

# 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:

**Knowledge Areas**

- Drugs & Biologics
- Targets & Pathways
- Genomics
- Biomarkers**
- Organic Synthesis
- Experimental Pharmacology
- Experimental Models
- Pharmacokinetics/Metabolism
- Clinical Studies
- Disease Briefings
- Companies & Research Institutions
- Literature
- Patents

**Advanced Search** Session History Clear Form Start

**Biomarker**

Select Value

Biomarker

Name

Type

Combination Biomarker (Y/N)

Combination Type

Biological Process

Description

Product Modifier

Mechanism Modifier

Highest Validity

Methods Papers

Review Type

Review Title

Last Updated

Available Since

Use ID

Indication

Condition

Population

Role

Validity

Parameter

Technique

Substrate

IKK

Genetic Variation

Correlates to

Product Name

Mechanism of Action

Product Category

Therapeutic Group

Authority

Click the plus sign next to a term to display subclasses and make your selection. Alternatively, enter a word or part of a word in the box below and click Lookup. Then use the scroll bar in combination with the First, Previous, Next and Last buttons to locate terms within the hierarchy.

crohn

Lookup

Click the button below to change between Hierarchical and Alphabetical lists.

Order Alphabetically

**Crohn's disease**

- \* Ulcerative colitis
- \* Intestinal atrophy
- \* Intestinal obstruction
- \* Intestinal polyps
- \* Irritable bowel syndrome
- \* Small intestine disorders
- \* Spasm, intestinal
- \* Volvulus
- \* Pancreatic disorders
- \* Peptic ulcer disease and related disorders
- \* Peritoneal diseases
- \* Salivary gland dysfunction
- \* Stenosis, pyloric
- \* Synchronous diaphragmatic flutter (Hiccup)
- \* Genetic Disorders
- \* Genitourinary Disorders
- \* Hematologic Diseases
- \* Immunological Disorders
- \* Infections
- \* Metabolic Diseases

**Advanced Search** Session History Clear Form Start

**Biomarker**

Condition (Indication) "Crohn's disease"

Available Since from 20170101

Optional Value

Index AND

Index AND

Index AND

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 1<sup>st</sup>, 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) = "C9orf3439.s disease" AND Available Since = from 2017/01

| Biomarker Name  | Type      | Use Indication Type  | Export Center   | Source   |
|---|-----------|--|---|--|
| <div><div><div>Anti-proliferation rich protein 1.3 antibodies</div><div>Anti-PRL1.3 antibody; Anti-proliferation rich 1.3 antibodies</div></div></div>                                      | Proteomic | <div><div>Major Condition</div><div>Gastrointestinal Disorders</div><div>All</div></div> | <div><div>Integrity Reports</div><div>Biomarker List</div><div>Biomarker Full Record</div><div>Biomarker Use Record</div><div>Biomarker List with Kits</div><div>KIT Development Status List</div><div>All Related Information via Quick Search</div><div>Printer Friendly Format</div></div> | <div><div>EMC</div><div>EXP</div><div>ESH</div><div>LSH</div><div>R/A</div><div>All</div><div>Ref</div><div>Pat</div><div>Kits</div></div> |
| <div><div><div>Anti-transcription elongation factor A protein like 1 antibodies</div><div>Anti-CEALL antibodies; Anti-transcription elongation factor A like 1 antibodies</div></div></div> | Proteomic | <div><div>Major Condition</div><div>Gastrointestinal Disorders</div><div>All</div></div> | <div><div>EMC</div><div>EXP</div><div>ESH</div><div>LSH</div><div>R/A</div><div>All</div><div>Ref</div><div>Pat</div><div>Kits</div></div>  |  |
| <div><div><div>Chromosome locus 12p21.1p21.1</div></div></div>  | Genomic   | <div><div>Major Condition</div><div>Gastrointestinal Disorders</div><div>All</div></div> | <div><div>EMC</div><div>EXP</div><div>ESH</div><div>LSH</div><div>R/A</div><div>All</div><div>Ref</div><div>Pat</div><div>Kits</div></div>  |  |
| <div><div><div>Lensmin subunit beta 2 pseudogene 1</div><div>LINC0271</div></div></div>   | Genomic   | <div><div>Major Condition</div><div>Gastrointestinal Disorders</div><div>All</div></div> | <div><div>EMC</div><div>EXP</div><div>ESH</div><div>LSH</div><div>R/A</div><div>All</div><div>Ref</div><div>Pat</div><div>Kits</div></div>  |  |
| <div><div><div>Long interspersed non-protein coding RNA 1430</div><div>LINC01430</div></div></div>  | Genomic   | <div><div>Major Condition</div><div>Gastrointestinal Disorders</div><div>All</div></div> | <div><div>EMC</div><div>EXP</div><div>ESH</div><div>LSH</div><div>R/A</div><div>All</div><div>Ref</div><div>Pat</div><div>Kits</div></div>  |  |

Records Retrieved

Records 1 to 19 of 19 retrieved

Options

Markers Search Results

Query + Condition (Indication) = "Cotnam33 disease" And Available Since = from 20170101

Anti-aroline-rich protein 1.2 antibodies

[View References](#)

[View Profile](#)

| Crohn's disease | Population Role        | Technique (Substrate)        | Parameter | Validity (Authority)    | Sources | + + + + + | All |   |   |                           |
|-----------------|------------------------|------------------------------|-----------|-------------------------|---------|-----------|-----|---|---|---------------------------|
| All             | Diagnosis              | FLA / Flow cytometry (Serum) | NA        | Early Studies in Humans | Ref     | 0         | 0   | 1 | 1 | <a href="#">View Link</a> |
| All             | Differential Diagnosis | FLA / Flow cytometry (Serum) | NA        | Early Studies in Humans | Ref     | 0         | 0   | 1 | 1 | <a href="#">View Link</a> |

Anti-transcription elongation factor A protein like 1 antibodies

[View References](#)

[View Profile](#)

| Crohn's disease | Population Role        | Technique (Substrate)        | Parameter | Validity (Authority)    | Sources | + + + + + | All |   |   |                           |
|-----------------|------------------------|------------------------------|-----------|-------------------------|---------|-----------|-----|---|---|---------------------------|
| All             | Diagnosis              | FLA / Flow cytometry (Serum) | NA        | Early Studies in Humans | Ref     | 1         | 0   | 0 | 1 | <a href="#">View Link</a> |
| All             | Differential Diagnosis | FLA / Flow cytometry (Serum) | NA        | Early Studies in Humans | Ref     | 0         | 0   | 1 | 1 | <a href="#">View Link</a> |

**Source Evidence**

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

**Filter by Statistics**

**BIOMARKER**

- Biomarker Type
- High Validity
- Combination Type
- Component Biomarker
- Component Of
- Biological Process
- Product Modifier
- Mechanism Modifier
- Method Papers (Y/N)

**Indication Type**

- Major Condition
- Condition
- Safety/Tox
- Experimental Pathology
- Population
- Role
- Technique
- Substrate
- Genetic Variation Type
- Parameter
- Validity
- Scientific Authority**

**Source Evidence**

**BIOMARKER KEY**

- Kit Name
- Organization
- Status
- Country / Area
- Regulatory Authority

**Display Options**

- Horizontal Display
- Vertical Display
- Pie Chart Display

**View Subset(s)**

**Print Chart**

**Help**

**Source Evidence**

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

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. References can be supporting, conflicting or equivocal, depending on the evidence they contain.

**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 **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

Anti-transcription elongation factor A protein-like 1 antibodies

Crohn's disease

| Population Role | Technique (Substrate)        | Parameter |
|-----------------|------------------------------|-----------|
| All Diagnosis   | FIA / Flow cytometry (Serum) | NA        |

Chromosome locus 12p21

| Population Role | Technique (Substrate) | Parameter |
|-----------------|-----------------------|-----------|
| All Risk Factor | Genotyping (DNA)      | NA        |

Laminin subunit beta 2 pseudogene 1

| Population Role | Technique (Substrate) | Parameter |
|-----------------|-----------------------|-----------|
| All Risk Factor | Genotyping (DNA)      | NA        |

Options

Save Query

Keep Me Posted

Export Center

Integrity Reports

Biomarker Table

Biomarker Full Record

Biomarker Use Record

Biomarker List with Kits

KID Development Status List

All Related Information via Quick Search

Printer Friendly Format

Validity (Authority)

Early Studies in Humans

Show References

Show Patents

Sources

+ 41

- All

Ref

1

0

0

1

View List

Sources

+ 41

- All

Ref

1

0

0

1

View List

Show References

Show Patents

Sources

+ 41

- All

Ref

1

0

0

1

View List

Show References

Show Patents

Sources

+ 41

- All

Ref

1

0

0

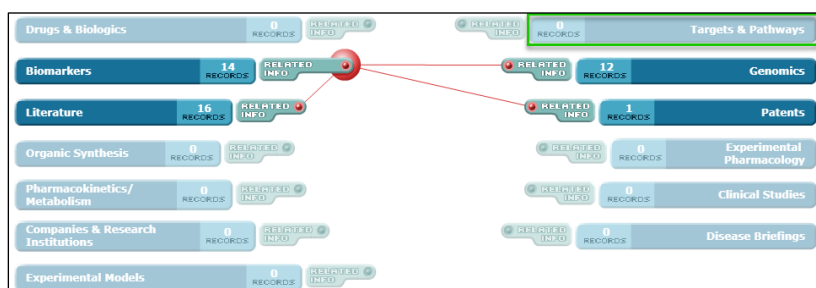
1

View List

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](mailto: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.

|  |  |
|--|--|
| Options                                  | Biomarker Use Record   |
| Save Query                               | Biomarker: Anti-transcription elongation factor A proteins like 1 antibodies   |
| Keep Me Posted                           | Use ID: 2024957  |
| Export Center                            | Summary  |
| Integrity Reports                        | Role: Diagnosis  |
| Biomarker Table                          | Indication Type: Condition   |
| Biomarker Full Record                    | Indication: Crohn's disease  |
| Biomarker Use Record                     | Population: All  |
| Biomarker List with KRs                  | Technique: FIA/Flow cytometry  |
| Kit Development Status List              | Substrate: Serum   |
| All Related Information via Quick Search | Parameter: NA  |
| Printer Friendly Format                  | Validity: Early Studies in Humans  |
|  | Sources: Refs • Identification of novel serum biomarkers for prediction of clinical course in patients with ulcerative colitis |
|  | Linked Uses  |
|  | Related Information  |
|  | Literature   |

#### 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.

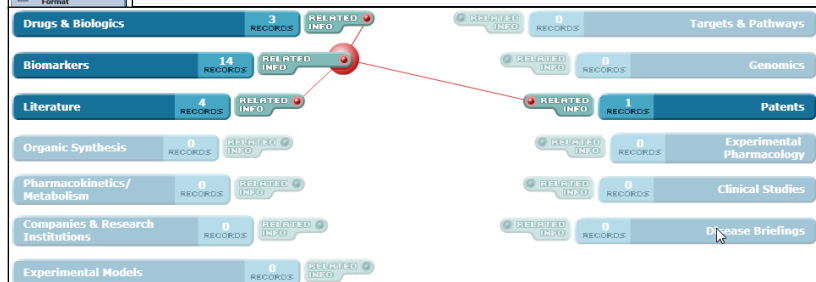
To retrieve only the information related to a specific subset of biomarker uses, open the **Options** pulldown menu and click **Biomarker Use Record** to change the display. Now when you click on **All Related Information via Quick Search** from the **Biomarker Use Record** display, the results will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



|   |  |
|---|--|
| Biomedical Literature List  |  |
| <p>Vancamelbeke, M.; Vanuytsel, T.; Farre, R.; et al. <a href="#">PubMed</a> <a href="#">crossRef</a> <a href="#">Web of Science Record</a> <a href="#">Web of Science Related Records</a></p> <p><a href="#">OpenURL</a><br/>Full Text</p> <p>Genetic and transcriptomic bases of intestinal epithelial barrier dysfunction in inflammatory bowel disease<br/>Inflamm Bowel Dis 2017, 23(10): 1718</p> <p>RELATED INFORMATION<br/>GENOMICS   BIOMARKERS   TARGETS &amp; PATHWAYS</p> |  |
| <p>Hamanaka, S.; Nakagawa, T.; Hiwasa, T.; et al. <a href="#">OpenURL</a><br/>Full Text</p> <p>Identification of novel serum biomarkers for prediction of clinical course in patients with ulcerative colitis<br/>Dig Dis Week (DDW) (May 6-9, Chicago) 2017, Abstr Mo1770</p> <p>RELATED INFORMATION<br/>BIOMARKERS</p>  |  |