

Using the caBIO Portlet Templated Search to Find Diseases and Compounds Associated with a Gene

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Need Additional Help?

If you need support, please contact [Application Support](#).



To Print the Guide

We recommend you print one wiki page of the guide at a time. To do this, click the printer icon at the top right of the page; then from the browser File menu, choose Print. Printing multiple pages at one time is more complex. For instructions, refer to [How do I print multiple pages?](#).



Having Trouble Reading the Text?

Resizing the text for any web page is easy. For information on how to do this in your web browser, refer to this [W3C tutorial](#).

Selecting a Gene Search Term

The [caBIO Portlet Templated Search](#) tool allows end users to execute case-insensitive searches for the diseases and compounds that are associated with a gene concept. These search terms must match **exact** gene terms in the Cancer Gene Index.

If you would like to search for a specific gene (for example, only for "BMP7"), you may use the gene's [HUGO gene symbol](#).

If you would like to search for diseases and compounds that are associated with a related genes (for example, "BMP2," "BMP3," "BMP5", and "BMP7"), use the * wild card character, which matches zero or more characters, in your search terms (for example, "BMP*"). For example, a search for "bmp7" will return nearly 210 results that are related to that **exact** term, whereas a search for "bmp*" returns nearly 2,200 results, where genes match terms that include "BMP1," "BMP2," and "BMPR2."

Using Templated Search Tool to Retrieve Gene-Disease and Gene-Compound Concept Pairs

To search for Cancer Gene Index gene-disease and gene-compound data on the Templated Search page, click on the Cancer Gene Index Category node (1) and choose the Gene to Diseases/Agents query option (2). Manually delete the suggested search term "C4BPA" (3), enter your compound term or concept code into the text box (for example, "BMP7" or "BMP*"), and click the Search button (4).

Note

Although the Cancer Gene Index refers to pharmacological substances as "compounds," caBIO refers to the concept as "agents."

caBIO Portlet

The caBIO portlet is a portal user interface built on top of the caBIO APIs. caBIO is a repository of data useful in biomedical research, compiled from multiple primary sources.

Simple Search **Templated Searches** About

Select category:

- Genome Range Queries
- Microarray Annotations
- Genomic Annotations
- Pathways
- Cancer Gene Index 1

2 Gene to Diseases/Agents 3 Gene Symbol TOP2A

4 **Search** **Reset**

The Gene to Diseases/Agents query returns Gene/Agent Association and Gene/Disease Association results in a tabular form. Each table consists of three columns which include: HUGO Gene Symbol, NCI Thesaurus disease or compound term, and a PubMed identifier. Each row represents a single gene-disease or gene-compound association. You will receive a "No results found" message if you have used a search term that does not match any Cancer Gene Index gene symbol or if no disease or compound is associated with your gene search term.

Warning!

Your first result page will likely contain a Gene/Agent Association and Gene/Disease Association table. This does **not** mean that all of the gene-compound associations are given on the first page. Instead you must continue to review subsequent results pages to find all gene-compound and gene-disease association results.

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[Simple Search](#)[Templated Searches](#)[About](#)

▼ Gene to Diseases/Agents

[« Return to templates](#)Results **1 - 40 of 499** (click on a row to view details)

Gene/Disease Association

Gene Symbol	Disease Name	Pubmed References
TOP2A	human ovarian cancer	8172796
TOP2A	merkel-cell carcinomas	14586067
TOP2A	human tumor	1338275
TOP2A	breast cancer	14632728
TOP2A	breast cancer	15034864
TOP2A	breast cancer	15891995
TOP2A	breast cancer	14728934
TOP2A	tumor	9268990
TOP2A	tumors	14566826
TOP2A	tumors	14566826



Saving Your Search Results

To save your search results, copy and paste them into a text editor or spreadsheet.

Validating Your Results

caBIO houses the all Cancer Gene Index gene-disease association annotations, including information on whether the association was found to be negative by the Cancer Gene Index project's [human curators](#) or originated from cell lines or non-human organisms. In order to select only your desired data, you must access to caBIO Object Graph Browser to manually check the negation status of and find other annotations for each retrieved record.

Validating Your Retrieved Compound Results

To perform this validation, click on any gene-compound result row in order to view its Gene-Agent Association information. Gene-Agent Association data include the Gene Term, Gene Symbol, Agent Term, Agent Identifier, Sentence PubMed Identifier, Sentence Evidence, [Evidence Code](#), and [Role Code](#) or [Detail](#) (1).

Next, click on the [Open this record in the caBIO Object Graph Browser](#) at the bottom of the page (2).

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▼ Gene to Diseases/Agents

[« Return to results](#)

1 Gene/Agent Association

Gene Symbol	TOP2A		
Gene Description	Topoisomerase (DNA) II alpha 170kDa		
Agent Name	camptothecin		
Agent EVS Id	C338		
Source	Cancer Gene Index		
	PubMED Id	Sentence	Evidence Codes
Evidence	11205246	These results demonstrated that induction of p53 by camptothecin treatment can lead to a decreased level of TOP2 alpha and should be considered in design of combination therapy.	EV-EXP-IEP
Role	Chemical_or_Drug_Changes_Expression		

External Links

- 2 • [Open this record in the caBIO Object Graph Browser](#)

This will open up a the Gene-Agent Association object in a new window or tab in your web browser. Click on the `getEvidenceCollection` link (3, green box) to open the full Evidence record, which contains all of the annotations made by the curator for that particular piece of evidence of a gene-compound association. Gene-compound associations with true relationships were validated as being true associations by human curators have a `sentenceStatus` set to "finished" and a `negationStatus` set to "no" (4, middle and right green boxes). If you wish to exclude data from cell lines, for example, the `celllineStatus` must be be "no." If you want to see additional information about the agent, navigate back to the Gene-Agent Association in your browser and click on `getAgent` (3, blue box in top panel). This will open an Agent object, in which you may see the name and EVS Identifier for the associated compound (4, blue boxes in bottom panel).

Criteria: gov.nih.nci.cabio.domain.GeneAgentAssociation[@id=19972173]

| 1-1 of 1 |

gov.nih.nci.cabio.domain.GeneAgentAssociation

bigid	id	role	source	gene	evidenceCollection	agent
-	19972173	Chemical_or_Drug_Changes_Expression	Cancer Gene Index	getGene	getEvidenceCollection	getAgent

3 1

Criteria: GeneAgentAssociation[@id=19972173]

gov.nih.nci.cabio.domain.Evidence

bigid	celllineStatus	comments	id	negationStatus	pubmedId	sentenceStatus
-	yes	-	498691	no	11205246	The combination therapy. finished

2

2

Criteria: GeneAgentAssociation[@id=19972173]

gov.nih.nci.cabio.domain.Agent

absorption	bigid	nt	drugbankAccession	EVSId	halfLife	molecularWeight	name
-	hd://2500.1.PMEUQUCL5LQ5f	DB04690		C338	-	348.352	camptothecin

4

4



Note

If you accidentally navigate to somewhere else in caBIO by clicking on the wrong link in the Object Viewer and are confused, stop and go back!

Once you have finished reviewing the gene-compound association in the caBIO Object Graph Browser, return to the caBIO Portlet web browser tab or window, and click the [Return to Results](#) link in blue to continue evaluating retrieved gene-compound pairs in the results table.

Validating Your Retrieved Disease Results

To validate gene-disease associations click on any row in the Gene-Disease Association results table. This will open the concept pair's Gene-Disease Association information. These data include the Gene Term, Gene Symbol, Disease Term, Disease Symbol, Sentence PubMed Identifier, Sentence Evidence, [Evidence Code](#), and [Role Code or Detail](#) (1).

Next, click on the [Open this record](#) in the caBIO Object Graph Browser at the bottom of the page (2).

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[Simple Search](#)[Templated Searches](#)[About](#)

▼ Gene to Diseases/Agents

Gene Symbol [Search](#)[Reset](#)[« Return to results](#)

1 Gene/Disease Association

Gene Symbol	TOP2A		
Gene Description	Topoisomerase (DNA) II alpha 170kDa		
Disease Name	human ovarian cancer		
Disease EVS Id	C4908		
Source	Cancer Gene Index		
Evidence	PubMED Id	Sentence	Evidence Codes
	8172796	Molecular analysis of the topoisomerase II alpha gene and its expression in human ovarian cancer.	
Role	Not assigned		

External Links

- 2 • [Open this record in the caBIO Object Graph Browser](#)

This will open up a the Gene-Disease Association object in a new window or tab in your web browser. Click on the `getEvidenceCollection` link (1, green box) to open the full Evidence record, which contains all of the annotations made by the curator for that particular piece of evidence of a gene-disease association. Gene-disease pairs with true relationships were validated as being true associations by human curators have a `sentenceStatus` set to "finished" and a `negationStatus` set to "no" (2, green boxes in the middle panel). If you wish to exclude data from cell lines, for example, the `cellLineStatus` must be be "no." If you want to see some additional information about the disease, navigate back to the Gene-Disease Association object in your browser, and click on `getDiseaseOntology` (3, blue box in top panel). This will open a Disease Ontology record, in which you may see the name and EVS Identifier for the associated disease (4, blue boxes in bottom panel).

Criteria: gov.nih.nci.cabio.domain.GeneDiseaseAssociation[@id=19448553]						
1-1 of 1						

gov.nih.nci.cabio.domain.GeneDiseaseAssociation						
bigid	id	role	source	gene	evidenceCollection	diseaseOntology
-	19448553	Not assigned	Cancer Gene Index	getGene	getEvidenceCollection	getDiseaseOntology

1 3

Criteria: GeneDiseaseAssociation[@id=19448553]									
gov.nih.nci.cabio.domain.Evidence									
bigid	celllineStatus	comments	id	negationStatus	pubmedId		sentenceStatus	evidenceCodeCollection	
-	no	-	1193593	no	8172796	Molecular aneuploidy cancer	no_fact	getEvidenceCodeCollection	

2 2

Criteria: GeneDiseaseAssociation[@id=19448553]						
gov.nih.nci.cabio.domain.DiseaseOntology						
bigid	EVSId	id	name	childDiseaseOntologyRelationshipCollection		
hdl://2500.1/PMEUQUCL54CX5SBTZ4D	C4908	5595	human ovarian cancer	getChildDiseaseOntologyRelationshipCollection		

4 4



Note
If you accidentally navigate to somewhere else in caBIO by clicking on the wrong link in the Object Viewer and are confused, stop and go back!

Once you have finished reviewing the gene-disease association in the caBIO Object Graph Browser, return to the caBIO Portlet web browser tab or window, and click the [Return to Results](#) link in blue to continue evaluating retrieved gene-disease pairs in the results table.

New Gene to Disease/Agent Searches

To search for diseases and compounds/agents associated with other genes, return to your Templated Search results page, if needed, and click the [Gene to Diseases/Agents](#) link (1), hit the [Reset](#) button (2), enter a new gene symbol (3), and click [Search](#) (4).

If you would like to select a new query option, click [Return to Templates](#) (below 2 and 4).

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[Simple Search](#)[Templated Searches](#)[About](#)

▼ Gene to Diseases/Agents 1

Gene Symbol

TOP2A

[Search](#)[Reset](#)

4

2

[« Return to templates](#)

Results 1 - 40 of 499 (click on a row to view details)

Gene/Disease Association

Gene Symbol	Disease Name	Pubmed References
TOP2A	human ovarian cancer	8172796
TOP2A	merkel-cell carcinomas	14586067