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

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

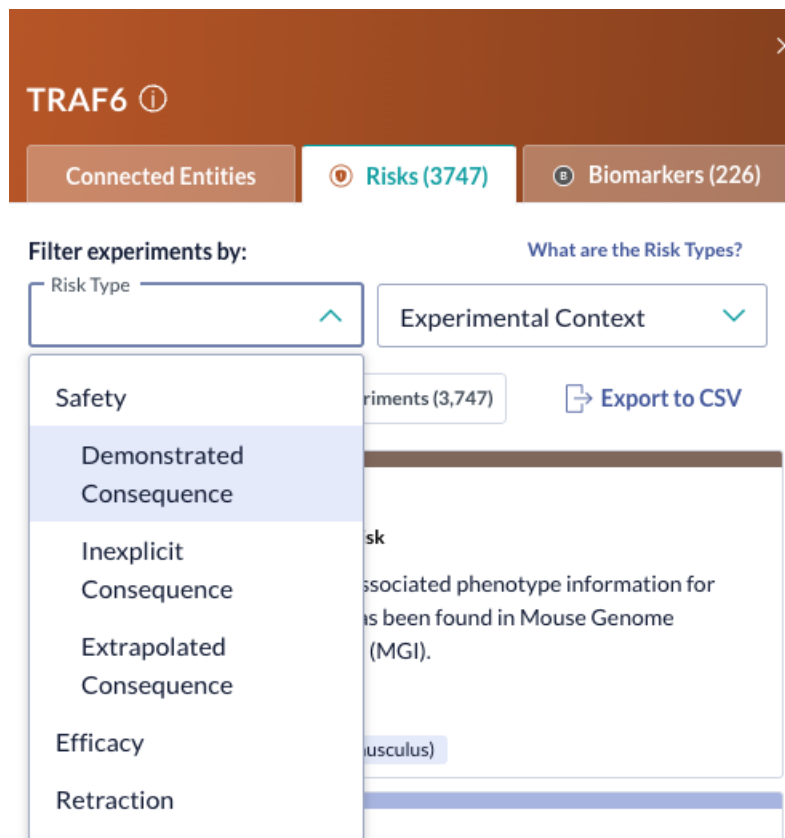## We expanded our data coverage

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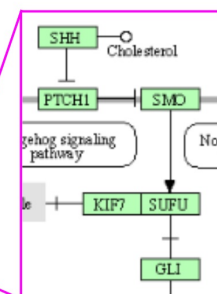
Available for the following app(s): **Navigator** and **Defender**. Click here to learn more.

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 ↗	↘	Unspecified ⓘ	Experiments	SHH 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

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

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.

Available for the following app(s): **Architect**. <u>Click here to learn more</u>.

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.
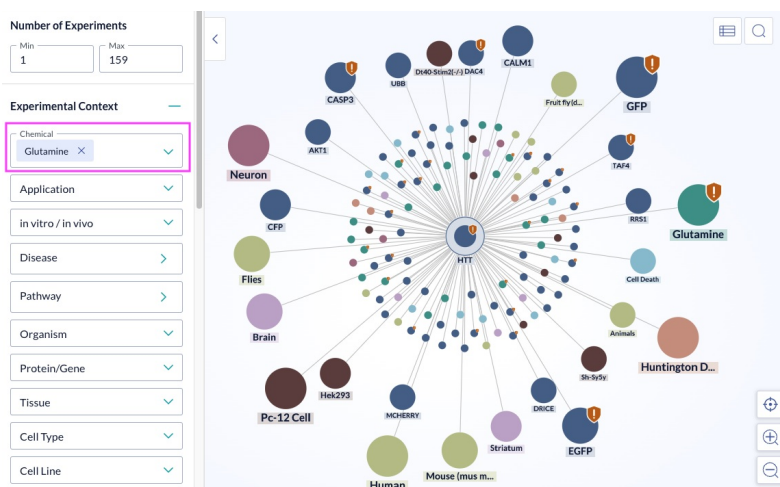

Available for the following app(s): **Architect**. <u>Click here to learn more</u>.

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.

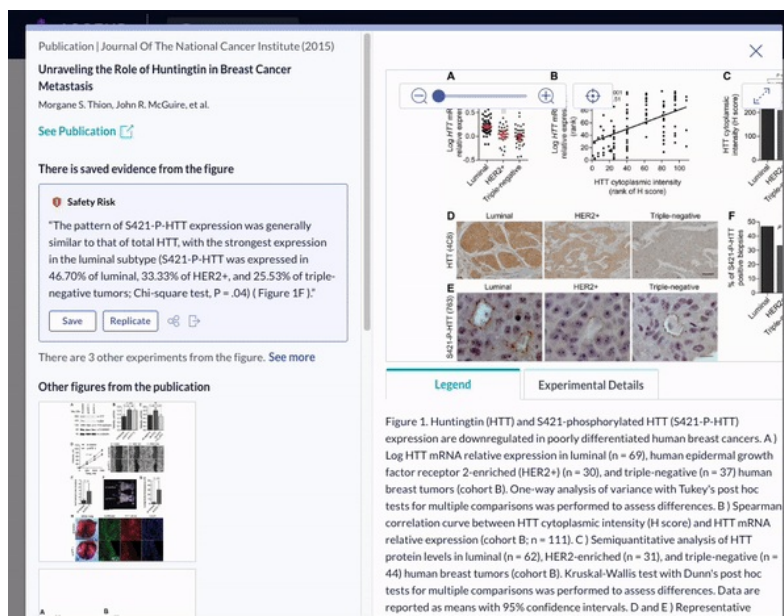Available for the following app(s): **Selector**. Click here to learn more.

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.