

Round-Up 2024: What's new in the ASCEND platform

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A look back at some exciting features that we built in 2024 to empower scientists to design more successful experiments



We expanded our data coverage

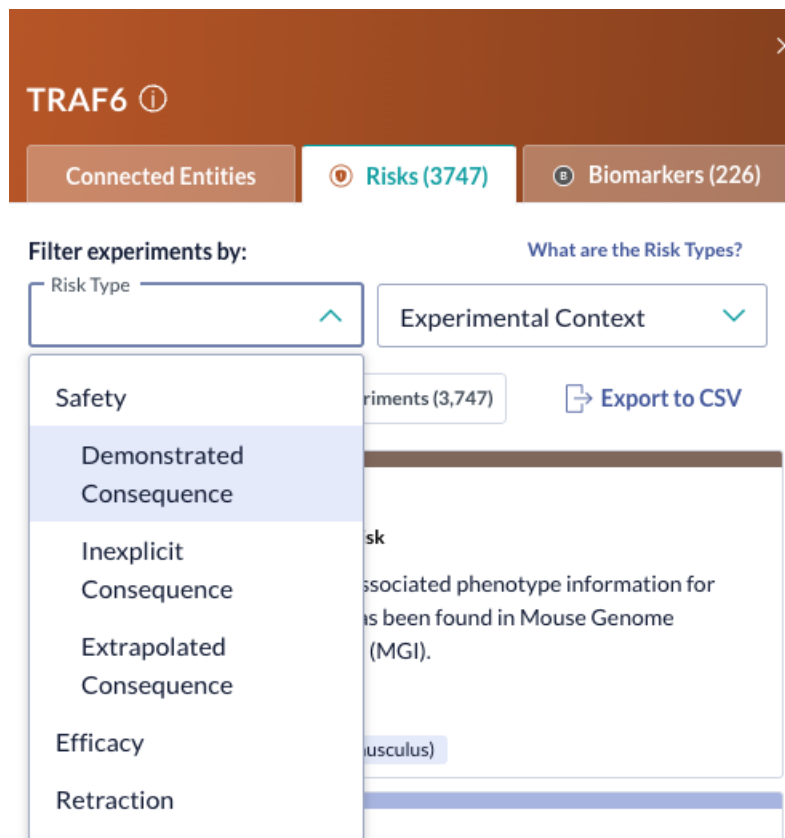
In 2024 we focused on increasing our coverage of closed access journal articles. With these efforts, we increased our data coverage by incorporating **6.8M new publications**, **12.6M unique experimental insights** and over **2.6M reagents**.

Take a deeper dive into these powerful updates

New safety risk subclasses

Defender flags potential experimental risks to facilitate feasibility assessments of experiments or projects. Flagged **safety risks** in particular are valuable to highlight evidence of toxic or harmful effects from similar experiment conditions and hypotheses. This year we improved our ML models to detect 1.5X more safety risks and to subclassify them into three groups:

1. **Demonstrated consequence:** proven experimental results from the literature
2. **Inexplicit consequence:** shift in homeostatic state but unclear outcome of that shift — warrants further investigation
3. **Extrapolated consequence:** authors provided educated guesses/predictions that were not explicitly validated by experiments

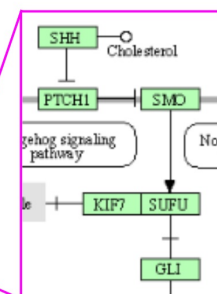


Available for the following app(s): **Navigator** and **Defender**. [Click here to learn more.](#)

Enhanced identification of candidate Biomarkers based on pathway analysis

Identifying novel or existing biomarkers related to a disease of interest is a challenging process. We have enhanced our **Biomarker** offering by integrating the **KEGG Pathways Database**, enabling Scientists to identify candidate biomarkers that exist within the same signalling pathway as their target. This new feature empowers Scientists to select biomarkers that can be used to detect changes to the target of interest following modulation.

Target	Biomarker Expression			Experiments	SHH
	↗	↘	Unspecified ⓘ		Minimum Degree of Separation ⓘ
GSK3B	173	18	16	54 Experiments	No evidence detected
PKA	17	6	3	98 Experiments	No evidence detected
CUL1	43	0	11	4 Experiments	No evidence detected
SUFU	9	17	1	489 Experiments	3
HHIP	13	46	9	417 Experiments	5
PTC	1	0	0	46 Experiments	No evidence detected
GPR161	1	2	0	134 Experiments	No evidence detected
KIF7	0	5	1	60 Experiments	4
CK1	0	0	0	0 Experiments	No evidence detected
SNO	0	0	0	0 Experiments	No evidence detected



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Protocol insights from knockdown experiments

The methods function in Architect enables scientists to build optimized experiment plans. We have expanded our

offering to include methods details for Knockdown experiments, empowering scientists to surface protocol information pertaining to RNAi experiments.

ASCEND

Architect

Search

My Projects

My Experiments

Saved Methods

Saved Results

Application

Knockdown

TLR4

Filters

Disease

Model

Tissue

Organism

Cell Type

Cell Line

Supplier

Company

Procurement

Previously Purchased

Commercially Available

Source

Database

Publication Dates

From 1984 To 2024

Grouped methods by product used

Found 85 experiments

Page 1 of 14

General Information

Preview figure

Experiment Information

Knockdown Strategy

Starting Material

Material Name

Species

Primary Material

Target Gene

RNAi Reagent

Concentration Quantity

Entities

siRNA

toll like receptor 4

Thermo Fisher Scientific | 514194

7 experiments

7 published

View Experiments

siRNA

TLR4 siRNA (m)

Santa Cruz Biotechnology | SC-40261

5 experiments

5 published

View Experiments

siRNA

SMARTpool: ON-TARGETplus TLR4 siRN

Dharmacon | L-008088-01-0005

4 experiments

4 published

View Experiments

siRNA

SMARTpool: ON-TARGETplus TLR4 siRN

Dharmacon | L-008088-01-0010

3 experiments

3 published

View Experiments

Experiment Information

Knockdown Strategy

Starting Material

Material Name

Species

Primary Material

Target Gene

RNAi Reagent

Concentration Quantity

Entities

transient

transient

transient

transient

SKOV-3 cells, HepG2 cells

CATH.a cells, N2a cells, J774 cells

THP-1 cells, RAW 264.7 cells

THP-1 cells, RAW 264.7 cells

Human

Mouse (mus musculus), Mouse (mus musculus)

Human, Mouse (mus musculus)

Human, Mouse (mus musculus)

TLR4

TLR4

TLR4

TLR4

toll like receptor 4

TLR4 siRNA (m)

SMARTpool: ON-TARGETplus TLR4 siRN

SMARTpool: ON-TARGETplus TLR4 siRN

Thermo Fisher Scientific | 514194

Santa Cruz Biotechnology | SC-40261

Dharmacon | L-008088-01-0005

Dharmacon | L-008088-01-0010

200 nM

-

-

-

TLR4, TICAM1, MYD88, +8

TLR4, MIRC1, NCL, +8

TLR4, AGER, TICAM1, +12

TLR4, TICAM1, ATG27, +12

Available for the following app(s): **Architect**. [Click here to learn more.](#)

Vendor-provided experiment conditions/methods

Many vendors provide detailed methods data on their website or datasheet, outlining the recommended steps and conditions to use those reagents/model systems most effectively in an experiment. These methods can include information such as recommended **storage conditions**, **sample preparation methods**, and experimental conditions such as **dilution concentrations**.

For products with vendor-provided details, users will see a that banner outlines the high-level catalog info and a link to the vendor page to learn more.

Additional methods available for this product

Vendor recommended concentration is 0.1 - 5 µg/ml. [View vendor page](#)

Individual Methods

Found 76 experiments

Page 1 of 19

Concentration

Incubation Time

Incubation Temperature

Tissue Processing

Preprint

bioRxiv (2023)

View Method Details

1:200

overnight

-

Paraffin-embedded

Publication

Developmental Dynam... (2020)

View Method Details

1:500

overnight

4°C

Frozen

Publication

J Cell Physiol (2020)

View Method Details

1:200

-

-

-

Publication

The EMBO Journal (2020)

View Method Details

1:600

-

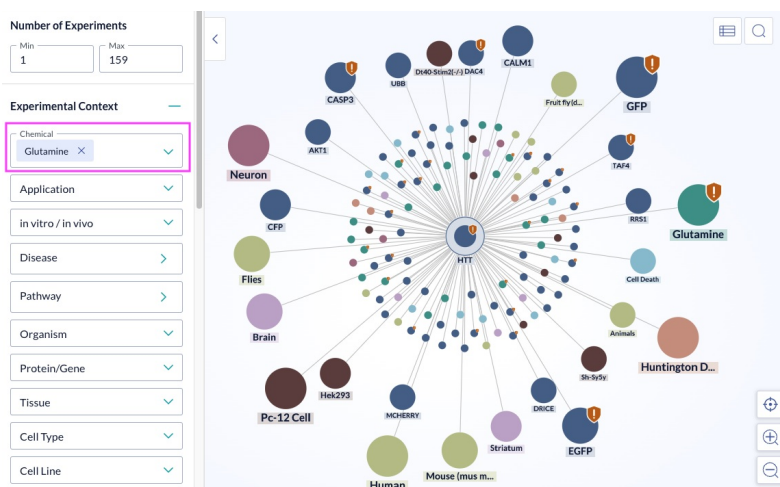
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Available for the following app(s): **Architect**. [Click here to learn more.](#)

New experimental context filter: chemicals

Experimental context filters, such as *Disease*, *Pathway*, or *Organism*, help users narrow down the evidence network and relevant biological connections. We've added a new *Chemicals* filter to enhance how scientists surface and discover relevant experimental data and chemical-specific evidence.



Available for the following app(s): **Navigator**. [Click here to learn more.](#)

Improved searching by species/organism in Selector

We restructured our **species/organism** data to simplify organization and search-ability of reagent and model system data. The organism filter enables you to specify the species/organism of interest from both experiments AND vendor-provided details. Click *Filter by Organism Reference* to specify the data source (i.e. vendor-provided or detected in the literature) to find the most relevant information.

The screenshot shows the Selector app interface. On the left, there's a sidebar with filters. The 'Organism' filter is selected and highlighted with a pink box. The main area displays a table titled 'Organism' with columns for 'Organism', 'Published Figures', and 'Supplier Figures'. The table lists various organisms and their corresponding figure counts.

Organism	Published Figures	Supplier Figures
Eukaryote	4.1M	1.8M
Animals	4M	1.8M
Chordates	3.9M	1.8M
Gnathostomata	3.9M	1.8M
Mammal	3.8M	1.8M
Primate	3.6M	1.4M
Simiiformes	3.6M	1.4M
Great apes	3.6M	1.4M

Available for the following app(s): **Selector**. [Click here to learn more.](#)

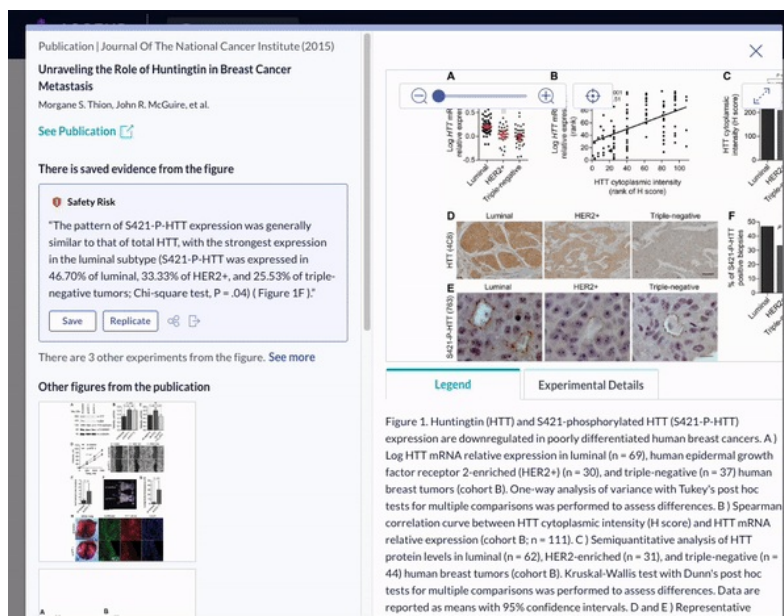
Access thousands of new papers from the Company of Biologists

Through our new partnership with the Company of Biologists we have expanded our data corpus with over 55k

new publications. This expansion enhances our platform's capabilities and data coverage across various areas of biomedical research, including oncology and cardiometabolic research.

Saving evidence in Navigator

Save and consolidate evidence of interest, such as publications, abstracts, and data from third-party sources (e.g. FDA, OMIM, MGI) directly to a **Saved Evidence** page. This simplifies the process of tracking relevant evidence across your searches so you can easily review them at a later time.



Available for the following app(s): **Navigator**. [Click here to learn more.](#)

Please note that access to these features and enhancements depends on what is available at your organization.