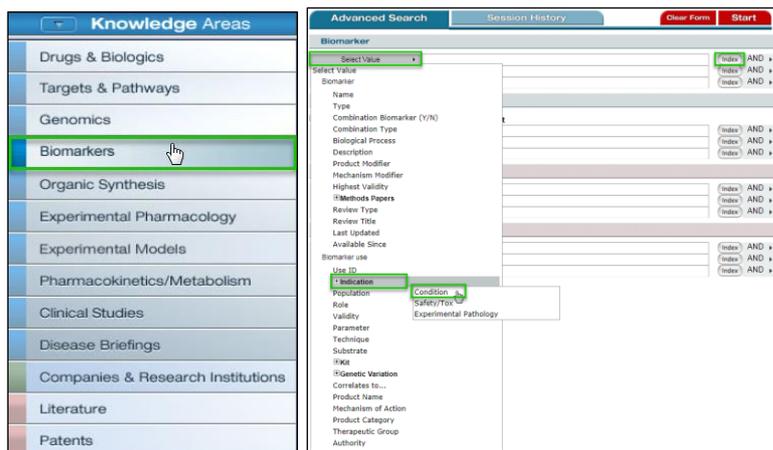


Find targets that are associated with new biomarkers

Could emerging disease biomarkers represent novel drug targets?

Biomarker Module of Clarivate Analytics Integrity enables you to find recently added biomarkers associated with your disease of interest and quickly verify whether they are known drug targets. **Example Scenario:** you want to see up-to-date information related to biomarkers associated with Crohn's Disease and investigate which, if any, are established drug targets.

Find recently added biomarkers related to a specific disease:

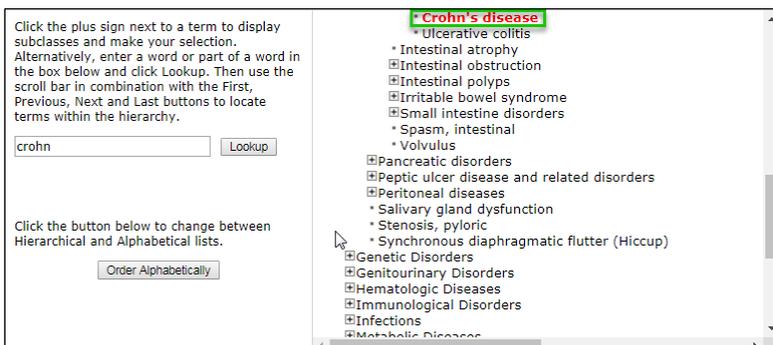


To find recently added biomarkers related to a specific disease, go to the **Biomarkers** knowledge area.

Click **Select Value** in the Biomarker section and choose **Indication** -> **Condition** from the dropdown menu.

Click **Index** to the right of this field.

In the pop up window that appears, type **"crohn"** into the text box on the left side of the window and click **Lookup**. Select **Crohn's disease** in red on the right-hand side of the window.

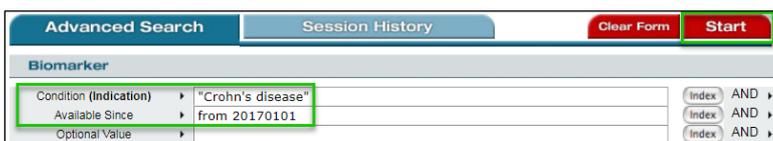


Tip:

- You can click **Order Alphabetically** once you've searched for the term in an index to see all the results as an alphabetic list. You can then select multiple items on this list to be used as search terms.

Next, click **Optional Value** in the **Biomarker** section and choose **Available Since** from the dropdown menu.

Click **Index** to the right of this field to see the date format used in *Integrity*. In the search form, type "from 20170101" to retrieve biomarker records added to the database since January 1st, 2017.



Now with both fields entered, click the **Start** button at the top of the page to begin the search.

***Tip:** Integrity includes multi-markers, such as gene signatures or protein panels, where a combination of components is used as biomarker. You can exclude multi-markers from your search results by selecting **Combination Biomarker (Y/N)** from the menu of optional values and typing "n" (for "No") into the search form.*

Working with your data:

Records Retrieved: Records 1 to 19 of 19 retrieved

Biomarkers Search Results

Query: Condition (Indication) = "Crohn's disease" AND Available Since = from 20170101

Biomarker Name	Type	Use Indication Ty	Export Center	Source
Anti-proline rich protein 13 antibodies Anti-PRR13 antibodies; Anti-proline rich 13 antibodies	Proteomic	Major Condition Gastrointestinal Disor All	Integrity Reports Biomarker List Biomarker Full Record Biomarker Use Record Biomarker List with KIRs	EME EXP ESH LSH RIA All Ref Pat KIRs
Anti-transcription elongation factor A protein-like 1 antibodies Anti-TCEAL1 antibodies; Anti-transcription elongation factor A like 1 antibodies	Proteomic	Major Condition Gastrointestinal Disor All	Kit Development Status List All Related Information via Quick Search Printer Friendly Format	EME EXP ESH LSH RIA All Ref Pat KIRs
Chromosome locus 12p21 12p21	Genomic	Major Condition Gastrointestinal Disor All		EME EXP ESH LSH RIA All Ref Pat KIRs
Laminin subunit beta 2 pseudogene 1 LAM2P1	Genomic	Major Condition Gastrointestinal Disorders All		EME EXP ESH LSH RIA All Ref Pat KIRs
Long intergenic non-protein coding RNA 1430 LINC01430	Genomic	Major Condition Gastrointestinal Disorders All		EME EXP ESH LSH RIA All Ref Pat KIRs

Biomarkers search results are presented in a summary **Biomarker Table** showing the number of uses at each **Validity** phase, grouped by **Major Condition**. To see more details, click on the **Options** menu and select **Biomarker List**.

The **Biomarker List** view shows more details about each biomarker use, including the breakdown of source references and patents, depending on the evidence they contain.

Records Retrieved: Records 1 to 19 of 19 retrieved

Biomarkers Search Results

Query: Condition (Indication) = "Crohn's disease" AND Available Since = from 20170101

Anti-proline rich protein 13 antibodies

Population	Role	Technique (Substrate)	Parameter	Validity (Authority)	Sources
All	Diagnosis	FIA / Flow cytometry (Serum)	NA	Early Studies In Humans	Ref 0 0 1 1
All	Differential Diagnosis	FIA / Flow cytometry (Serum)	NA	Early Studies In Humans	Ref 0 0 1 1

Anti-transcription elongation factor A protein-like 1 antibodies

Population	Role	Technique (Substrate)	Parameter	Validity (Authority)	Sources
All	Diagnosis	FIA / Flow cytometry (Serum)	NA	Early Studies In Humans	Ref 1 0 0 1
All	Differential Diagnosis	FIA / Flow cytometry (Serum)	NA	Early Studies In Humans	Ref 0 0 1 1

Tip:

- You can find full definitions for **validity** phases, **source evidence** and other fields in the **Biomarker Frequently Asked Questions (FAQs)** document. There is a link to the FAQs from the **Learning Center** panel, located on the bottom left corner of the *Integrity* homepage or from the Biomarkers Advanced Search page by clicking the link in the left-hand column.

Filter by Statistics

- Biomarker Type
 - Highest Validity
 - Combination Type
 - Component Biomarker
 - Component Of
 - Biological Process
 - Product Modifier
 - Mechanism Modifier
 - Method Papers (Y/N)
- Biomarker Use
 - Indication Type
 - Major Condition
 - Safety/Tox
 - Experimental Pathology
 - Population
 - Role
 - Technique
 - Substrate
 - Genetic Variation Type
 - Parameter
 - Validity
 - Scientific Authority
- Source Evidence
- Biomarker Kit
 - Kit Name
 - Organization
 - Status
 - Country / Area
 - Regulatory Authority

Source Evidence

Condition (Indication) = "Crohn's disease" AND Available Since = from 20170101

at least 1 + source

+ sources only

- sources only

at least 1 - source

Check All 0 2 4 6 8 10 12 14 16 18 20

Display Options: Horizontal Display, Vertical Display, Pie Chart Display

View Subset(s), Print Chart, Help

Filter by **Source Evidence** and click on the bar for "at least 1 + source" to include only those results where a significant association ($p < 0.05$) has been found between biomarker and condition in at least one published reference.

Verifying which biomarkers are known drug targets:

Records Retrieved: Records 1 to 14 of 14 retrieved

Biomarkers Search Results

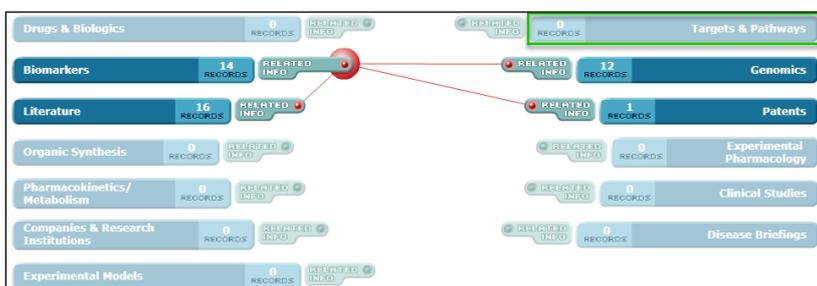
Query: Condition (Indication) = "Crohn's disease" AND Available Since = from 20170101

Biomarker Name	Type	Use Indication Ty	Export Center	Source
Anti-transcription elongation factor A protein-like 1 antibodies	Proteomic	Major Condition Gastrointestinal Disor All	Integrity Reports Biomarker Table Biomarker Full Record Biomarker Use Record Biomarker List with KIRs	EMEs in Ref 1 0 0 1
Chromosome locus 12p21	Genomic	Major Condition Gastrointestinal Disor All	Kit Development Status List All Related Information via Quick Search	EMEs in Ref 1 0 0 1
Laminin subunit beta 2 pseudogene 1	Genomic	Major Condition Gastrointestinal Disorders All	Printer Friendly Format	EMEs in Ref 1 0 0 1

To review further information associated with these biomarkers, you can open the **Options** pull down menu and click **All Related Information via Quick Search**. The display will then allow you to view the information related to your Biomarkers results in the other Knowledge Areas of *Integrity*.

If any of the biomarkers is a known drug target the display will show related **Targets&Pathways** records which can be explored to find details of related drugs, the conditions (diseases or disorders) those drugs are intended to treat, their developmental status, which organizations are involved, etc.

If you have any questions please contact us at: DTStraining@clarivate.com



In this example, there are no related **Targets&Pathways** records, suggesting that the new biomarkers present potential white space for further investigation.

To be notified of any new biomarkers that match your search query, open **Options** pulldown menu and click **Save Query**. Fill in the pop up box to choose the frequency of e-mail updates.

Tip:

- Using **All Related Information via Quick Search** from the **Biomarker Table** or **Biomarker List** display will retrieve all information related to the full biomarker records, including all their uses.

To retrieve only the information related to a specific subset of biomarker uses, open the **Options** pulldown menu and click **Biomarker Use Record** to change the display. Now when you click on **All Related Information via Quick Search** from the **Biomarker Use Record** display, the results will be directly relevant to only those **Biomarker Use Record**, for example:

- **Literature:** generate a highly relevant reading list which can be exported to reference management software.

- **Patents:** see which organizations are patenting a biomarker use, potentially as a future Companion Diagnostic.

- **Drugs & Biologics:** explore drugs used in biomarker studies to see their mechanism of action, development status, which organizations are involved etc.

- **Clinical Studies:** read specially written summaries of the outcomes of drug trials.

