

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

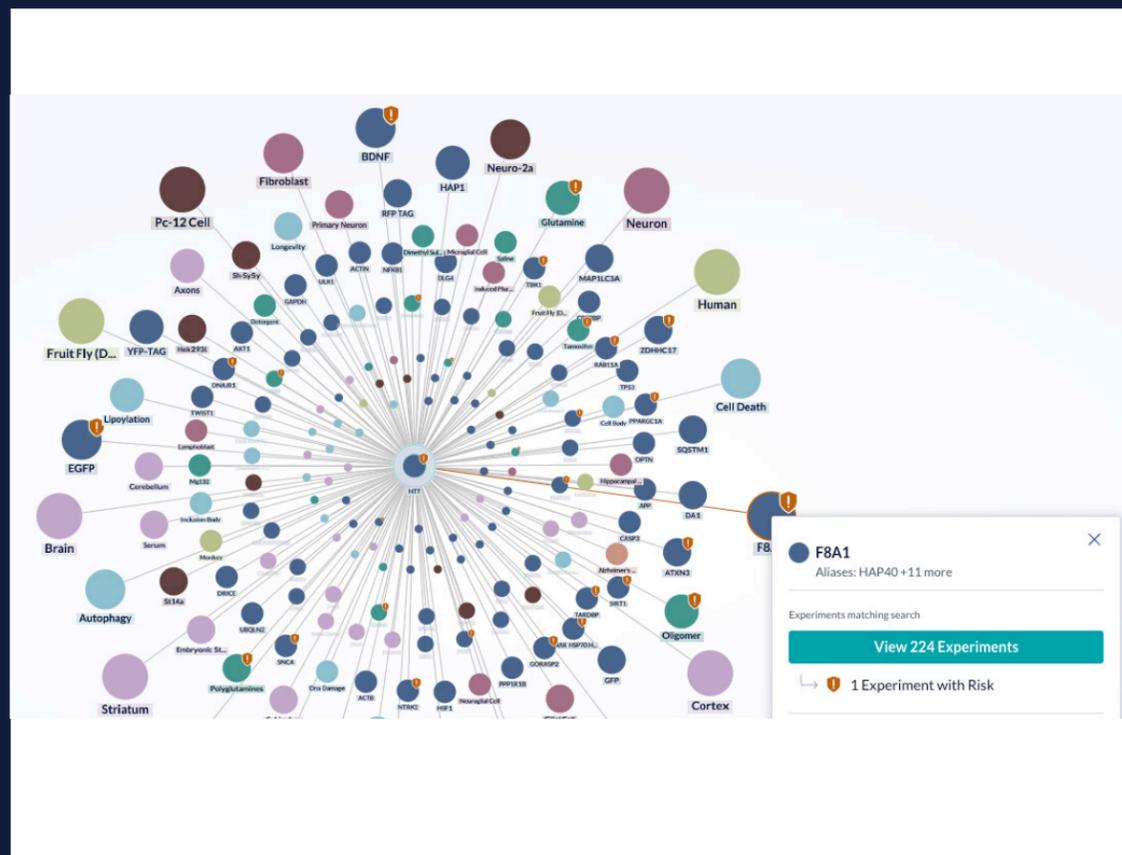
60,000+ data quality risks on experiments originating from retracted papers

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 HTT | TP53 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)."

HTT TP53 Exogenou...

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."

DNAK HTT NFKB1 TP53

See which publications and experiments support and validate the hypothesis.

How ASCEND works 2/3

Developing approaches to test hypotheses and design experiments.

PloS Genetics (2022), Shiyu Xu, Gang Li, Xin Ye, Zhihua Chen, et al. [See Publication](#)

Excerpt from Publication
 "GM07492 fibroblast cell line contains two normal HTT alleles, one with 19 and the other 21 CAG repeats."

Figure

AI-Generated Experiment Summary

Products Used (5)

- Anti-Huntingtin Protein Antibody, a.a. 181-810, clone 1HU-4C8 (EMD Millipore | MAB2166)
- Anti-Huntingtin Protein Antibody, a.a. 181-810, clone 1HU-4C8 (Sigma-Aldrich | MAB2166)

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

Find Related Experiments

Entity Type: All Types (e.g., "TLR4", "End Stage Renal Disease", or "Tamoxifen")

HTT (Protein/Gene) Neurodegeneration (Disease) Fibroblast (Cell Type) Apoptosis (Pathway) Human (Organism)

Published Experiment PLoS ONE 2019

Published Experiment PLoS ONE 2019

Published Experiment Neurodegenerative Disease... 2015

Find the most optimal experiment design.

Verified Antibody

Anti-Huntingtin Protein Antibody, a.a. 181-810, clone 1HU-4C8

EMD Millipore | MAB2166

View Product Details

Save Compare

110 Matching Figures of 862 total

Reduce irreproducibility by selecting proven reagents and model systems.

How ASCEND works 3/3

Identifying safety and efficacy risks to support submission for trials.

Taxol Experiments

With HTT | **Taxol Risks**

Published Experiment | Nucleic Acids Research (2021)

“IC 50 values of the cytotoxic effects of taxol on A2780 cells treated with incremental doses of taxol over 16 weeks (A).”

A2780/S | Taxol

Safety Risk

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

Entity Type: All Types | e.g. “TLR4”, “End Stage Renal Disease”, or “Tamoxifen”

Huntington Disease | Human | Blood Testing | ELISA

Published Experiment: Emerging Infectious Disea... 2022

Published Experiment: Journal of Virology 2017

The level of VEGF-A was measured by enzyme-linked immunosorbent assay.

Han-Yun Hsiao, Yu-Chen Chen, Yi-Hua Hsu, et al.

Identify novel biomarkers to help prove your hypothesis.