

# CONTINUOUSLY-UPDATING PIPELINE PRIORITIZATION PLATFORM



**A client was interested in prioritizing their preclinical pipeline to determine which assets to bring forward into Phase I clinical trials**

## SITUATIONAL ANALYSIS

- A client sought to leverage a number of technologies utilizing small molecules to stimulate immune responses against proteins over-expressed by various tumor types
- The client had identified a number of molecules to bring forth into clinical trials; targets included:
  - HER-1/EGFR, VEGF, PD-L1/PD-1, etc.
- Additionally, the client wished to further biologically validate the most optimal pipeline candidates
- Determining the commercial opportunity for each target, tumor type, and market was crucial for prioritizing the client's development pipeline

## SOLUTION

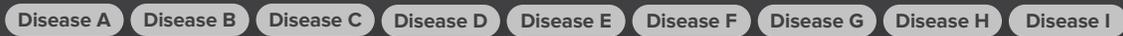
To prioritize the client's development pipeline, we developed a customized dashboard that continually:

- Identified and validated new potential uses of target, pathway, disease and drug candidates
- Estimated costs of clinical trials per indication and estimated likelihood of success (based on historical trials)
- Monitored marketed competitors and identified those in development by indication, target, and market, and determine market size and value

**Innoplexus three step approach provided biological validation, estimated clinical trial costs potential / risk, and commercial evaluation**

### 1. BIOLOGICAL VALIDATION

Leveraging Innoplexus CAAV™ technology and all publicly available papers, congresses, etc., we identified all potential uses of the client's developed targets

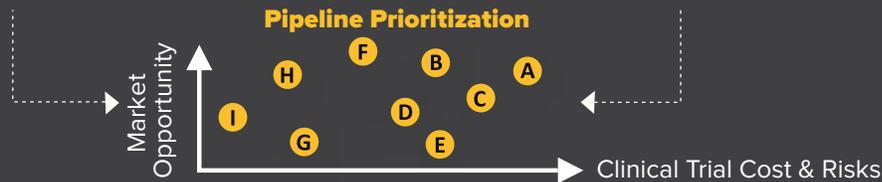


### 2. CLINICAL TRIAL VALUATION

Innoplexus evaluated all competitor clinical trials to determine the estimated duration & sample size needed for regulatory approval, and developed a model to estimate the clinical trials costs & risks

### 3. COMMERCIAL EVALUATION

Using company reports and third-party data, Innoplexus estimated the market potential based on sales of approved agents in the diseases and anticipated future levels of competition



## Identification of new opportunities for drug candidates

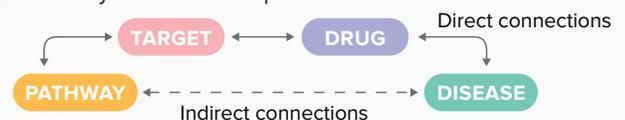
**Innoplexus solutions connected disparate concepts and less researched disease pathways**

**Network Map of Targets, Diseases, Drugs Associated with PD-1 Signaling Pathway**



### INNOPLEXUS TECH OVERVIEW

- Using Innoplexus CAAV™ technology with our self-learning life science-specific ontology we identify and link various concepts from the public literature domain while reducing noise
- Providing a real-time exhaustive research library on demand to identify and validate optimal indications



### BENEFITS

By identifying therapeutic areas that are currently underserved by available drugs for pathways of interest, the client:

- Prioritized clinical trial efforts, focusing on the optimal pathway of intervention, as determined by druggability scores
- Streamlined pre-clinical research

## Validating the biological activity of client's drugs

Using a custom protein analytics platform, based on Tanimoto algorithms and optimal molecular docking analyses



### INNOPLEXUS TECH OVERVIEW

Leveraging public information on protein structures, Innoplexus technology models protein-protein interactions and assesses theoretical binding affinities

- Public information sources: PDB, ChEMBL, Uniprot, Pharos, Pfam, Proteopedia, etc.
- Public information contains protein sequence, structure, function, family classification, active site, domain & druggability



### BENEFITS

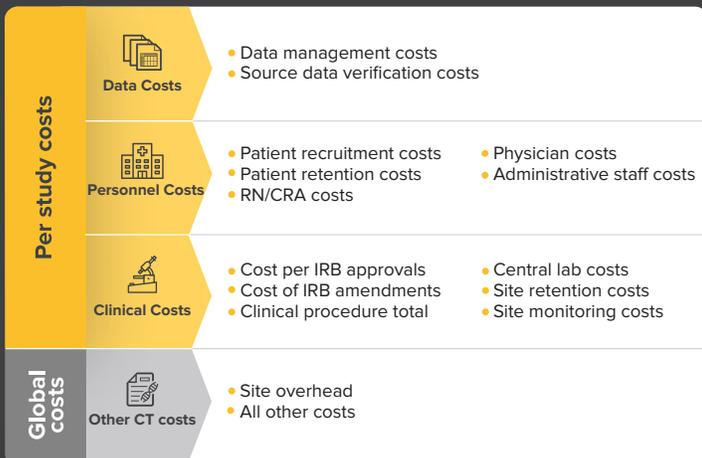
The client was able to further validate the biological activity of their drugs through Innoplexus's solution, which provided:

- Structural views of proteins based on sequences & 2D structures
- Binding and allosteric site information
- List of competitors binding to the same sites
- Druggability scores

## Modelling trial costs and likelihood of success for each disease

Based on competitors' trial size, duration, and geographic site distribution

### Clinical Trial Costs



### INNOPLEXUS TECH OVERVIEW

• Compiled, normalized & analyzed all published clinical trials data including, but not limited to the following:

- Phase
- Indication
- Comparator
- Sample Size
- Principal Investigators



### BENEFITS

- While modeling clinical trial costs is traditionally a time consuming task, Innoplexus' technology rapidly scaled modeling efforts after aligning on key assumptions with the client and allowing custom scoring
- Modeling costs for all potential diseases provided a more comprehensive opportunity assessment, rather than modeling costs for a select few diseases

## Assessing the market opportunity for each indication

Based on level of current and future competition, and market size or value



### Clinical Competitive Intelligence

- Clinical Trial Overview
- Market Fragmentation
- Upcoming Drugs
- Indication Analysis across competitors



### INNOPLEXUS TECH OVERVIEW

- Leveraging our computer vision software, Innoplexus extracted information from PDFs (e.g. company reports 10-Q, etc.), such as drug sales
- Additionally, we integrated third-party data (e.g. prescription sales data) to further bolster decision making



### BENEFITS

- Prioritizing based on commercial opportunity ensured assets brought into clinical trials were likely to provide the client with positive returns
- By integrating third-party data, Innoplexus provided the client with a single source of information presented in a dashboard

### Commercial Opportunity Assessment

- Market Share Landscape
- Patent Competitor Trends

