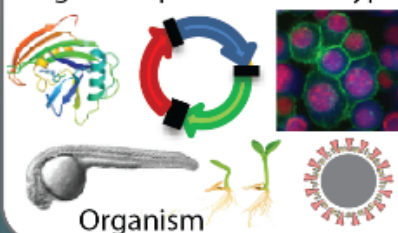
## High-quality chemical libraries



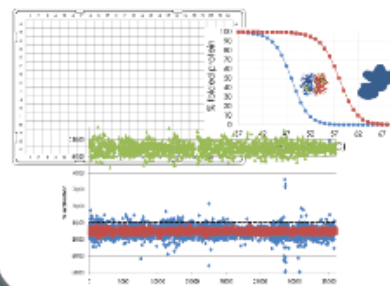
~ 350,000 compounds,  
chemically diverse to  
chemogenomics libraries

## Industry-standard Assay development

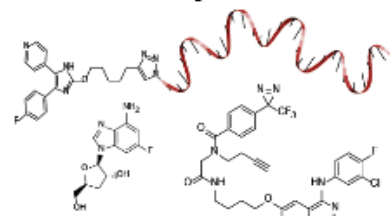
Target Reporter Phenotypic



## Small molecule screening



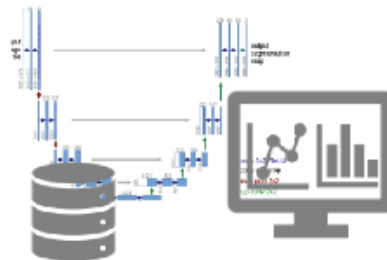
## Enabling chemistry & quality assurance of hit compounds



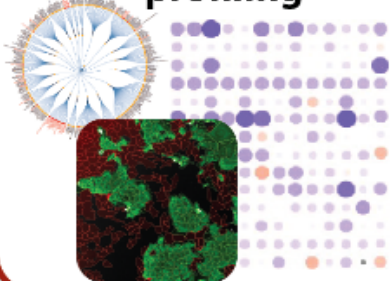
## Chemical Biology Services



## Data analysis & informatics



## Disease & compound profiling

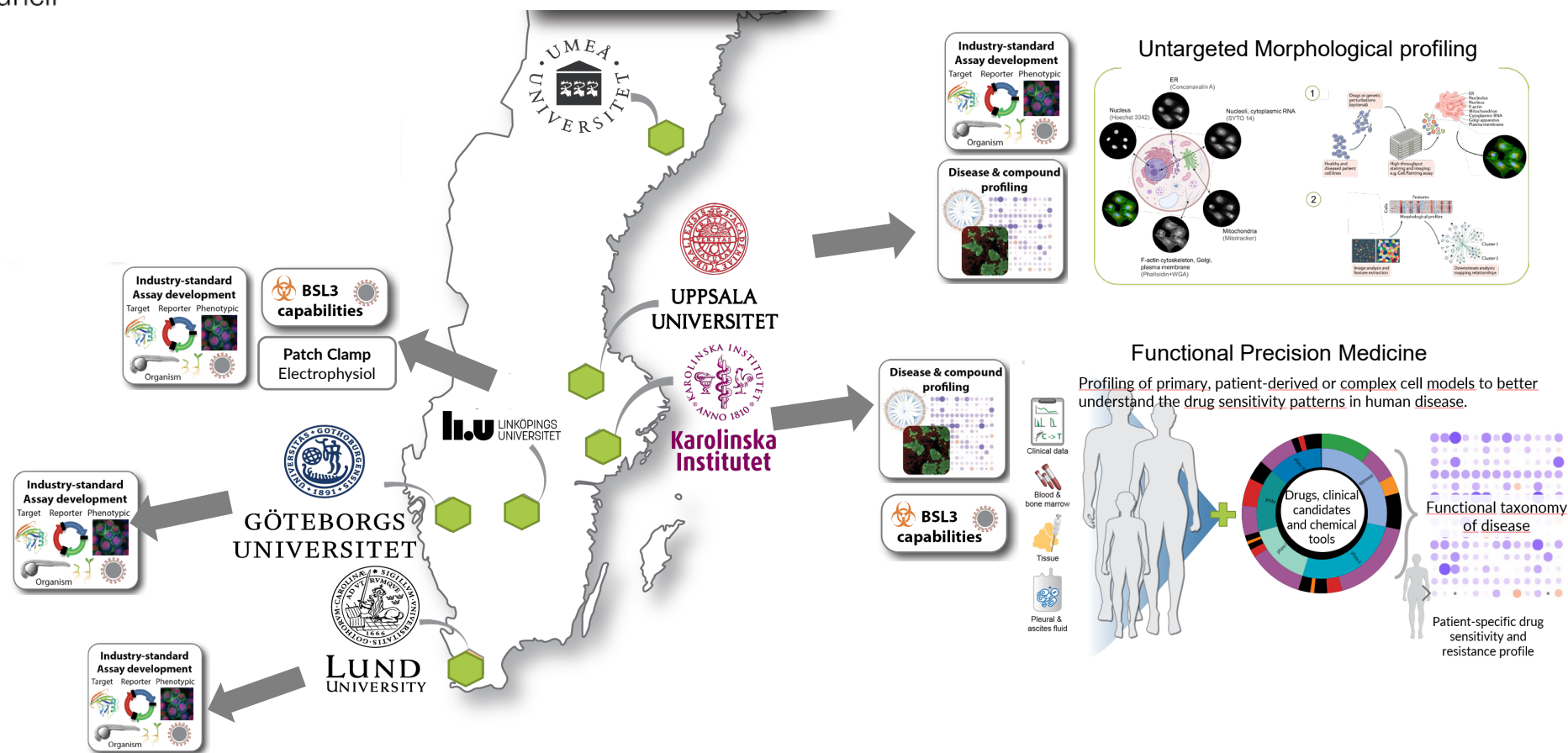


**High-quality data & knowledge fueling biological discovery & innovation**

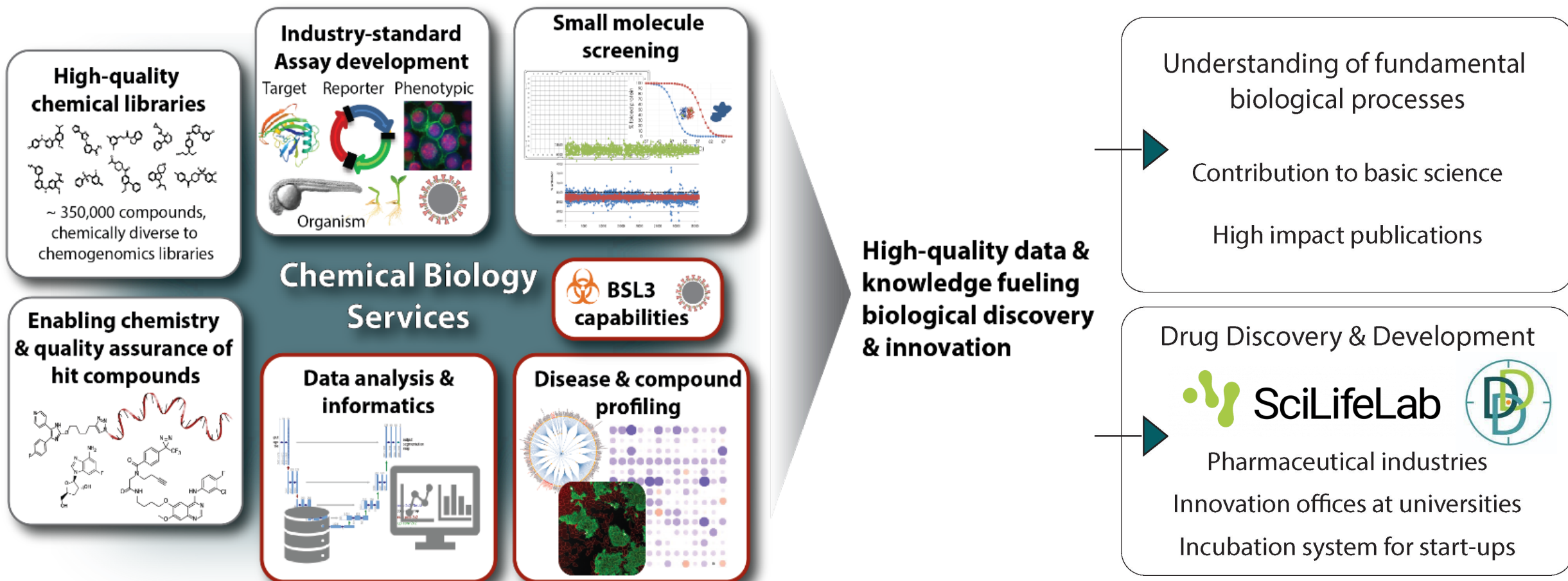
# CBCS from 2022



- A distributed infrastructure with ~25 FTEs
- In operation at KI and UmU for more than a decade.
- Four new local access nodes with complementary capabilities & new services



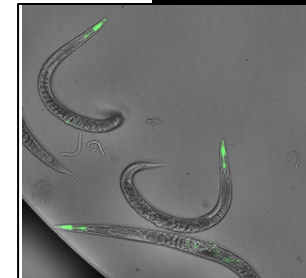
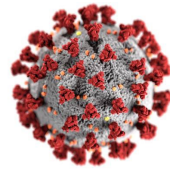
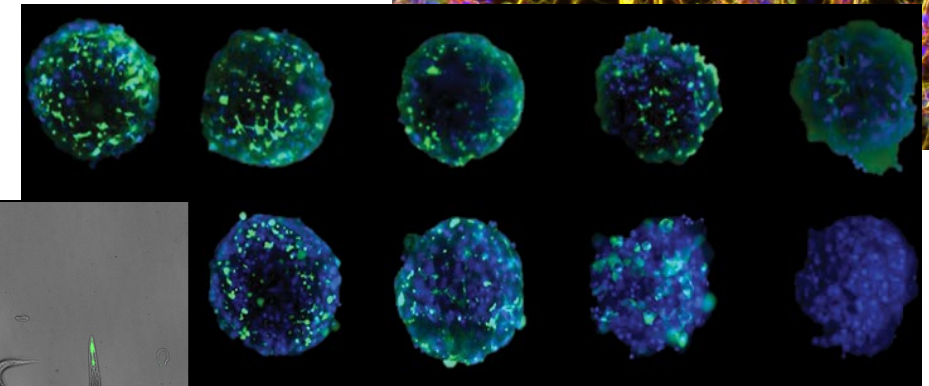
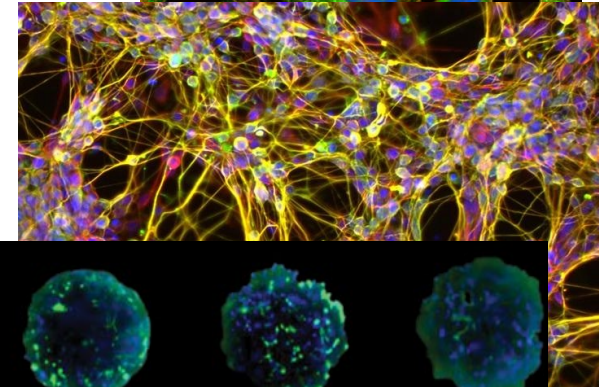
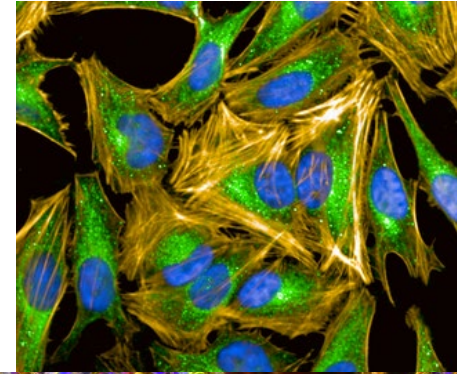
# CBCS Research Services



# Examples of Experimental models



- Target based assays / Enzymatic, GPCRs, Ion channels
- Bacteria
- (Cancer) cell lines
- Primary mouse epithelial fibroblasts/ bone marrow derived mast cells
- Human Patient-derived cancer cells populations
- Human pluripotent cells
- Spheroids and Organoids
- Whole organisms: Plants, C.elegans, Zebrafish
- BSL3 capabilities!

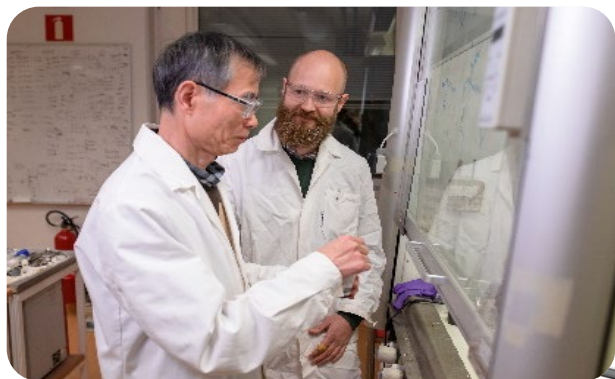


# Chemistry support



Medicinal  
Chemistry

Computational  
Chemistry

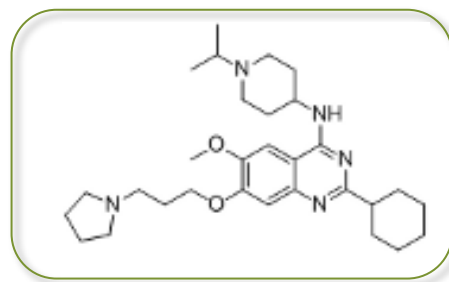


CBCS

## Hit Evaluations

- Identifying liabilities
- Synthesis or Finding analogues

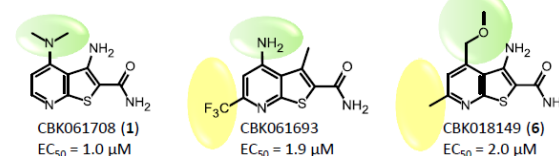
Design – Make – Test – cycles



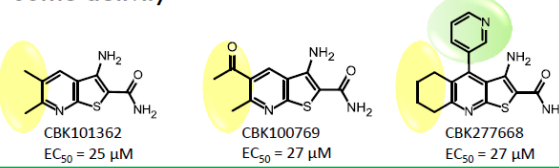
Biological  
Assay



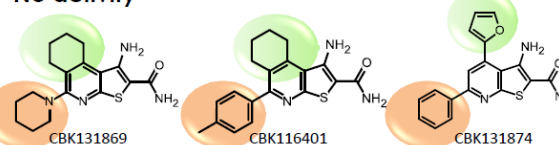
### Actives



### Some activity



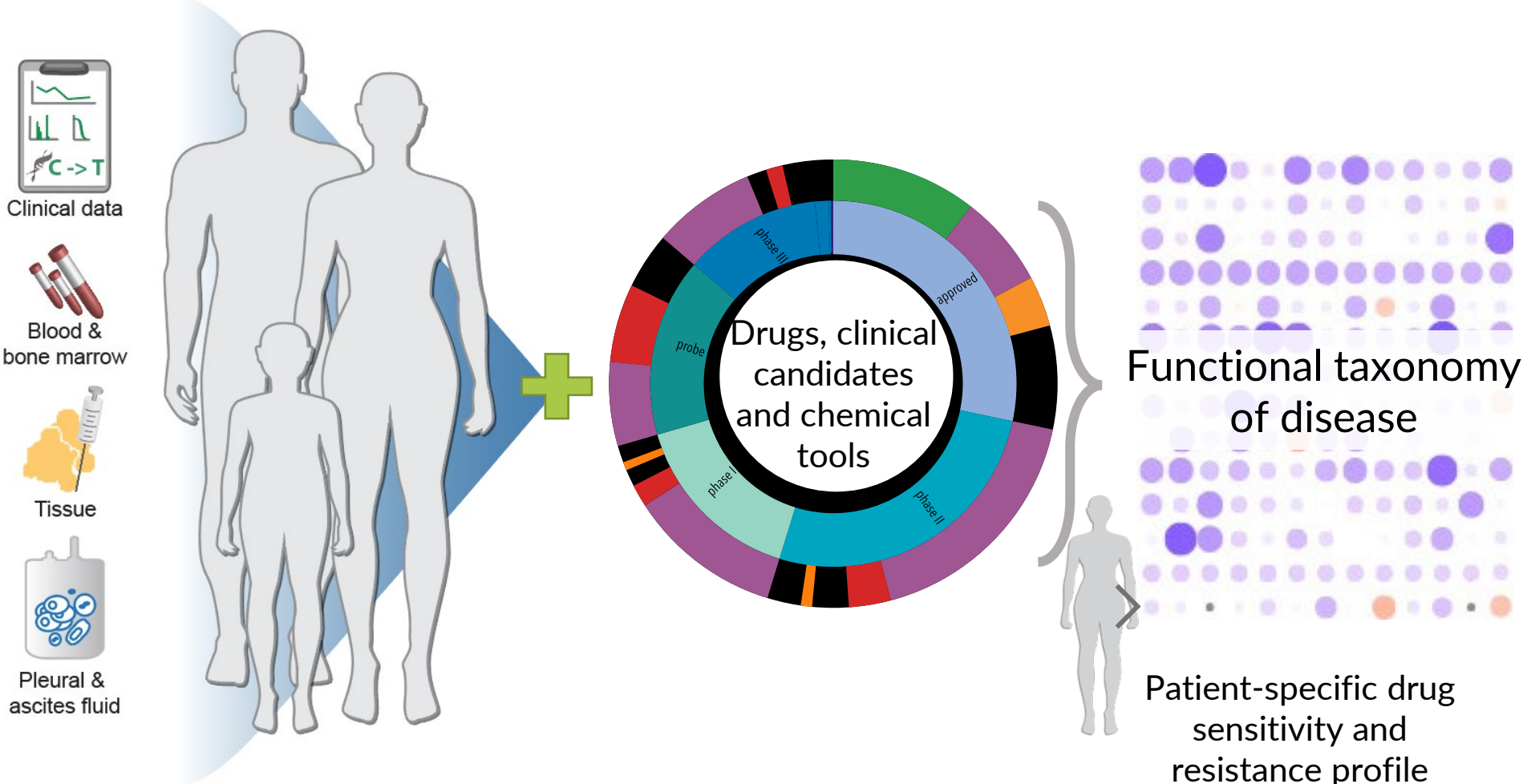
### No activity



# Functional precision medicine



Profiling of primary, patient-derived or complex cell models to better understand the drug sensitivity patterns in human disease.



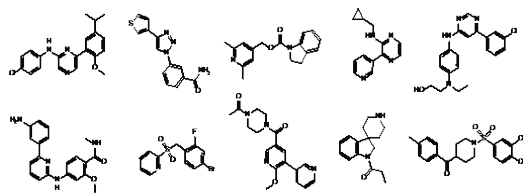
## Current Services

- Drug library design and delivery
- Assay development
- Guidance and support regarding sample logistics, ethical permits, best practices

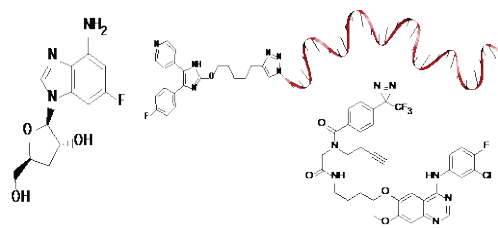
# The Compound Collection



High-quality  
chemical libraries

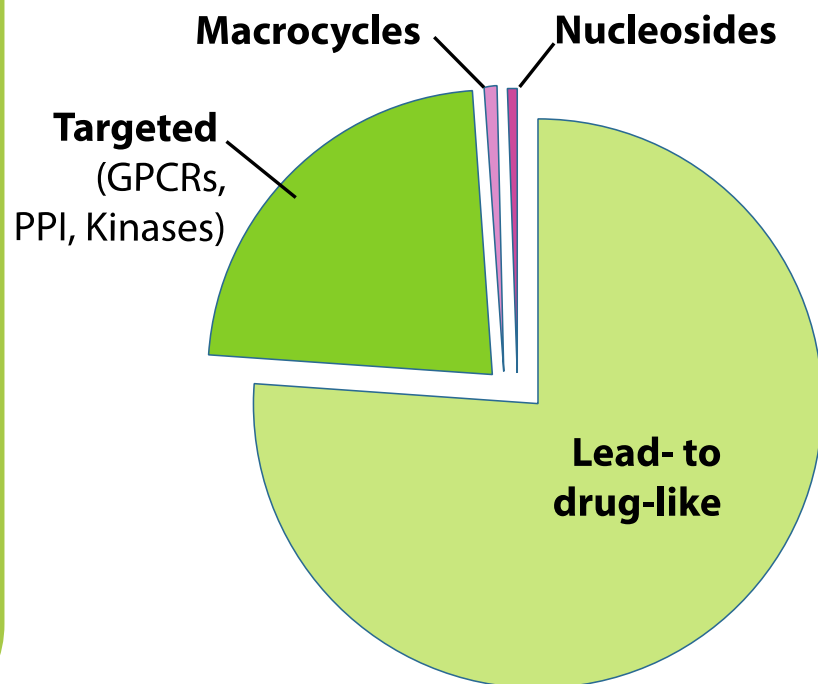


~350 000 compounds



Enabling chemistry for  
follow-up and validation

**Primary Screening set**  
37k small molecules



# Project types

- Pre-projects/ Consultancy
  - intellectual input from CBCS staff scientists
  - limited experimental support
  - delivery of limited number of test compounds
  - access to instrumentation
- Open Access – after training access to some of our instruments
- Service project
  - limited in time (~2 weeks of CBCS staff scientist support)
  - access to Compounds or Screening sets
- **“Large” projects - PRC projects**
  - more of CBCS resources is needed, 6 month – 2 years,
  - Assay development, Screening and/or chemistry based or profiling projects

*“first come – first serve”*

**PROJECT REVIEW COMMITTEE (PRC)**  
External and objective,  
representatives from academia and pharma industry

# Project Review Process



1

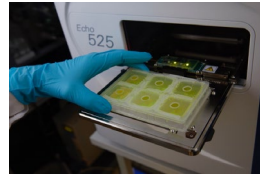


PI: Introduce project and goal

CBCS: Review technical feasibility,  
introduce working model

→ **Tentative Project**

2



PI: Pre-project assay work

CBCS: Intellectual input, limited  
experimental work, delivery of test  
compounds, access to  
instrumentation

→ **pre-Project – to find out: what  
support do the user need**

3



Project proposal with Chemical Biology Consortium Sweden

Instructions: Project proposals are uploaded directly as a pdf file into Anubis in the open call for larger CBCS project support. All material is considered confidential, and access is restricted to a limited group of CBCS Project Review Committee members and CBCS personnel under conditions of confidentiality, solely for the purpose of evaluating the proposed research.

The scope of the collaborative CBCS projects varies significantly and the different project types require different competencies from CBCS. To ensure that we can deliver support to prioritized projects, we categorize the project proposals as either of the types 1-3 below.

PI: PRC application using CBCS  
template

CBCS: technical feasibility,  
resources and time estimates,  
database searches - novelty

**PROJECT REVIEW COMMITTEE (PRC)**  
External and objective,  
representatives from academia and pharma industry

5



PI: Sign agreement including  
project plan and cost estimates,  
deliver reagents

CBCS: Initiate work on the project

→ **Project start**

4



1. PRC meetings bi-annually,  
gives priority A-E
2. CBCS node leaders plan work  
and gets steering group  
approval for the plan

**Next application date:  
April 14<sup>th</sup> 2023**



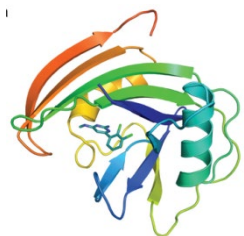
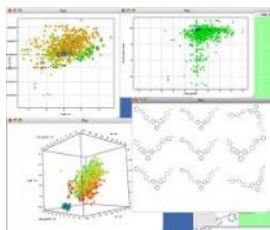
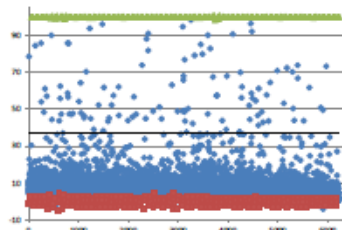
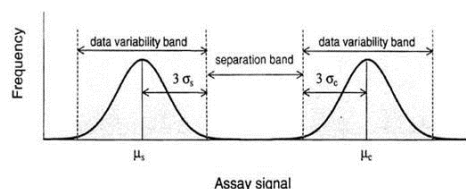
## PRC evaluation criteria:

- Biological rational and potential scientific impact:
  - Research/technological quality
  - Novelty and originality
  - Relevance
  - Overall score
- Importance of CBCS efforts
- Availability of described assays, resources and funding incl. follow up and validation studies
- Scoring of publication plans

## CBCS evaluation criteria:

- Is the requested work from CBCS feasible?
- How many full-time months of work from CBCS?
- Are there already small molecules available?
- List secondary assays suggested
- Monitor national spread and gender perspective

# CBCS collaborative project model



- Assay design and development
- Formating 96 - 384 well plates

- The "Screen"
  - Pre-screen
  - Full deck screen
  - Follow up in several concentrations
  - Counter screen

- Hit Confirmation
- Orthogonal assays
- In silico profiling
- Re-Synthesis of hits
- Test analogs - crude SAR

- Medicinal chemistry to establish SAR and optimizations for further studies

PI & CBCS

CBCS (PI)

CBCS (PI)

CBCS/DDD & PI

Pre-project /  
Assay  
development  
project

Screening  
project

Chemistry based  
project

Meeting x Launch x CBCS L x Project x CBCS L x CBCS L x Chemi x SWOIS x Dagens x Post A x

← ↻ 🏠 <https://anubis.scilifelab.se/call/CBCSLP23S>

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## Call for proposals CBCS Large Projects Call Spring 2023

**Identifier** CBCSLP23S

**Opens** 2023-01-24 11:00 CET

**Closes** 2023-04-14 12:00 CEST **Not yet open.**

**My proposal** You need to be logged in to create a proposal. [Login](#)

**Description**

The Chemical Biology Consortium Sweden (CBCS) is a national research infrastructure in Sweden funded by the Swedish host universities. We provide world-leading expertise in the field of chemical biology to academic groups across Sweden to explore complex biology through the development and application of small molecule tools. To do this we provide state-of-the-art enabling chemistry, as well as access to small-molecule libraries. Additionally, we have recently expanded our service to include protein painting, support for functional precision medicine projects, screening of infectious pathogens in biosafety level 2 and metabolite profiling/screening.

We are looking for projects in these areas to support starting August 2023. All applications are ranked by our external reviewers on the basis of scientific merit and feasibility. Prioritized projects receive subsidized support. We require a demonstration of technical feasibility throughout the project. See [www.cbcs.se](http://www.cbcs.se) for your nearest point of contact.

**Documents**

*Template CBCS project proposal\_Spring\_2023.docx* [Download](#)

Template for the description of the project proposal.

*Dummy example CBCS project proposal.pdf* [Download](#)

A dummy example proposal illustrating the level of detail expected for proposals within this call.



**Contacts us  
minimum 2 weeks  
before deadline to discuss  
your project and application!**

**[www.cbcs.se](http://www.cbcs.se)**





Swedish  
Research Council



[www.cbcs.se](http://www.cbcs.se)



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