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Please enter a search term
Enzyme, Ligand contains
add search field delete search field start search

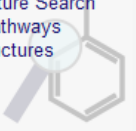
Text-based queries

- Full-text Search
- Advanced Search
- Enzyme & Disease



Structure-based queries

- Ligand Structure Search
- Metabolic Pathways
- Enzyme Structures



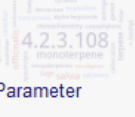
Explorer

- Enzyme Classification
- TaxTree
- Protein folding: CATH / SCOPe
- Ontologies



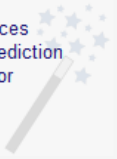
Visualization

- Word Maps
- Genomes
- Functional Parameter Statistics
- Metabolic Pathways



Prediction

- Membrane Helices
- Localization Prediction
- EnzymeDetector




Supporting & External

- BRENDA Tissue Ontology
- Biochemical Reactions
- MetaboMAPS



News

NEW Release online! - February 1, 2021
Release 2021.1 online including 76 new and 623 updated enzyme classes.



for Release 2021.1

BRENDA Tutorial

Word Maps

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Word Maps in BRENDA

visualization of the enzyme-related terms published in the literature for

- Enzymes
- Organisms

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Enzymes
Organisms BETA

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 **elixir**
Core Data Resource

UPDATE!
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Word Maps

- Visualization of the publication context of each enzyme
- Only words from PubMed titles and abstracts with the highest enzyme specificity
- Different font sizes to mark the relevance
- Classification into enzyme, organism, source tissue, localization, ligand, disease, application
- Various colors depending on the category
- Links to the respective BRENDA query page



Search Word Maps

You can directly search for an EC number

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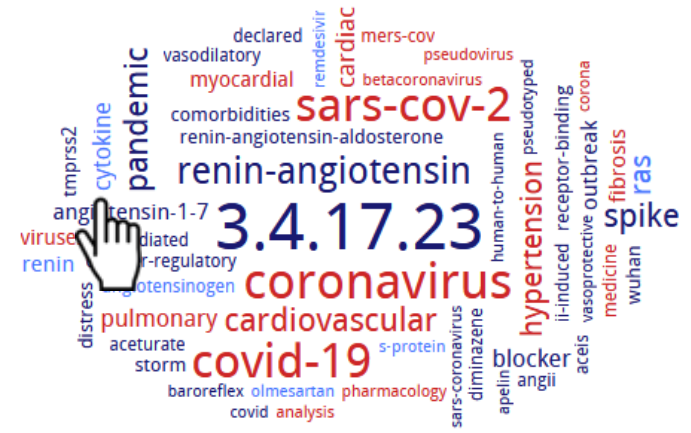
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UPDATE!

On the result page...

- Visualization of the publication context of each enzyme
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Word Maps



Search Word Maps

Clicking on the ligand name leads to the Ligand Summary Page

cytokine Close

Ligand

Th-1 cytokine

cytokine

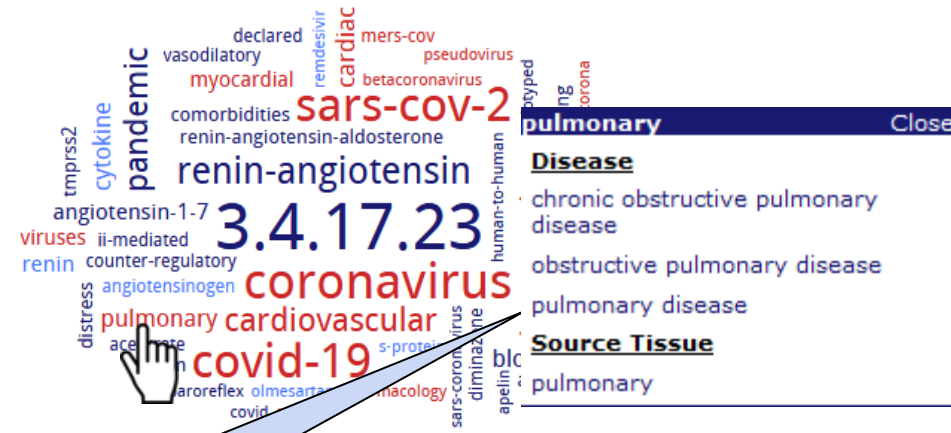
proinflammatory cytokine

On the result page...

- Visualization of the publication context of each enzyme
- Only words from PubMed titles and abstracts with the highest enzyme specificity
- Different font sizes to mark the relevance
- Classification into enzyme, organism, source tissue, localization, ligand, disease, application
- Various colors depending on the category
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Search Word Maps

Word Maps



If you click on the disease term you get further information on the disease query page

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Taxonomic Word Maps

- Visualization of the publication context of each organism
- Only words from PubMed titles and abstracts with the highest organism specificity
- Different font sizes to mark the relevance
- Classification into enzyme, organism, ligand, human disease, plant disease, plant trait, plant pathogen, useful organism and habitat
- Various colors depending on the category
- Links to the respective BRENDA query page (in the mouseover box)



Search Word Maps

Please enter an organism name

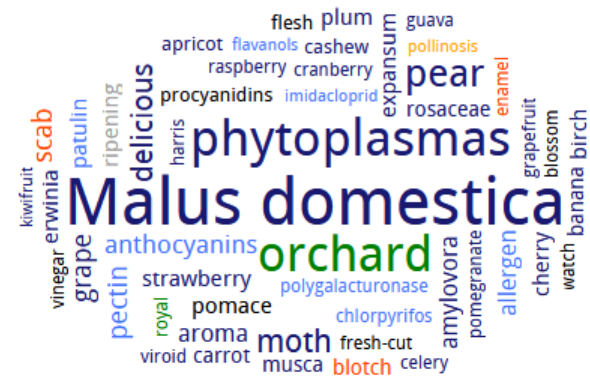
You can directly search for an organism by entering an organism name:

- scientific name
- synonyms

On the result page...

Taxonomic Word Maps

- Visualization of the publication context of each organism
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Search Word Maps

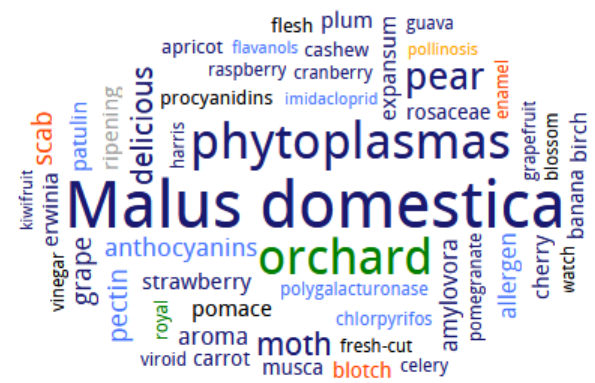
Synonym for *Malus domestica*

On the result page...

- Visualization of the publication context of each organism
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- Various colors depending on the category
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Search Word Maps

Taxonomic Word Maps



The word map displays all published information linked to the searched organism:

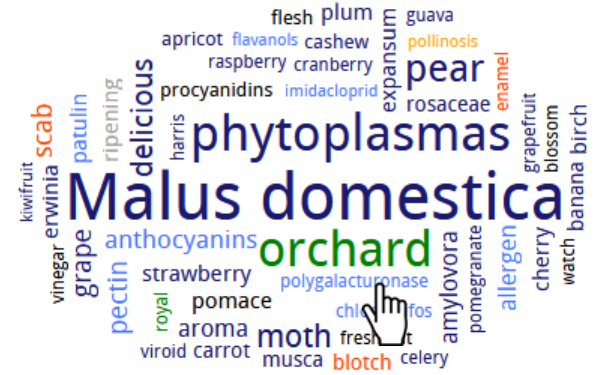
- enzyme
- other organisms
- ligands
- human diseases
- plant traits
- plant pathogens
- habitats

On the result page...

Taxonomic Word Maps

- Visualization of the publication context of each organism
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Search Word Maps



If you click on the enzyme name, you will get (if available in BRENDA) further information

polygalacturonase Close
Enzyme
 corn pollen polygalacturonase
 pectin polygalacturonase

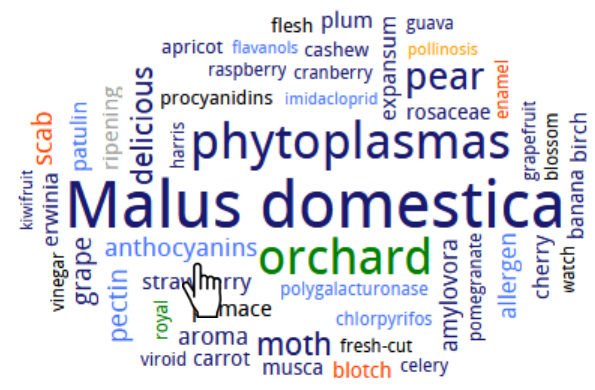
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On the result page...

Taxonomic Word Maps

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- Various colors depending on the category
- Links to the respective BRENDA query page (in the mouseover box)

Search Word Maps



By clicking on the ligand name you will you be lead (if available) to the Ligand Summary Page

Close

anthocyanins

Ligand

anthocyanin

anthocyanins

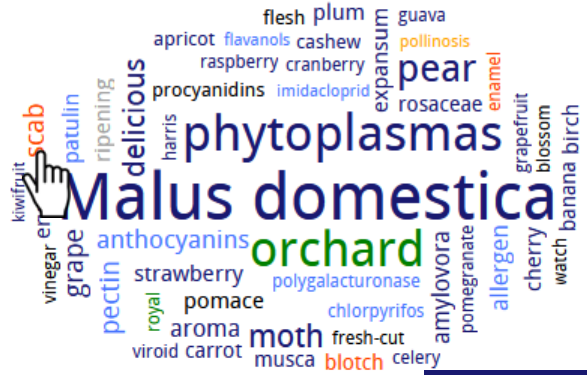
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Taxonomic Word Maps

On the result page...

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Search Word Maps



scab Close

Plant Disease

- [apple scab](#)
- [leaf scab](#)
- [pear scab](#)
- [pecan scab](#)
- [potato scab](#)
- [scab](#)
- [wheat scab disease](#)

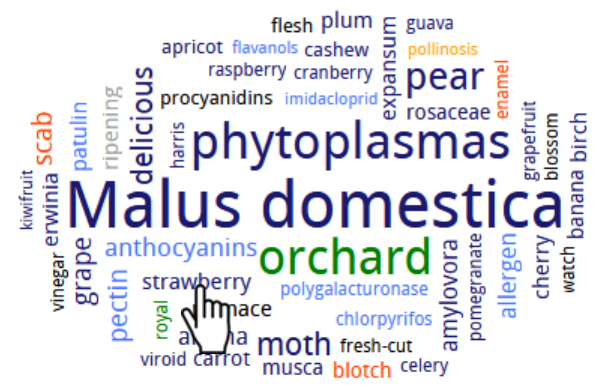
If you click on a term, all known plant diseases containing this disease term are listed

Taxonomic Word Maps

On the result page...

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- Various colors depending on the category
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Search Word Maps



strawberry Close

Organism

- alpine strawberry
- strawberry
- woodland strawberry

If you click on the organism name you will open the link to the NEW Organism Summary Page...

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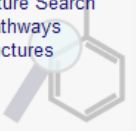
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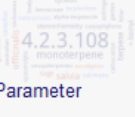
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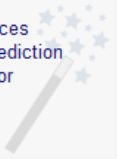
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




Display of Enzyme Word Maps in BRENDA via Quick Search and Enzyme Summary Page

Refine search



Search Enzyme Names (Synonyms)

Search term: deoxyhypusine synthase

« « Results 1 - 3 of 3 » »
 download as CSV
 download all results as CSV

EC Number ▼▲	Recommended Name ▼▲	Synonyms ▼▲	Commentary ▼▲
  1.1.1.249	[protein eIF-5A]-deoxyhypusine synthase	[protein eIF-5A]-deoxyhypusine synthase	deleted, reinstated as EC 2.5.1.46
  1.14.99.29	deoxyhypusine monooxygenase	deoxyhypusine synthase/hydroxylase	-
  2.5.1.46	deoxyhypusine synthase	deoxyhypusine synthase, deoxyhypusine synthase (Caulobacter crescentus gene CC0359), deoxyhypusine synthase (Halobacterium strain NRC-1 gene dhs), deoxyhypusine synthase (human clone 30649 gene DHPS subunit reduced), deoxyhypusine synthase (Nicotiana tabacum gene DHS1), deoxyhypusine synthase (Senecio vernalis gene DHS1)	-



« « Results 1 - 3 of 3 » »
 download as CSV
 download all results as CSV

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Clicking on the icon will open the Word Map in a pop-up window...

Refine search

Search Enzyme Names (Synonyms)

Search term: deoxyhypusine synthase

«« Results 1 - 3 of 3 »»
 download as CSV
 download all results as CSV

EC Number ▼▲	Recommended Name ▼▲	Synonyms ▼▲	Commentary ▼▲
  1.1.1.249	[protein eIF-5A]-deoxyhypusine synthase	[protein eIF-5A]-deoxyhypusine synthase	deleted, ted as EC 6
  1.14.99.29	deoxyhypusine monooxygenase	deoxyhypusin	
  2.5.1.46	deoxyhypusine synthase	deoxyhypusin deoxyhypusin 30649 gene D deoxyhypusin	



BRENDA - Word Map of 2_5_1_46 - Mozilla Firefox
https://www.brenda-enzymes.org/word_map.php

BRENDA

butylamine polyamine gc7
 aminobutylation deoxyhypusine-containing eif5a-1
 nephsilon-4-amino-2-hydroxybutylllysine

wolff
 polyamine-derived
 1,7-diaminoheptane
 drug development
 2.5.1.46
 n1-guanyl-1,7-diaminoheptane
 homospermidine
 hypusine-containing triamine
 pyrrolizidine
 eif-4d
 1,3-diaminopropane

- enzyme, localization, source tissue or no category
- organism, application or disease
- ligand

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show all | hide all No of entries

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Information on EC 2.5.1.46 - deoxyhypusine synthase

for references in articles please use BRENDA:EC2.5.1.46

EC Tree

- 2 Transferases
 - 2.5 Transferring alkyl or aryl groups, other than methyl groups
 - 2.5.1 Transferring alkyl or aryl groups, other than methyl groups (only sub-subclass)
 - 2.5.1.46 deoxyhypusine synthase

IUBMB Comments

The eukaryotic initiation factor eIF5A contains a hypusine residue that is essential for activity. This enzyme catalyzes the first reaction of hypusine formation from one specific lysine residue of the eIF5A precursor. The reaction occurs in four steps: NAD⁺-dependent dehydrogenation of spermidine (1a), formation of an enzyme-imine intermediate by transfer of the 4-aminobutylidene group from dehydrospermidine to the active site lysine residue (Lys329 for the human enzyme; 1b), transfer of the same 4-aminobutylidene group from the enzyme intermediate to the eIF5A precursor (1c), reduction of the eIF5A-imine intermediate to form a deoxyhypusine residue (1d). Hence the overall reaction is transfer of a 4-aminobutyl group. For the plant enzyme, homospermidine can substitute for spermidine and putrescine can substitute for the lysine residue of the eIF5A precursor. Hypusine is formed from deoxyhypusine by the action of EC 1.4.99.29, deoxyhypusine monoxygenase.

...or you can go the Enzyme Summary Page to display the Word Map and get further information

Specify your search results

Mark a special word or phrase in this record: [Mark!](#)

Search Reference ID: [Search](#)

Search UniProt Accession: [Search](#)

Select one or more organisms in this record:

All organisms
Arabidopsis thaliana
Arabidopsis thaliana Col-0
Bos taurus
Brassica napus

[Submit](#)

Show additional data

Do not include text mining results

Include **AMENDA** (text mining) results

Include **FRENDA** results (AMENDA + additional results, but less precise)

