

THOMSON REUTERS INTEGRITY

QUICK GUIDE SERIES: No. 19



RETRIEVING PUTATIVE AND PRECEDENTED TARGETS IN THOMSON REUTERS INTEGRITY

Do any of these questions sound familiar to you?

What potential targets are there for this indication? What new potential targets have been reported against my disease? Is this target druggable? Are there any new targets in my therapeutic area? Has anything changed/new appeared against my target?

The Genomics Knowledge Area within *Integrity* allows researchers to identify at an early stage potential targets that may be related to a given disease. These putative targets provide an early insight to identify new opportunities for drug development within an indication and to explore new targets and their potential role in biological pathways for a disease.

This step-by-step guide will show you how to:

- Search for genes linked to a specific condition and relate this information to a precedent target
- Link from *Integrity* records to *MetaCore™* records
- Find related information on precedent targets for your condition of interest

EXAMPLE SCENARIO: SEARCHING FOR TARGETS IN THOMSON REUTERS INTEGRITY

A scientist working in target identification would like to find information about genes linked to asthma. She would then like to find out which targets have been validated for treatment with therapeutic compounds.

1. RETRIEVE INFORMATION ABOUT GENES AND THEIR RELATIONSHIP TO A DISEASE

- In *Integrity* you can retrieve information about genes and their relationship to a disease in the Genomics Knowledge Area. If you are interested in genes that have been experimentally linked to a specific condition, you can set up your search in the advanced search form using the Condition field (FIGURE 1).

TIPS:

- The Targets & Pathways Knowledge Area contains information on precedent targets with links to the drugs that act via the target. The Genomics Knowledge Area contains information on putative targets and associated conditions.
- *Integrity* users can search by sequence in the Genomics Knowledge Area, simply select the sequence field and enter a portion of a sequence, for example, `cttctgtgtgtgcacatgtgtaatacatatctgggatcaaaagctatctataaaagctcttgattctgtgtgggtcaaacacatttcaa`
- You retrieve a list of genes showing the Gene Symbol, Gene Name, Organism, Condition, and Links – where you can click straight through to the Entrez Gene and KEGG webpages containing the corresponding information for the gene.
- In the last column of the table you can find links to *MetaCore* (FIGURE 2). *MetaCore* is a database that allows users to do pathway analysis and delivers high-quality biological systems content.
- Clicking on the *MetaCore* link takes you through to the portal. If you already have access you can log on to display the *MetaCore* gene record (FIGURE 3).
- For more information on *MetaCore* visit: <http://thomsonreuters.com/diseaseinsight>

FIGURE 1

Gene Symbol	Gene Name	Organism	Condition	Links	MetaCore
ADBR2	adrenergic, beta-2-, receptor, surface	Homo sapiens (Human)	Asthma Obesity	Entrez Gene 111 KEGG 111	ADBR2

FIGURE 2

FIGURE 3



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2. CROSS-LINK YOUR GENOMICS INFORMATION WITH THE RELATED PRECEDED TARGETS

- Return to the original table of genes linked to asthma. In *Integrity* the gene records in the Genomics Knowledge Area are not linked to drugs. To see those targets that have at least one compound with a mechanism that acts on it you can link through to the Targets & Pathways Knowledge Area. From the table of Genes click the Options pull-down menu and select All Related Information via Quick Search (FIGURE 4).
- From the Quick Search results display click on the Targets & Pathways Knowledge Area to see the precedented targets (those targets with a compound Mechanism of Action that acts on it). To see the full records click on Options and select Full Records (FIGURE 5):

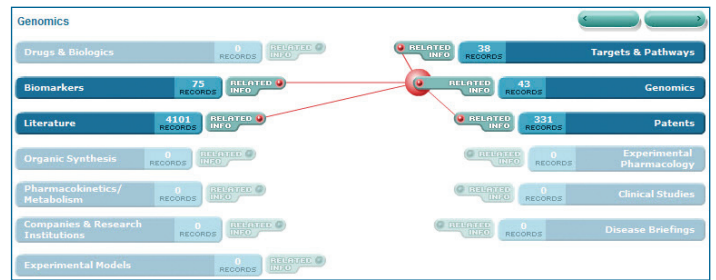


FIGURE 4



FIGURE 5



FIGURE 6

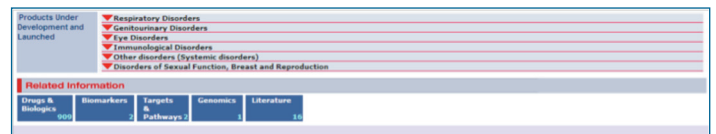


FIGURE 7

TIP:
In the Genomics Knowledge Area the records are combined for genes and proteins. In Targets & Pathways there are separate records for gene and protein targets.

- The Target record contains information about the target and the related conditions. In the Condition (Status) section you can expand the condition tree to see the status of the different conditions with regards to the development phase of the associated drug (FIGURE 6).

TIP:
For each condition associated with a target the status can be:

- Exploratory:** a target associated with one or more products undergoing Biological Testing for the condition in question
- Candidate:** a target associated with products previously reported to be under active development in preclinical or clinical phases but where the products are no longer under active development for the condition in question.
- Validated:** a target associated with the mechanism of action of one or more products under active development in preclinical or clinical phases or registered or launched for the condition in question.

- At the bottom of the record you can see links to products that are under active development and Related Information links to the other Knowledge Areas of *Integrity* (FIGURE 7).