

# ASCEND™ by BenchSci fast facts

## A tool that can save researchers years and millions.

A staggering 98 percent of pharmaceutical research investment fails to reach patients. That's why BenchSci has created ASCEND™. It's an intuitive software platform that enables scientists to discover biological connections, surface contextual experimental evidence, and uncover risks early to move the most promising preclinical projects forward faster.

### Typical Preclinical Lifecycle

2-5 years

### ASCEND Lifecycle

1-3 years

ASCEND harnesses proprietary machine learning technology, that is trained by scientists, to extract experiment evidence from internal and external data. Patented ML models read photographs, charts, graphs and other evidence to uncover hidden data from millions of experiments. Using ontology datasets it makes connections, creating an unbiased, evidence-based map of disease biology.

6

Years training AI

>15M

Papers analyzed

>70M

Reagent products analyzed

>82M

Reagent use cases indentified

# Powerful technology with a proven ROI



**130M+**

Saving efficiency across all partners in 2022 alone.



**40%**

Partner analysis revealed that preclinical programs could be accelerated by at least 40%.



**40%**

Percentage of projects that identified a new indication to explore or an additional target gene not previously considered.



**33%**

Percentage of projects that identified an early safety or efficacy risk to improve R&D productivity.

## **RISKS FLAGGED:**

130,000+ safety risks on chemicals, drugs, proteins and genes

135,000+ efficacy risks on chemicals, drugs, proteins and genes

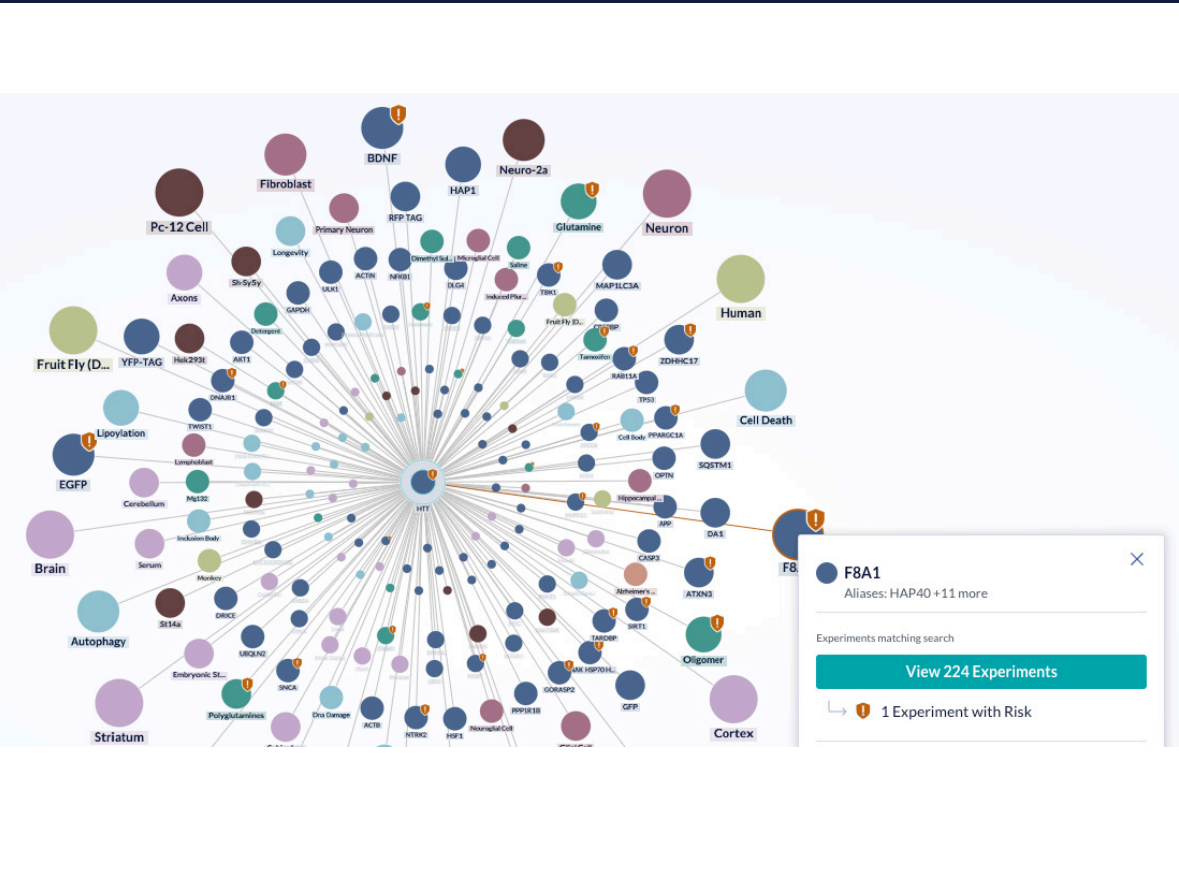
60,000+ data quality risks on experiments originating from retracted papers

**50,000+ scientists**  
**16/20 top pharma companies**  
**4,500 academic research institutions**

# How ASCEND works 1/3

The end-to-end SaaS solution has four applications that guide and empower scientists at every stage of preclinical research, from inception to Investigational New Drug (IND) submission by:

Improving target selection, due diligence and hypothesis generation.



Uncover potential targets through a systems biology view of experimental evidence.

Entity	↓ Experiments	Publications	⚠ Risk Defender	Antibodies	Protein Products
GFP	179K	45K	148 Safety Risks 217 Efficacy Risks	4K	129
NFKB1	147K	55K	724 Safety Risks 473 Efficacy Risks	5.7K	283
GAPDH	138K	78K	96 Safety Risks 102 Efficacy Risks	5.6K	767
ACTB	133K	75K	42 Safety Risks 111 Efficacy Risks	6.4K	265

Prioritize the most promising targets from a list of 1000s of genes and proteins.

TP53 Experiments

With HTTTP53 Risks

Published Experiment | PLoS ONE (2011)  
"Exogenous expression of p53 significantly (n = 3, p = 0.041) reduced the steady state level of RelA/NFkB) in ST Hdh Q7 /Hdh Q7 cells ( Figure 8A )."

HTTTP53Exogenou...

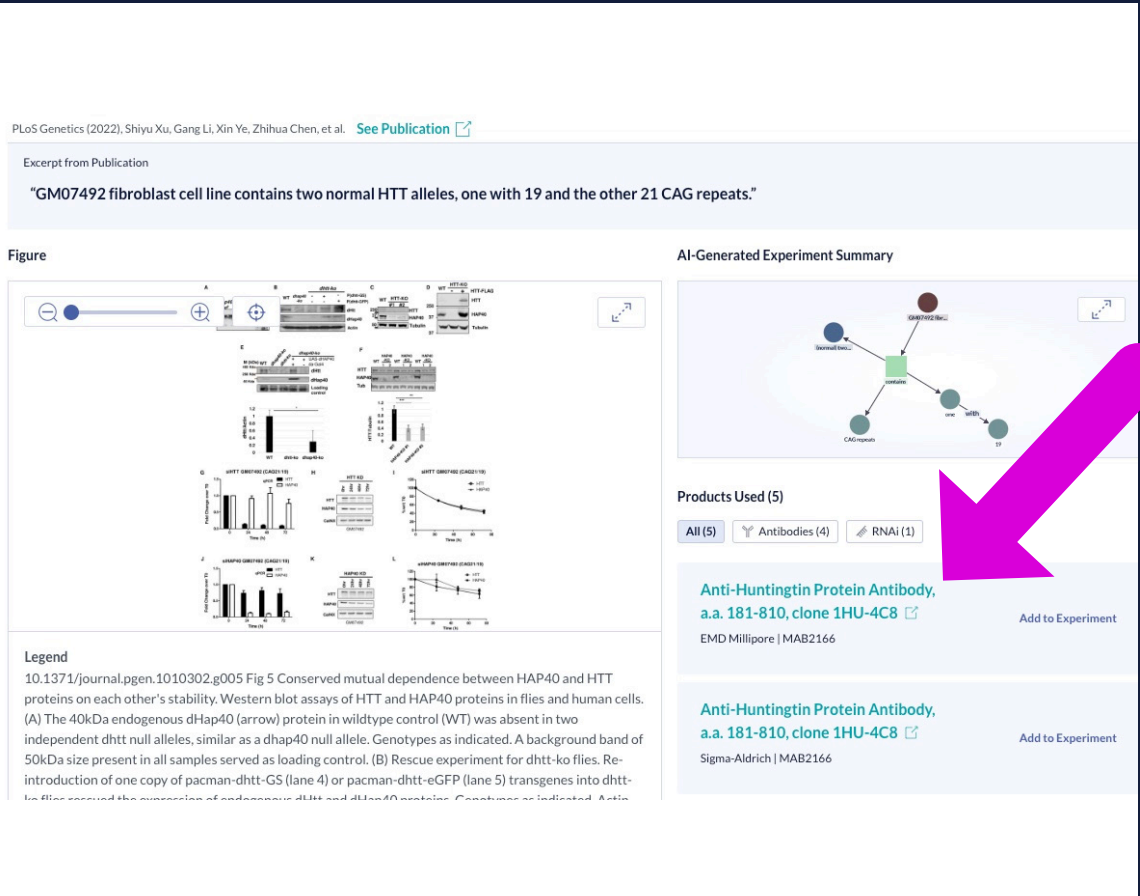
Published Experiment | PLoS ONE (2011)  
"The model shows that mutant HTT modulates the expression of both p53 and p65 subunit of NFkB (RelA/NFkB) expression and activity and miR-146a, miR-125b and miR-150 expressions."

DNAKHTTNFKB1TP53

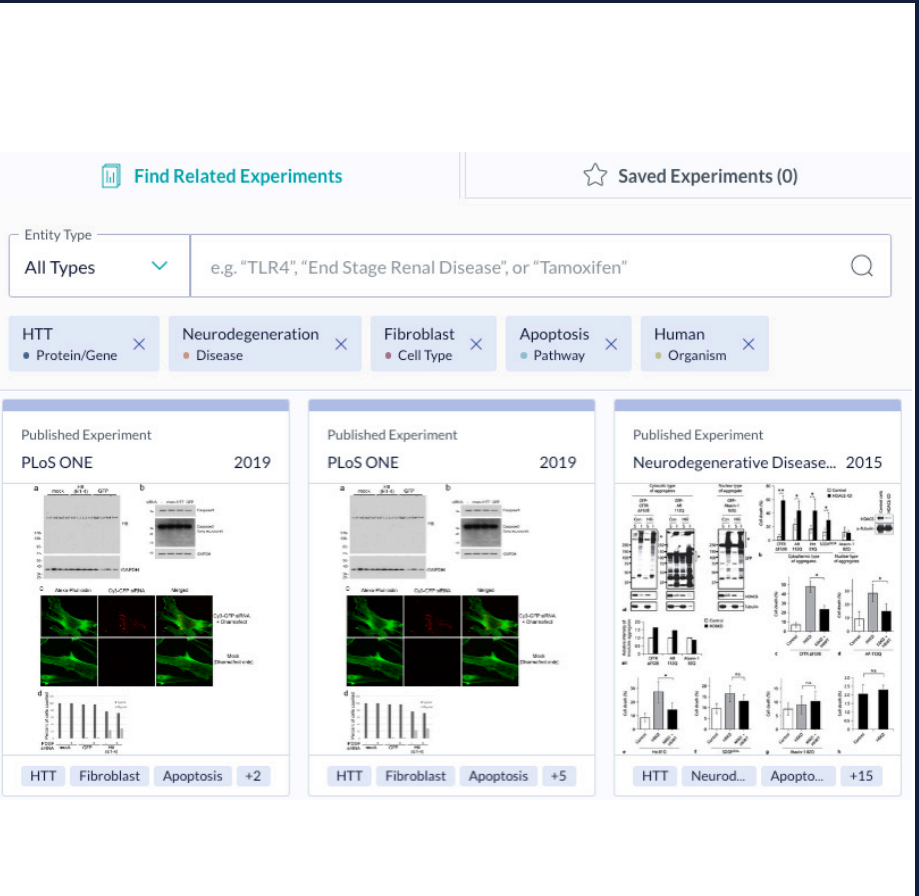
See which publications and experiments support and validate the hypothesis.

# How ASCEND works 2/3

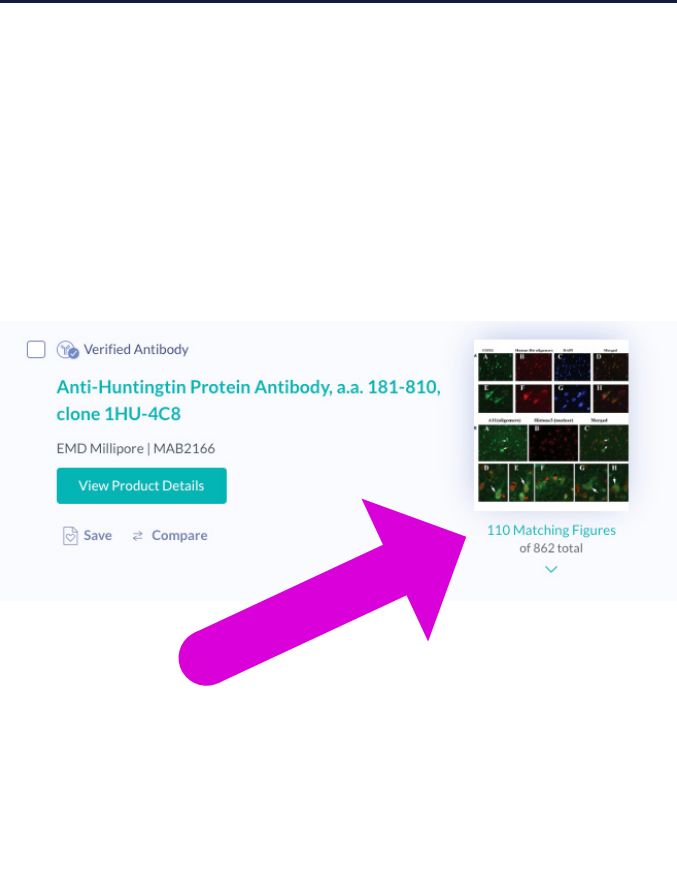
Developing approaches to test hypotheses and design experiments.



Eliminate unnecessary trial and error by building an experimental path based on published evidence.



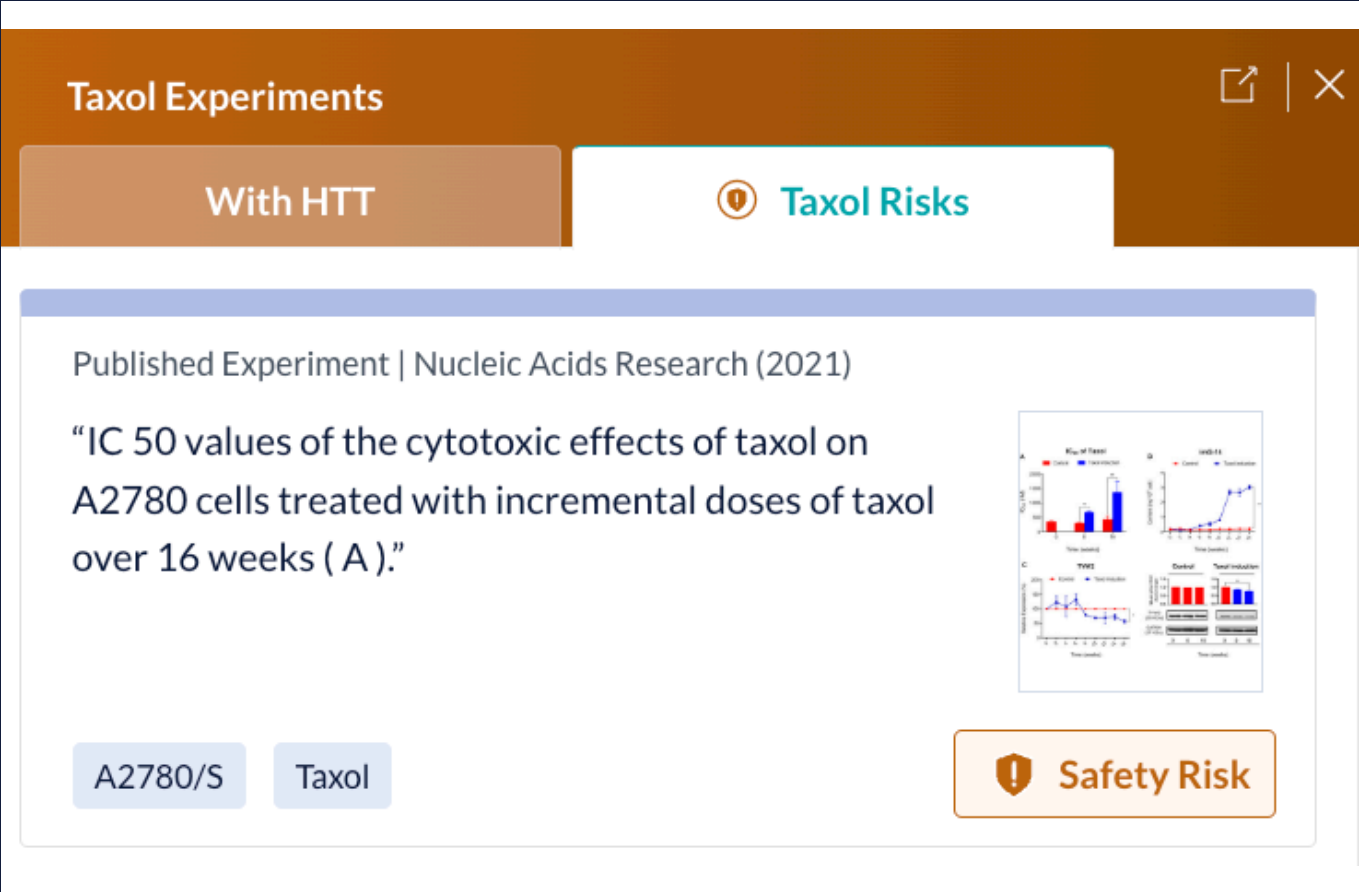
Find the most optimal experiment design.



Reduce irreproducibility by selecting proven reagents and model systems.

# How ASCEND works 3/3

Identifying safety and efficacy risks to support submission for trials.



Flag safety and efficacy risks before they turn into liabilities during clinical trials.



Identify novel biomarkers to help prove your hypothesis.