

Using the caBIO Home Page Freestyle Lexical Mine to Find Genes Associated with a Compound

Page Contents

- [Searching for Compounds Associated with a Compound](#)
- [Search Results](#)
- [Finding the Gene Associated with the Evidence](#)
- [Agent Ontologies](#)

Documentation Table of Contents

- [Documentation Main Page](#)
- [Creation of the Cancer Gene Index](#)
- [Data, Metadata, and Annotations](#)
- [Cancer Gene Index Gene-Disease and Gene-Compound XML Documents](#)
- [caBIO APIs](#)
- [Cancer Gene Index Shared Parsed Data and Code](#)
- [caBIO Portlet Templated Searches](#)
- [caBIO Home Page](#)
- [caBIO iPhone Application](#)
- [caBIO Portlet Simple Searches](#)
- [Glossary](#)
- [Credits and Resources](#)



Need Additional Help?

If you need additional 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 [Printing 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](#) .


Searching for Compounds Associated with a Compound

To use the [caBIO Home Page Freestyle Lexical Mine](#) tool to find genes that are associated with a pharmacological substance, begin typing keywords into the search field. Because the tool suggests caBIO terms that match the characters you have entered, it is relatively easy to find a compound search term that matches your desired compound concept.

Text Search



Center for
Biomedical Informatics
and Information Technology
**FREESTYLE
LEXICAL MINE**



peptidyl-prolyl **cis**-trans isomerase, cyclophilin type
cisplatin
ppic-type peptidyl-prolyl **cis**-trans isomerase
cisapride
cis-diamminedichloroplatinum
cisplatinum
cis-platinum
cis-retinoic acid
cisd1
cisd3

[more options ...](#)

If you would like to search for any compound term that contains a string use the special character "*". For example, "cisplatin" would only return objects that are associated with this exact compound term, but "cisp*" will retrieve objects that are associated with any term that contains the string "cisp."

After entering a search term (1), click the Submit button (2) to retrieve results. Although you may limit your search by clicking on the [more options ...](#) link, this is not required (3).



Tip

If you cannot find an appropriate search term, click the [Contact Us](#) link for help.

Text Search



Center for
Biomedical Informatics
and Information Technology
**FREESTYLE
LEXICAL MINE**



[more options ...](#)

Search Results


The caBIO Home Page Freestyle Lexical Mine will retrieve objects with attributes that match your search term. These objects are grouped by type, which are shown as tabs at the top of the results page. To view genes that are associated with your compound term, click the Evidence tab at the top of the page (1).

Each row in the Evidence results table is a truncated view of an Evidence object (i.e., not all attributes and methods are shown on this page), where the columns include:


- the class and identifier (Class/Id),
- evidence of the gene-compound association (Sentence),
- whether the evidence was collected from experiments involving cell lines (Cellline Status),

- whether the evidence is negative (i.e., gene X is not associated with compound Y; [Negation Status](#)),
- the PubMed identifier for the abstract from which the evidence was extracted ([Pubmed Id](#)), and
- whether the status of the sentence ([Sentence Status](#)).


For additional information on these attributes of the Evidence type objects, refer to the section [Data, Metadata, and Annotations](#).

**Note**

Although the Cancer Gene Index refers to pharmacological substances as "compounds" or "drugs," caBIO and the NCI Thesaurus use the term "agent" for the same concept.



Center for
Biomedical Informatics
and Information Technology
**FREESTYLE
LEXICAL MINE**

 Search

All (2740)

Evidence (2514)

Clinical Trial Protocol (217)

Agent (4)

Protein (2)

Protein Alias (2)

Gene (1)


gov.nih.nci.cabio.domain.Evidence

1 to 200 [next](#)


Class/Id	Sentence	Cellline Status	Negation Status	Pubmed Id	Sentence Status
2 Evidence#280887	Twenty-two patients, with locally advanced unresectable and/or metastatic pancreatic carcinoma, received weekly administration of cisplatin 40 mg m(-2), 5-fluorouracil 500 mg m(-2), epirubicin 35 mg m(-2), 6S stereoisomer of leucovorin 250 mg m(-2) and glutathione 1.5 mg m(-2), supported by a daily administration of filgrastim at a dose of 5 microg kg(-1).	no	no	10027318	finished
Evidence#281070	A brief intensive cisplatin-based outpatient chemotherapy regimen with filgrastim and megestrol acetate support for advanced non-small cell lung cancer: results of a phase II trial.	no	no	10048475	finished
Evidence#281072	To evaluate the efficacy and toxicity of a brief, intensive cisplatin-based outpatient chemotherapy regimen with filgrastim and megestrol acetate support for patients with stage IIIB and IV non-small cell lung cancer (NSCLC) and a favorable performance status.	no	no	10048475	finished
Evidence#108536	A decreased expression level of up to 80% of mRNAs encoding hMLH1 and hMSH2 was observed in drug-resistant melanoma cells selected for cisplatin, etoposide and fotemustine, while vindesine-selected cells showed only moderate reduction.	no	no	10048977	finished
Evidence#108532	We show that in melanoma cells exhibiting resistance to cisplatin, etoposide and vindesine, the nuclear content of each of the DNA mismatch repair (MMR) proteins hMLH1, hMSH2 and hMSH6 was reduced by 30-70%.	no	no	10048977	finished
Evidence#413252	A detailed analysis of the cisplatin-resistant phenotype indicated that it was associated with reduced cisplatin accumulation, reduced interstrand cross-link (ICL) formation and DNA platination, microsatellite instability, and reduced expression of the DNA mismatch repair protein PMS2.	yes	no	10051537	finished
Evidence#61087	PURPOSE: To prospectively evaluate performance and quality of life (QOL) in advanced-stage head and neck cancer (HNC) patients on a curative-intent, concomitant-chemoradiotherapy (CT/XRT) (twice-daily radiation, fluorouracil, hydroxyurea, and cisplatin) regimen aimed at improving locoregional control, survival, and QOL.	no	no	10071297	no_fact

Finding the Gene Associated with the Evidence

To discover which gene is associated with each piece of evidence, click on the **Class/Id** link for the desired object. This will open the full Evidence type object. Scroll over to the right, and click on `getGeneFunctionAssociationCollection` method link (1) to view the `Gene Agent Association` type object. This object has a `role` attribute that contains one or more [Role Codes](#) or [Role Details](#) that describe the nature of the gene-compound/agent relationship, as well as a notation that the Cancer Gene Index is the source of these data.

**Warning**

If you do not want to spend time navigating through the caBIO object model for candidate gene-compound associations that were found to be false positives, select only Evidence objects where the `Sentence Status` is `finished` and `Negation Indicator` is `no`.

**Note**

A single piece of evidence may have multiple Role Codes and Role Details describing the gene-compound association, and the evidence may also describe gene-disease associations. Thus, after clicking the `getGeneFunctionAssociationCollection` link, you may see multiple retrieved objects of type `Gene Agent Association`, `gov.nih.nci.cabio.domain.GeneAgentAssociation`, and even multiple object retrieved records of type `Gene Disease Association`, `gov.nih.nci.cabio.domain.GeneDiseaseAssociation`.

Click on the `getGene` link (2) to access the related Gene object (bottom panel). This Gene object contains the full name and HUGO Gene Symbol in the `fullName` and `hugoSymbol` columns (3), for example, for the gene associated with the compound of interest and a specific piece of evidence.

Criteria: gov.nih.nci.cabio.domain.Evidence[@id=498883]							
gov.nih.nci.cabio.domain.Evidence							
bigid	celllineStatus	comments	id	negationStatus	sentenceStatus	evidenceCodeCollection	geneFunctionAssociationCollection
-	no	(VP-16)- etoposide	498883	no	unclear	getEvidenceCodeCollection	getGeneFunctionAssociationCollection

1

Criteria: Evidence[@id=498883]							
gov.nih.nci.cabio.domain.GeneAgentAssociation							
bigid	id	role	source	gene	evidenceCollection	agent	
-	19934141	Not assigned	Cancer Gene Index	getGene	getEvidenceCollection	getAgent	

2

Criteria: GeneAgentAssociation[@id=19934141]						
gov.nih.nci.cabio.domain.Gene						
bigid	clusterId	fullName	hugoSymbol	id	symbol	
hdl://2500.1.PMEUQUOCL5/EXR4GW46D7	156346	Topoisomerase (DNA) II alpha 170kDa	TOP2A	7589	TOP2A	

3

To explore additional genes associated with the compound term, navigate back to the evidence page and repeat this process.



Be Careful

If you find yourself in a part of the object model that you do not understand or if you get confused, stop and navigate your web browser back to the search results page with the Evidence tab.

For your reference, the subset of caBIO classes that are related to the Cancer Gene Index are shown [here](#). The full caBIO model is available on [NCI SVN](#), but you must have the [Enterprise Architect](#)

modeling tool to view this file.

Agent Ontologies

If you would like to search for genes that are associated with parent, sister, or child concepts to your compound/agent search term, you must use the NCI Thesaurus. To view these ontologies in the NCI Thesaurus, open a new browser tab or window and navigate to the [NCI Thesaurus web page](#), enter in your compound term (2, "etoposide") or NCI Thesaurus concept code (e.g., "C491"), and click the Search button (3). If required, select your exact search term from the list to view the NCI Term page



Identifier Tip

The EVS Identifier for a term is also its NCI Thesaurus Concept Code.



2

Search

?

☐ Exact Match
 ☐ Begins With
 ☒ Contains

[Home](#) | [View Hierarchy](#) | [Subsets](#) | [Help](#)

[Term Suggestion](#)

Quick Links

You may view parent and child terms for any compound term by clicking on the Relationships tab (blue box). For example, "etoposide" has the no child terms and the parent term "Epipodophyllotoxin Compound." Alternatively, if you would like to view parent, sister, and child concepts as well as where your term fits in the entire agent hierarchy, click the red View in Hierarchy button (green box).

Etoposide (Code C491)

[Suggest changes to this concept](#)[Terms & Properties](#)[Relationships](#)[Synonym Details](#)[View All](#)[View in Hierarchy](#)[View History](#)

Terms and Properties

Definition: A semisynthetic derivative of podophyllotoxin, a substance extracted from the mandrake root *Podophyllum peltatum*. Possessing potent antineoplastic properties, etoposide binds to and inhibits topoisomerase II and its function in ligating cleaved DNA molecules, resulting in the accumulation of single- or double-strand DNA breaks, the inhibition of DNA replication and transcription, and apoptotic cell death. Etoposide acts primarily in the G2 and S phases of the cell cycle. (NCI04)

NCI-GLOSS Definition: An anticancer drug that is a podophyllotoxin derivative and belongs to the family of drugs called mitotic inhibitors.

Preferred Name: Etoposide

NCI Thesaurus Code: C491

NCI Metathesaurus CUI: C0015133 ([see NCI Metathesaurus info](#))

Synonyms & Abbreviations: ([see Synonym Details](#))

4'-Demethylepipodophyllotoxin 9-[4,6-O-ethylidene-beta-D-glucopyranoside

9-[(4,6-O-Ethylidene-beta-D-glucopyranosyl)-5,8,8a,9-tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)furo[3',4':6,7]naphtho[2,3-d]-1,3-dioxol-6(5aH)-one