Pathway Studio v12.3 release, February 2020

Accessing and using Pathway Studio will be much more streamlined with the 12.3 Pathway Studio release. We will be implementing Elsevier's new approach to signing into all Elsevier products, which only requires a single account to access the entire Elsevier ecosystem.This also means our homepage will change, so any messages or information for users wil now be displayed in a banner at the top of the page.

In addition to easier access, this release includes an update to the baseline data – including improvements to ClinVar and genetic variant data as well as updates to the protein/gene dictionary. Also, in response to customer requests, we're including a new way to apply the MedScan search functionality to a pdf, text or xml document, helping users to identify important relationships that aren't already in Pathway Studio.

Baseline update to all databases

As with any update to the baseline data, new relationships have been added as well as additional curation of existing data that helps to improve the accuracy of the database. This means there are changes to the core data and customers can choose to re-run key data stored in their Project Folders (or not). Keep in mind when updating that some relationships may be lost and others added as a result of the update and additional curation.

Improvements to the baseline data include:

- ClinVar data:
    - 89K genetic variants (vs 34K in previous version)
    - 144K annotations (vs 68K in previous version)

Data for this release was produced by a new version of MedScan that, in addition to updates to the protein/gene dictionary and support for spelling variants, includes:

- Genetic variants:
    - 41K genetic variants are annotated (vs 31K)
    - 137K annotations extracted (vs 101K)
- Improved CellExpression relations for cell lines
- The protein/gene dictionary was updated
- Over 1500 new PS-relevent concepts were added from Emtree*
- Improvements to the Rare Diseases branch in the Pathway Studio ontology:
    - Orphanet** taxonomy was integrated and Orphanet IDs were assigned (where applicable)

*   For more information on Emtree, see (https://p.widencdn.net/rsbdhy/Emtree-release-notes-2020.01-January).
** For more information on Orphanet, see https://www.orpha.net/consor/cgi-bin/index.php
Note that due to Publisher restrictions, abstracts from 360 journals are no longer processed.

With this latest release, Pathway Studio now includes *12.2M relations* and over *2,300 pathways* to provide even greater insights to your biology research!

Identify new relations

With this release, we added a new function module, MedScan Information Extraction, which enables users to extract network relations from a paragraph of text, or from a document (XML, pdf, or text) saved locally or remotely online using a URL. The extracted network will be the same as that built using a network builder that is originally available within Pathway Studio. Users can export the network in the format of relation/entity tables or RNEF files. Please see the Supplementary Examples for the 'MedScan Information extraction' Module (page 3-5).

Access Pathway Studio more easily

Elsevier is implementing a new, streamlined approach to signing into all Elsevier products – with this system, you will only need one account to access the entire Elsevier ecosystem, minimizing the number of sign in credentials you'll need to remember. The system is already in place on many Elsevier products and will be enabled on Pathway Studio with the 12.3 release.

For more information, please see https://service.elsevier.com/app/home/supporthub/elsevieraccess/.

Easy to spot messages

We've moved the place you can find important information on releases, other updates or training materials from the login page to a banner at the top of the screen – simply click on the banner to find out more.

Supplementary Examples for the 'MedScan Information extraction' Module

Example 1

Extract network and relationship from plain text

MedScan Information extraction

Information Source: ○ Browse a local file

○ URL of a remote document

● Plain text

Enter text: The altered AMP-activated protein kinaseα2 activity, with obesity and rosiglitazone treatment, corresponded to changes in the phosphorylation state of its target protein, acetyl-CoA carboxylase, which was decreased with obesity but restored to the level of lean controls after rosiglitazone administration.
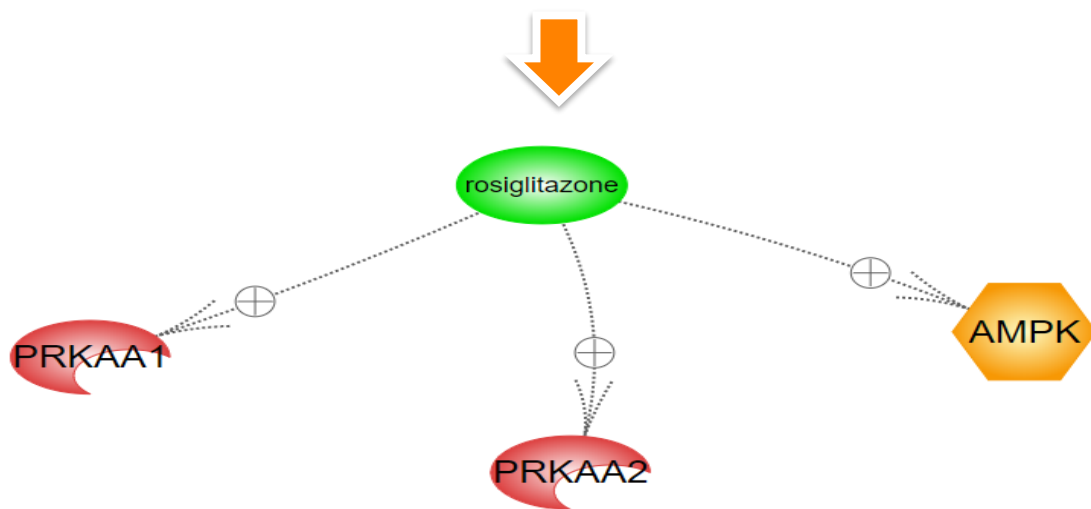
Result Type: Extract Network

Submit   Stop

ACACA ◄······· PRKAA2

Example 2

Extract network and relationship using a URL

MedScan Information extraction

Information Source: ○ Browse a local file

◉ URL of a remote document

○ Plain text

Enter URL: https://www.ncbi.nlm.nih.gov/pubmed/16118254

Result Type: Extract Network ▼

Submit   Stop

Example 3

Extract network and relationship from local file (PDF file, xml file, text file…)

MedScan Information extraction

Information Source: ● Browse a local file
　　　　　　　　　　○ URL of a remote document
　　　　　　　　　　○ Plain text

Enter file name: `C:\fakepath\ajpendo.00096.2005.pdf`　　Browse...

Result Type: Extract Network　　　　　　　　　　　　▼

Submit　　Stop