

Sequence search

Cortellis Drug Discovery Intelligence

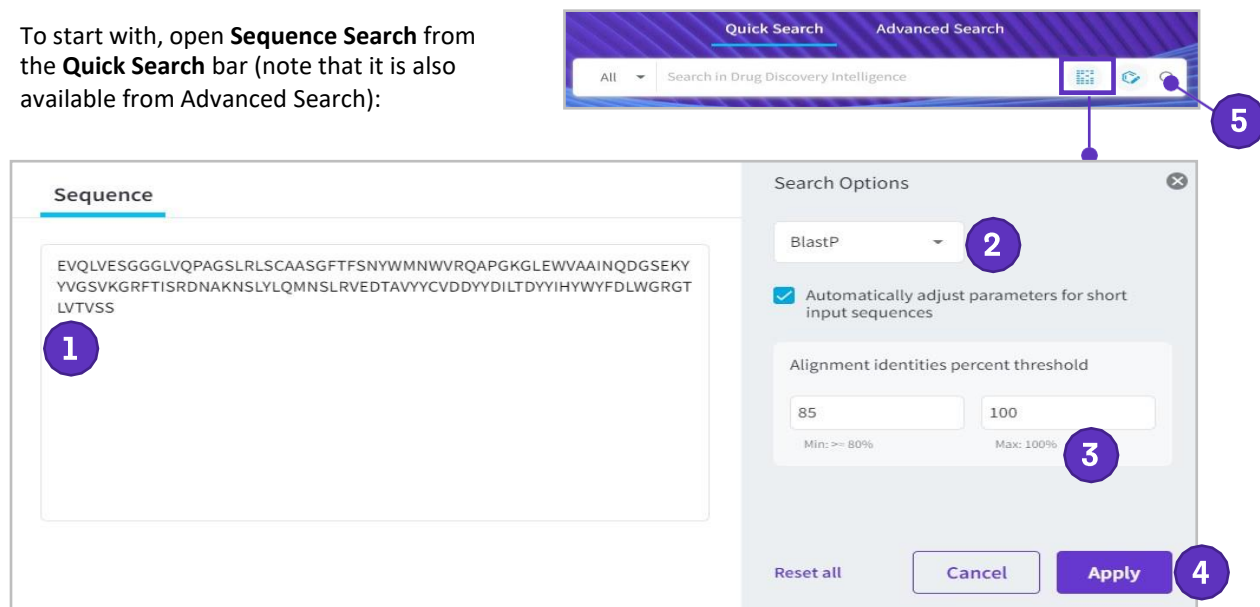
Use sequence search to:

- Find products with similar sequences to yours
- Understand competitive landscape around your sequence
- Benchmark your candidate's activity against those with similar sequences

In this example we've isolated neutralizing antibodies against IL-17 derived from mice immunized with IL17 antigens. We'd like to know if there are other antibodies with a similar sequence, and what Conditions are associated with these antibodies.

1. Find products with similar sequences to yours

To start with, open **Sequence Search** from the **Quick Search** bar (note that it is also available from Advanced Search):



The screenshot shows the 'Sequence Search' interface. At the top, there is a 'Quick Search' bar with a dropdown menu set to 'All' and a search input field. A callout '5' points to the search icon in the top right. Below the search bar, there is a 'Sequence' window with a text area containing a protein sequence: EVQLVESGGGLVQPGASLRSLSCAASGFTFSNYWMNWVRQAPGKLEWVAAINQDGSEKY YVGSVKGRFTISRDNALNSLYLQMNSLRVEDTAVYYCDDYYDILTYYIHYYFDLWGRGT LTVSS. A callout '1' points to this text area. To the right of the sequence window is a 'Search Options' panel. It has a dropdown menu set to 'BlastP' with a callout '2'. Below this is a checkbox labeled 'Automatically adjust parameters for short input sequences' which is checked. Underneath is a section for 'Alignment identities percent threshold' with two input fields: '85' and '100'. Below these fields are labels 'Min: >= 80%' and 'Max: 100%'. A callout '3' points to the '100' field. At the bottom of the 'Search Options' panel are three buttons: 'Reset all', 'Cancel', and 'Apply'. A callout '4' points to the 'Apply' button. A callout '5' also points to the search icon in the top right of the interface.

1. Paste your sequence into the sequence window
2. Select **BlastP** for amino acid sequences or **BlastN** for nucleotide sequences
3. Set your preferred alignment percentage threshold
4. Click **Apply** to load your sequence into Quick Search
5. Click on the Search icon to run your search.

Note: Searching in **All** areas will retrieve products with similar sequences as well as records in other knowledge areas that are associated with those products

Go to **Drugs & Biologics** to see your results:

Product List

Development Status

Milestones

Overview

?

Entry Number

1111185

Preclinical

AdiL17-sF

614

98.42

100

127

4.05e-82

Variable heavy chain (VH)

Antibody Gene Therapy

Anti-IL-17A (Interleukin-17A)

East China Normal University (ECNU) (Originator)

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

614

98.42

100

127

4.05e-82

Variable heavy chain

Human Monoclonal Antibodies

Anti-IL-17 (Interleukin-17)

Maruho

?

Entry Number

418942

Launched - 2015

AIN-457

Evaluate your results according to:

Score: Numerical value describing the overall quality of the alignment

% Align: The extent to which the sequences have the same residues at the same position in the alignment

% Query: Percentage of the query length that is included in the aligned segments

Length: Length of the target sequence that was matched with the sequence of interest

E-value: Expected number of times that the alignment score would appear randomly

Sequence: Name of the sequence matching the query

Tip: To visualize the sequence alignment, click the **SEQ** button, copy the sequence of interest, and paste it into an alignment analysis tool like **NCBI**:

Sequence of 1111185

Variable heavy chain (VH)

EVQLVESGGGLVQPGGSLRLSCAASGFTFSNYWMNWRQAPGKGLEWVAAINQDGSSEYVYGVSKGRTISRDNAKNSLYLQMNSLRVEDAVYYCVRDYYDILTDYYIHYYWF
DLWGRGTLTVSS

Copy

Variable light chain (VL)

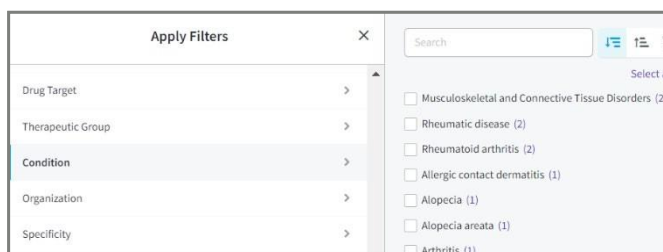
EIVLTQSPGTLSTLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQYQGSSPCTFGQGTREIKR

Copy

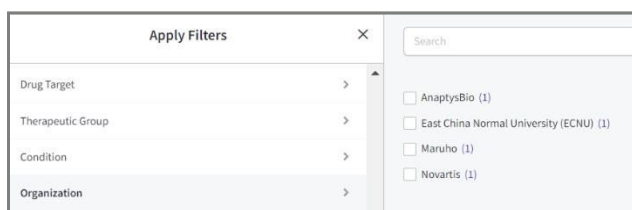
2. Understand the competitive landscape around your sequence.

Now that you have a list of candidates with sequences similar to yours, use **Apply Filters** to analyze them. As an example:

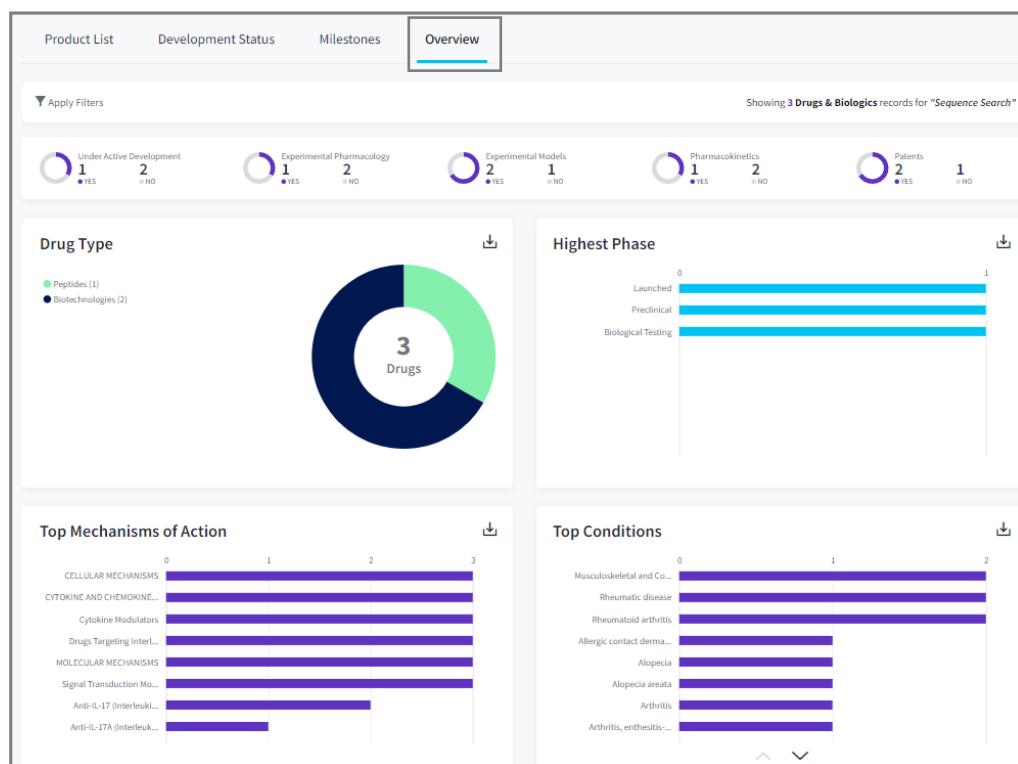
- Understand the *disease-scape* related to your results by selecting the **Conditions** filter



- Identify potential competitors and collaborators by selecting the **Organizations** filter

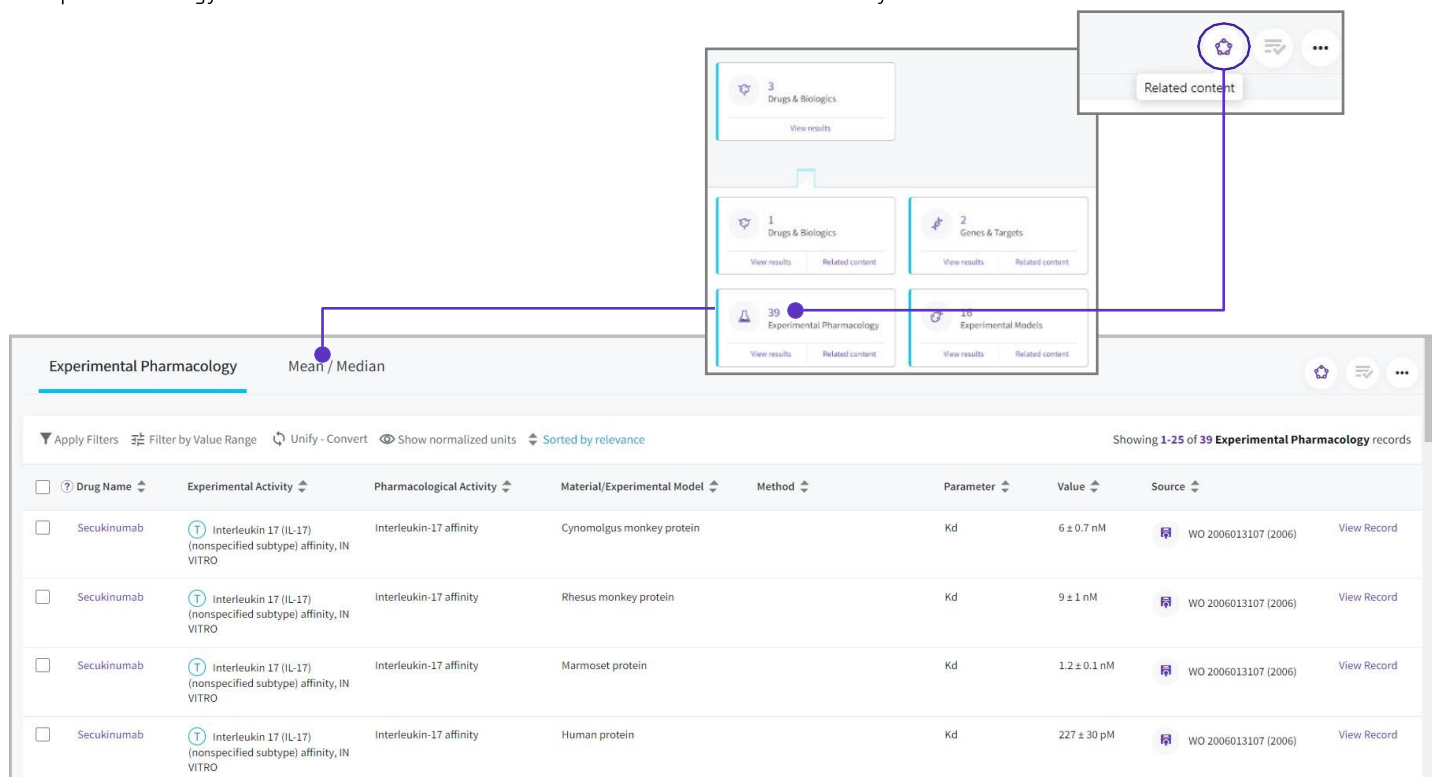


You may also use the **Overview** tab to visualize the distribution of your results among drug type, highest phase, mechanisms of action, conditions, organizations, and regions of development.



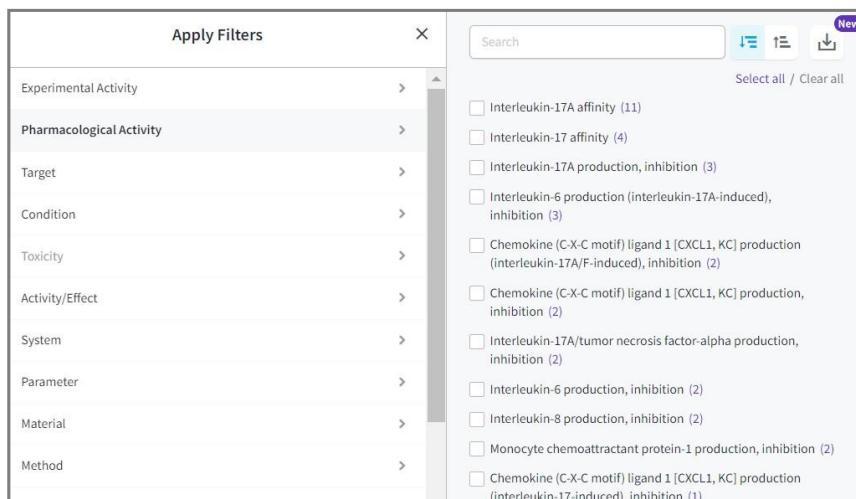
3. Benchmark your candidate's activity against those with similar sequences

To do this, use the **Related Content** button on the top right of the page, navigate to the associated experimental pharmacology data and use the mean/median workflow to obtain the activity benchmark



Drug Name	Experimental Activity	Pharmacological Activity	Material/Experimental Model	Method	Parameter	Value	Source
Secukinumab	Interleukin 17 (IL-17) (nonspecified subtype) affinity, IN VITRO	Interleukin-17 affinity	Cynomolgus monkey protein		Kd	6 ± 0.7 nM	WO 2006013107 (2006)
Secukinumab	Interleukin 17 (IL-17) (nonspecified subtype) affinity, IN VITRO	Interleukin-17 affinity	Rhesus monkey protein		Kd	9 ± 1 nM	WO 2006013107 (2006)
Secukinumab	Interleukin 17 (IL-17) (nonspecified subtype) affinity, IN VITRO	Interleukin-17 affinity	Marmoset protein		Kd	1.2 ± 0.1 nM	WO 2006013107 (2006)
Secukinumab	Interleukin 17 (IL-17) (nonspecified subtype) affinity, IN VITRO	Interleukin-17 affinity	Human protein		Kd	227 ± 30 pM	WO 2006013107 (2006)

Hypothesize or validate potential targets for this set of candidates by clicking on the **Pharmacological activity** filter:



Filter Category	Filter Name	Count
Pharmacological Activity	Interleukin-17A affinity	11
	Interleukin-17 affinity	4
	Interleukin-17A production, inhibition	3
	Interleukin-6 production (interleukin-17A-induced), inhibition	3
	Chemokine (C-X-C motif) ligand 1 [CXCL1, KC] production (interleukin-17A/F-induced), inhibition	2
	Chemokine (C-X-C motif) ligand 1 [CXCL1, KC] production, inhibition	2
	Interleukin-17A/tumor necrosis factor-alpha production, inhibition	2
	Interleukin-6 production, inhibition	2
	Interleukin-8 production, inhibition	2
	Monocyte chemoattractant protein-1 production, inhibition	2
	Chemokine (C-X-C motif) ligand 1 [CXCL1, KC] production (interleukin-17-induced), inhibition	1

For more information contact Customer Service at **LS Product Support**