Multidimensional graph database leveraging molecular, morphological, and genetic data to understand and discover new drug mechanisms.

WHAT WE'RE CURRENTLY DOING

Chemical Information

Molecular Network

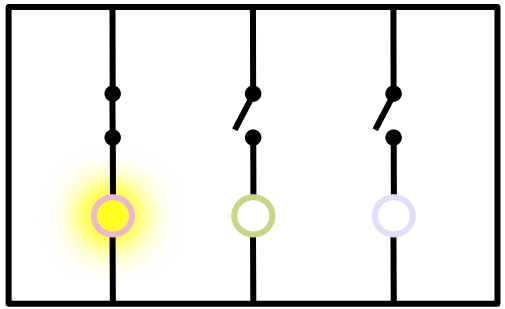
Phenotype Information

WHAT WE'RE CURRENTLY DOING

Chemical Information

Molecular Network

Phenotype Information

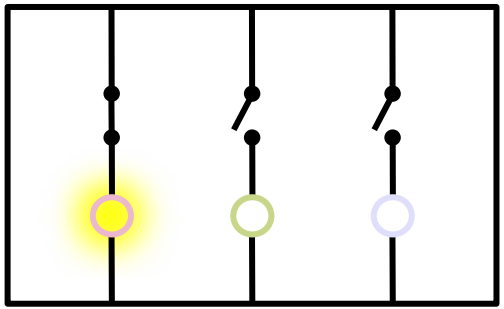


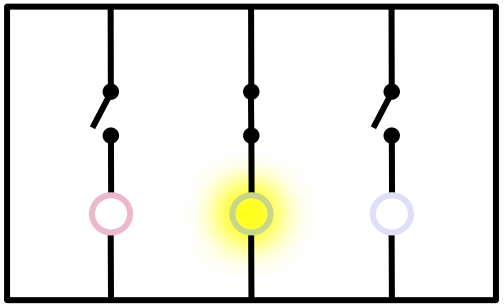
WHAT WE'RE CURRENTLY DOING

Chemical Information

Molecular Network

Phenotype Information



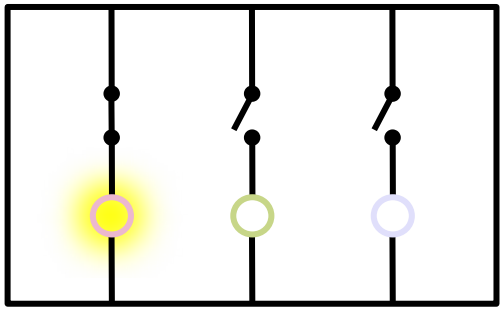


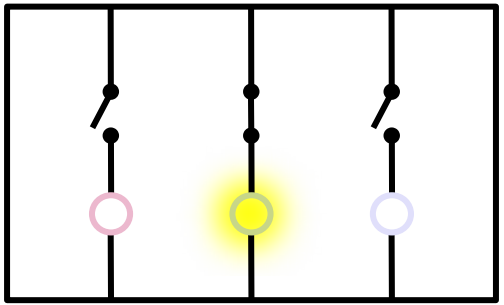
WHAT WE'RE CURRENTLY DOING

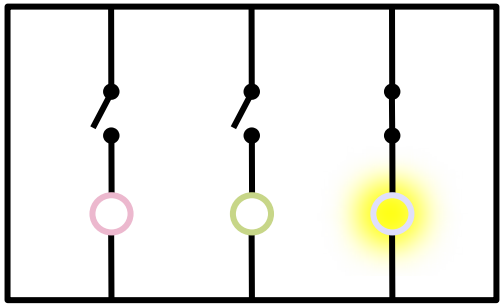
Chemical Information

Molecular Network

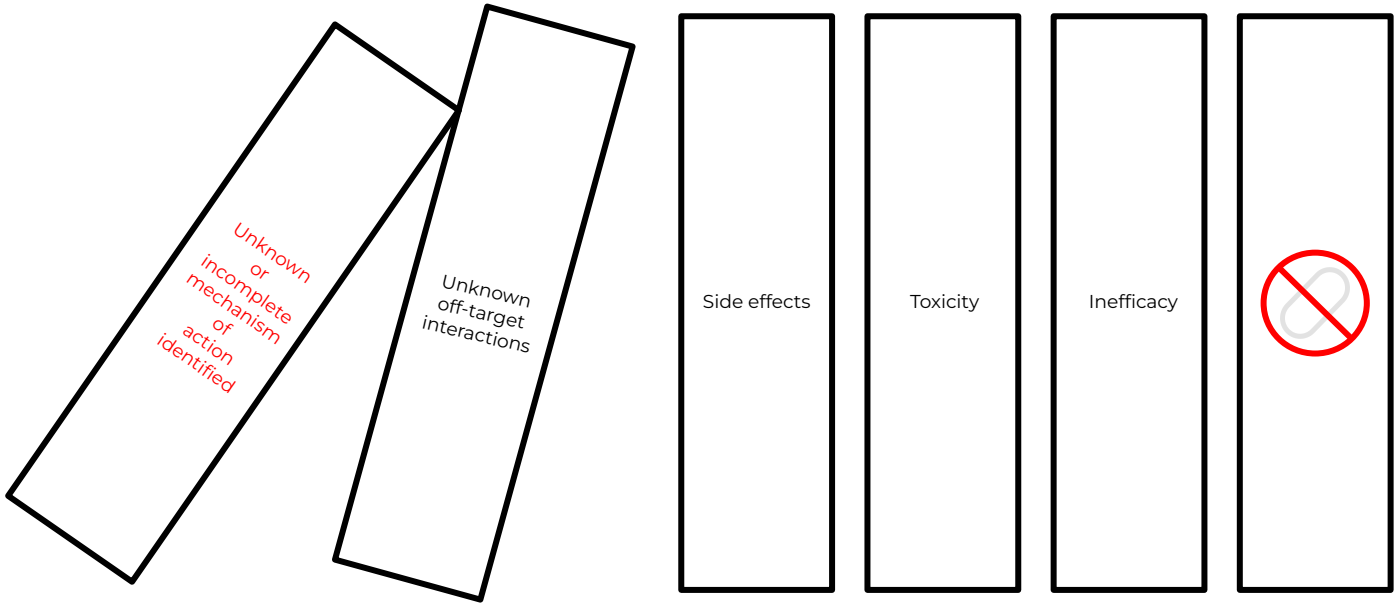
Phenotype Information





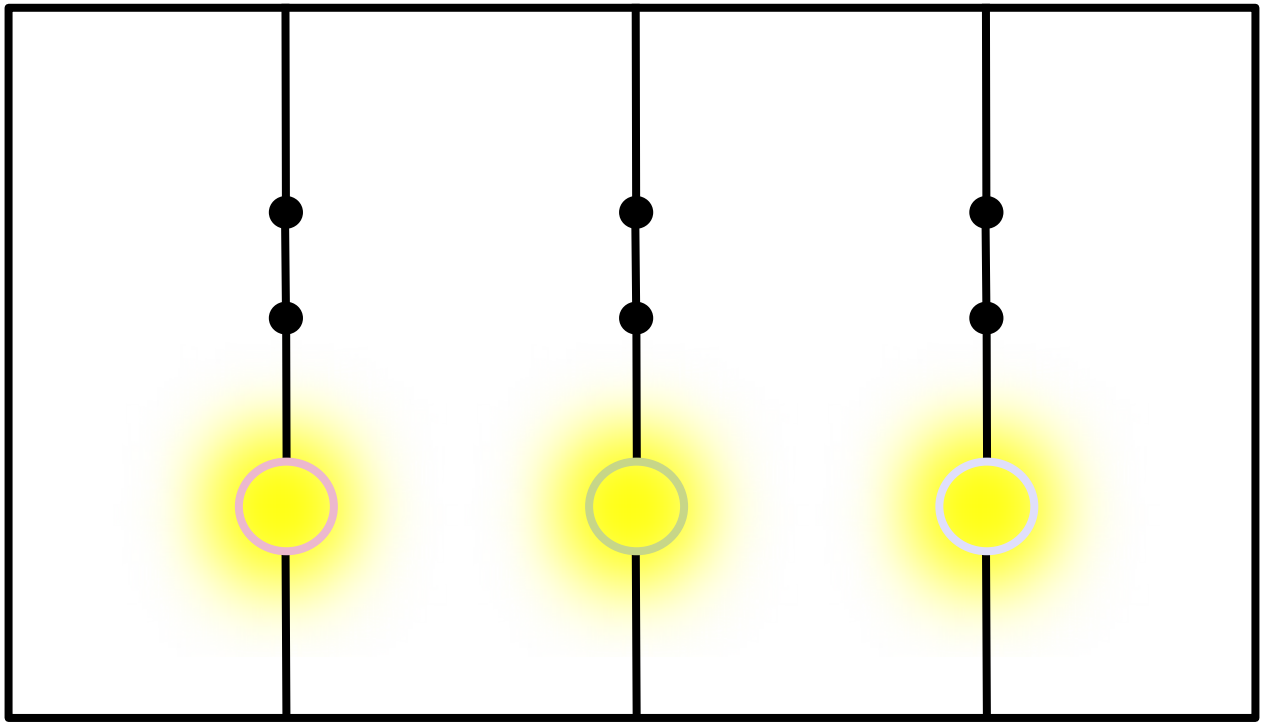


THE RESULT



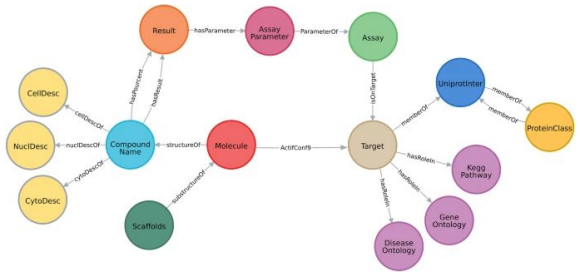
90% DRUG FAILURE RATE.

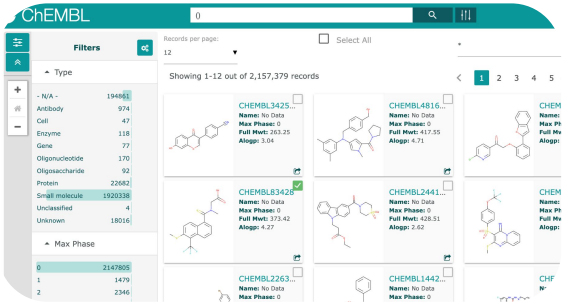
BUT WHAT IF...



BenchSci +

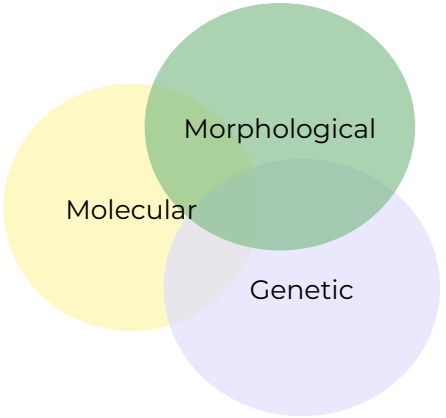
A graph database for a multi-dimensional understanding of MoAs





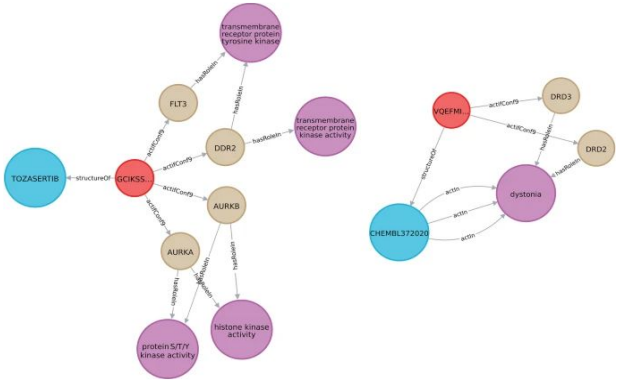
1

Mine data from public databases + client data to add to BenchSci's database



2

Standardize molecular, genetic, and morphological **data**

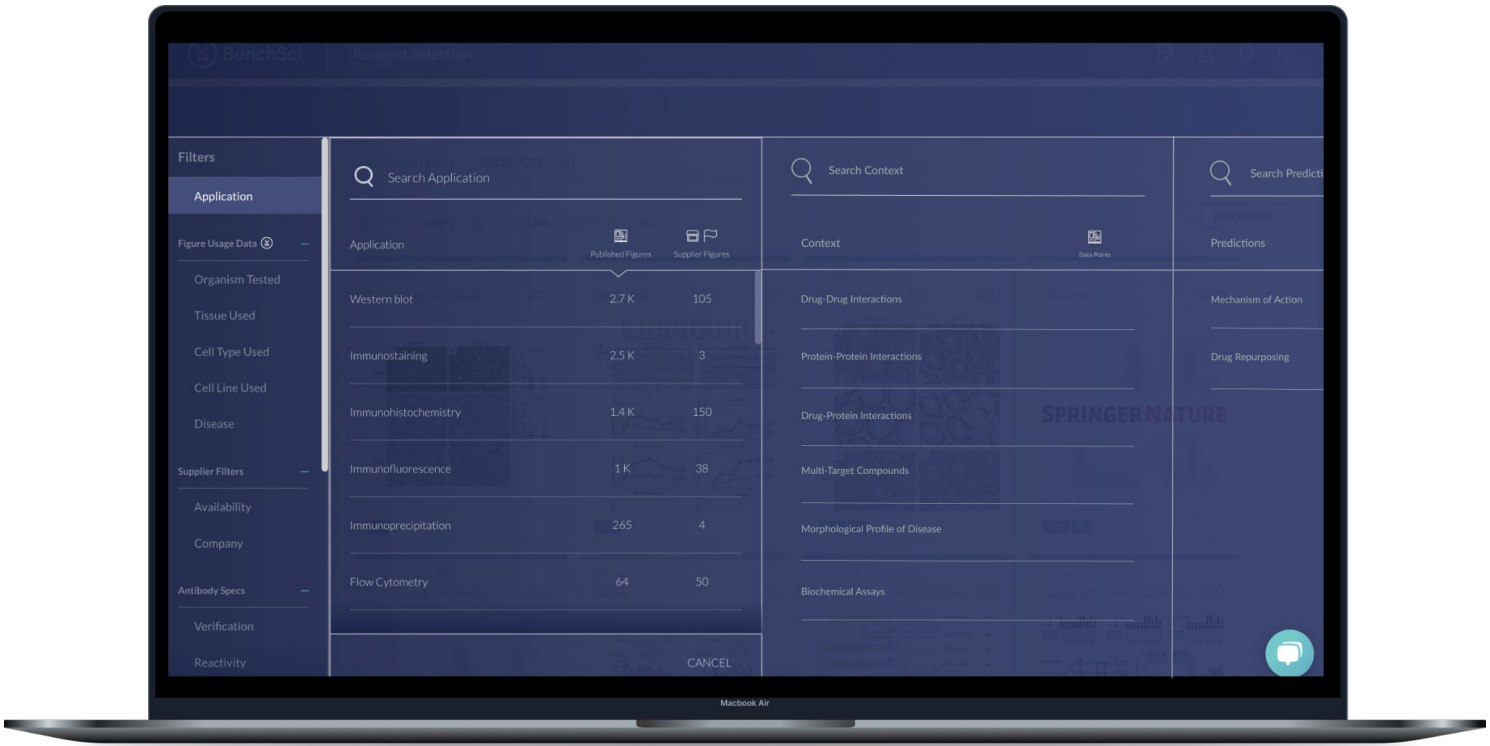


3

Multi-dimensional graph network generation

4

Mechanism of action, multi-target compound, chemical-morphological **profiling and prediction**


BenchSci
Reagent Selection
Filters
Application
Figure Usage Data
Organism Tested
Tissue Used
Cell Type Used
Cell Line Used
Disease
Supplier Filters
Availability
Company
Antibody Specs
Verification
Reactivity
Search Application
Application
Published Figures
Supplier Figures
Western blot
2.7 K
105
Immunostaining
2.5 K
3
Immunohistochemistry
1.4 K
150
Immunofluorescence
1 K
38
Immunoprecipitation
265
4
Flow Cytometry
64
50
CANCEL
Search Context
Context
Data Points
Drug-Drug Interactions
Protein-Protein Interactions
Drug-Protein Interactions
Multi-Target Compounds
Morphological Profile of Disease
Biochemical Assays
Search Predicti
Predictions
Mechanism of Action
Drug Repurposing
Macbook Air

DRUG REPURPOSING: ENGINEERING SERENDIPITY

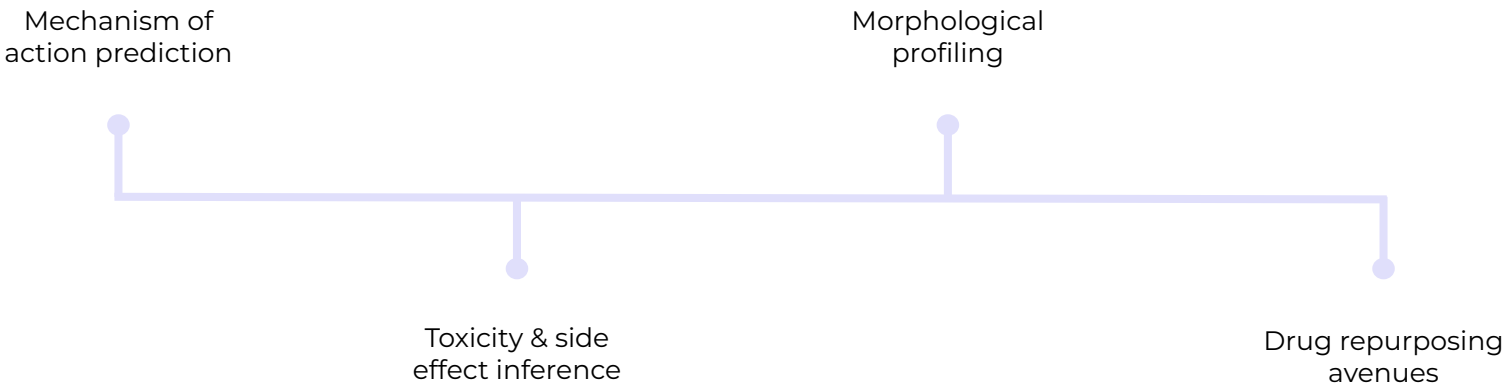
5X

Up to 500% reduction in **time**

15 yrs → 3 yrs

37X

Up to 3700% reduction in **costs**

$2-3 billion → $40-80 million

SYSTEMS MEDICINE: HOLISTIC UNDERSTANDING