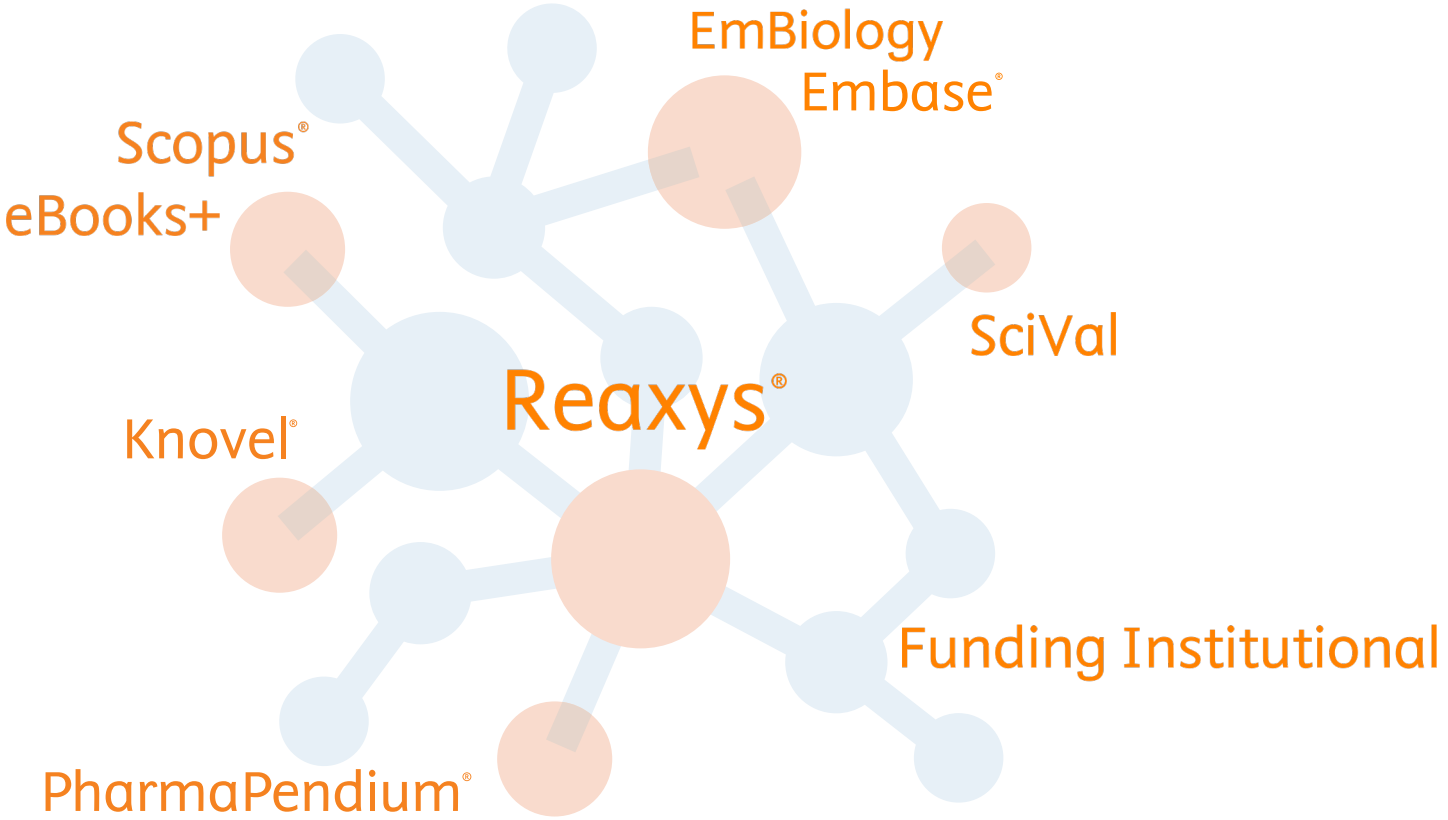
The Elsevier's Chemistry ecosystem

8th July 2023

Marta Da Pian


EmBiology
Embase®
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Funding Institutional
PharmaPendium®

The research discovery journey

Carbohydrates

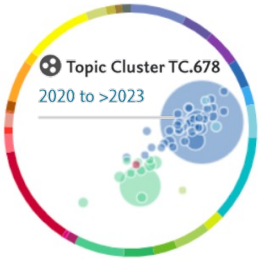
From mono to poly saccharides

Topics trends, fundings and main players

back to table of contents

Topic overview - SciVal

Glycosylation; Glycosides; Carbohydrates



Countries/Regions	Output	Views Count	Citation Impact	Citation Count
China	512	9,304	0.76	2,531
United States	290	3,918	0.68	1,616
India	205	2,389	0.43	596
Japan	205	4,328	0.58	687
Germany	110	1,839	0.75	762
France	79	1,402	0.68	334
Russian Federation	69	1,073	0.31	143
Italy	58	1,353	0.81	302
Canada	47	508	0.50	138
South Korea	47	707	0.41	164

Overall research performance

1,833
Scholarly Output

View list of publications

0.60
Field-Weighted Citation Impact

306
International Collaboration

30,281
Views Count

7,694
Citation Count

37.324
Topic Prominence percentile

Calculation breakdown

Policy Impact - SciVal

8	6	4
Policy Cited Scholarly Output ⓘ	Citing Policy Documents ⓘ	Policy Bodies

Scholarly output

UN sustainable development goals: How can sustainable/green chemistry contribute? Green chemistry as a source of sustainable innovations in the cosmetic industry.

Hitce, J., Xu, J., Brossat, M. and 4 more

Publication Year	2018
Scopus Source	Current Opinion in Green and Sustainable Chemistry · Volume 13, Pages 164-169
Topic	T.57201 C-Glycoside, 3-Hydroxybutanal, Carbohydrates
SDGs	SDG 8: Decent Work and Economic Growth (2022), SDG 9: Industry, Innovation and Infrastructure (2022)

View Policy Document Mentions (3) More actions

Policy document

Global Chemicals Outlook II - From Legacies to Innovative Solutions: Implementing the 2030 Agenda for Sustainable Development

United Nations Environment Programme

Publication Date	January 01, 2019
Policy Body Type	Intergovernmental Organisation
Languages	English

View Policy Document View Policy Cited Scholarly Output at Topic Cluster (1)

Scholarly output

A preliminary study for evaluating the dose-dependent effect of D-allulose for fat mass reduction in adult humans: A randomized, double-blind, placebo-controlled trial.

Han, Y., Kwon, E.-Y., Yu, M.K. and 5 more

Publication Year	2018
Scopus Source	Nutrients · Volume 10, Issue 2
Topic	T.17184 Psicose, Tagatose, Allose
SDGs	SDG 3: Good Health and Well-being (2022)

Policy document

Scaling up Collaborative Action under the 2030 Agenda for Sustainable Development - Global Chemicals Outlook II Part V

United Nations Environment Programme

Publication Date	January 01, 2019
Policy Body Type	Intergovernmental Organisation
Languages	English

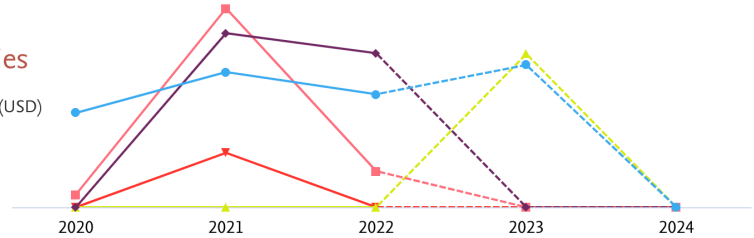
View Policy Document View Policy Cited Scholarly Output at Topic Cluster (1)

Funding Trends - SciVal

27,538,418	15,130,136	57	75,364	10	44
Annualized Awards Value (USD)	Awards Value (USD)	Awards Count	Median amount per Award (USD)	Funding Bodies	Awarded Institutions
Value allocation details		View list of Awards		View Funding Bodies	View Institutions

Funding Bodies

Top 5 by Awards Value (USD)

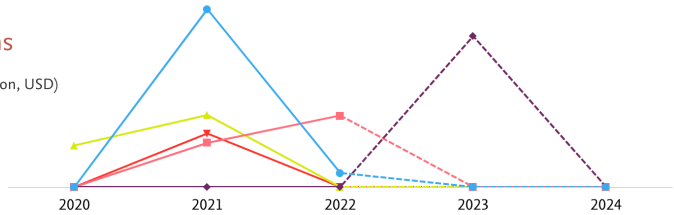


	Awards Value (USD)
National Science Foundation	5,409,191
National Institutes of Health	3,661,249
Japan Society for the Promotion of Science	2,764,113
Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung	1,710,778
Royal Society Te Apārangi	607,031

Most Funded Institutions

Top 5 by Awards Value (estimated allocation, USD)

Learn more about Awards Value



	Awards Value (estimated allocation, USD)	Awards Count
Osaka University	2,176,231	4
University of Geneva	1,710,778	1
Northeastern University	1,310,678	2
Tufts University	1,286,353	2
University of Canterbury	607,031	1

Analyze all Funded Institutions

Funding Opportunities – Funding Institutional

9 Funding opportunities

carbohydrate ✕ Clear all

Save search and find opportunities faster next time.

All 0 selected ☆ Track Share Send to Pure ••• Sorted by Relevance

Derek Horton Award in Industrial Carbohydrate Chemistry

Up to 1,500 USD with total funding of 4,000 USD

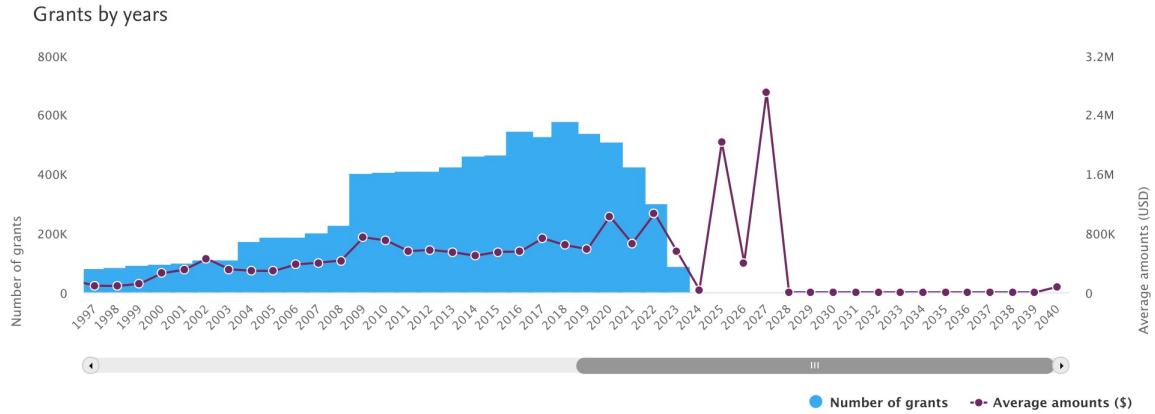
American Chemical Society • Recognition prizes

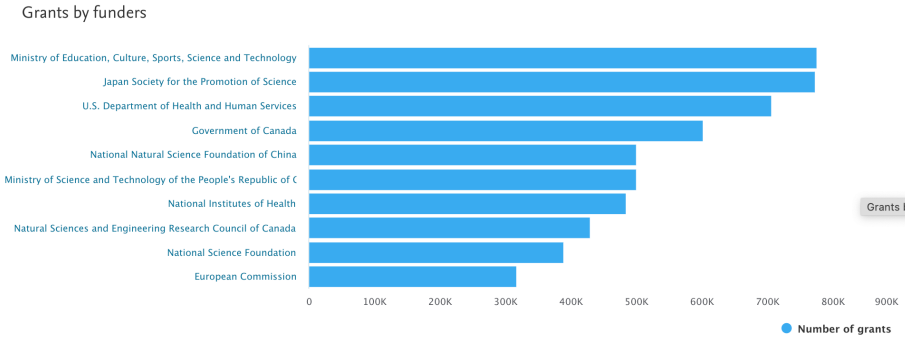
The Derek Horton Award in Industrial Carbohydrate Chemistry acknowledges distinguished achievements in and outstanding contributions to industrial carbohydrate chemistry. ... Read more

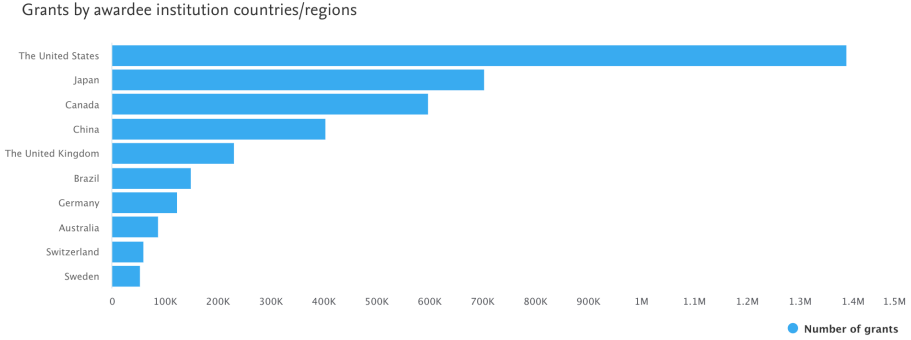
Recurring For members only

Deadline in about 24 days Application, 31-Jul-2023

Awarded Grants – Funding Institutional







Topics definition - eBooks

Carbohydrate

Carbohydrate sugar chains, or glycans, are a major class of biological molecules.
From: Drug Discovery Today, 2008

Related terms:

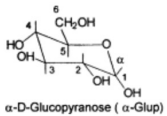
Biomass, Polysaccharide, Graphene , Amino Acid, Aqueous Solution

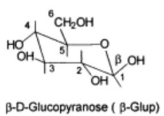
Sample Preparation in Chromatography

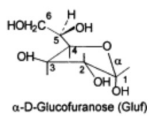
Serban C. Moidoveanu, Victor David, in
Journal of Chromatography Library, 2002

Derivatization of the OH groups in carbohydrates

Carbohydrates (sugars or saccharides) contain in their molecule carbonyl and hydroxyl (aldehyde in aldoses or ketone in ketoses) groups. Carbohydrate derivatization involving both types of functionalities is further discussed in Section 19.9. Also, aspects regarding sample preparation for the analysis of polymeric carbohydrates are discussed in Chapter 20. Carbohydrates commonly exist in their hemiacetal form, and in aqueous solutions the free carbonyls are present only at very low concentrations. For this reason, carbohydrate derivatization is most frequently done at their OH groups, using reagents similar to those for other alcohols.







Advances in polymeric materials for modified atmosphere packaging (MAP)

T.K. Goswami, S. Mangaraj, in
Multifunctional and Nanoreinforced Polymers for Food Packaging, 2011

8.4 Post-harvest pathology of fruits and vegetables

Vegetables have more available water, less carbohydrates (sugars) and higher pH (near to neutral) than fruits (Manay and Shadaksharaswamy 2006). Due to having more available water and pH near to neutral, bacteria are the pre dominant microflora in vegetables. The common spoilage bacteria are *Erwina* spp., which cause bacterial rots in vegetables. The pH of the fruits is below the level to support bacterial growth. Molds and yeasts (fungi) are major main sources of infection that may occur during growing and post-harvest handling of produce (Hotchkiss 1989; Saltveit 1996; Rediers *et al.* 2009). Bacteria gain entry through wounds or natural openings (such as stomata, lenticels, or hydathodes) and multiply in the spaces between plant cells (Tomas-Barberan *et al.* 1997; Lu Shengmin 2009).

Main players in chemistry (last 5ys) - Scopus

Filters Clear all

Year Clear (6)

Range Individual

- Limited to 2023 652
- Limited to 2022 1,179
- Limited to 2021 1,075
- Limited to 2020 1,077
- Limited to 2019 1,030
- Limited to 2018 940

Show all

Author name

Subject area Clear (1)

- Limited to Chemistry 5,953
- Biochemistry, Genetics and Molecular Biology 1,951
- Chemical Engineering 1,832
- Agricultural and Biological Sciences 1,001
- Materials Science 790
- Pharmacology, Toxicology and Pharmaceutics 657

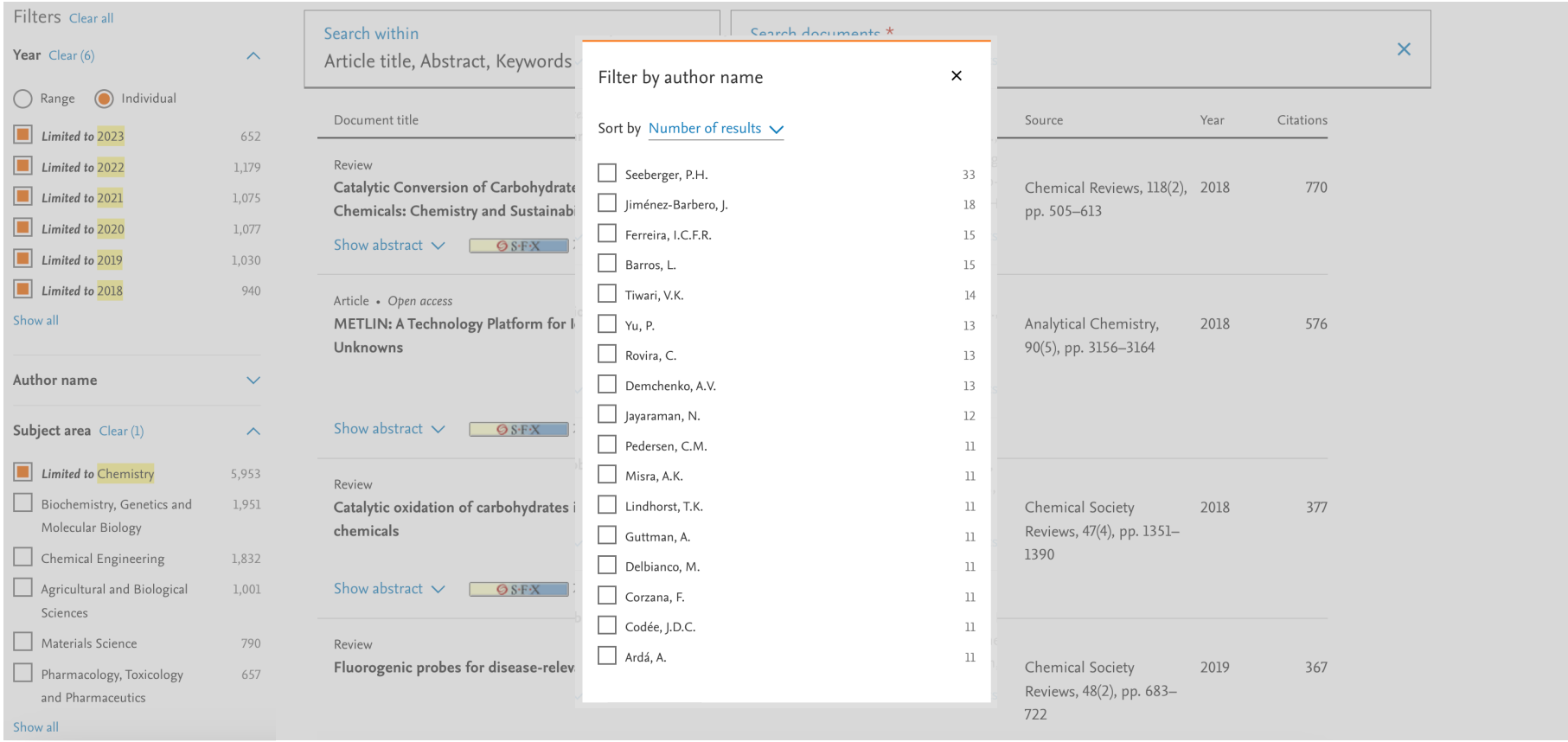
Show all

Search within: Article title, Abstract, Keywords

Search documents *: carbohydrate?

Document title	Authors	Source	Year	Citations
Review **Catalytic Conversion of Carbohydrates to Initial Platform Chemicals: Chemistry and Sustainability** Show abstract SFX View at Publisher Related documents	Mika, L.T., Cséfalvay, E., Németh, Á.	Chemical Reviews, 118(2), pp. 505–613	2018	770
Article • *Open access* **METLIN: A Technology Platform for Identifying Knowns and Unknowns** Show abstract SFX View at Publisher Related documents	Guijas, C., Montenegro-Burke, J.R., Domingo-Almenara, X., ... Benton, H.P., Siuzdak, G.	Analytical Chemistry, 90(5), pp. 3156–3164	2018	576
Review **Catalytic oxidation of carbohydrates into organic acids and furan chemicals** Show abstract SFX View at Publisher Related documents	Zhang, Z., Huber, G.W.	Chemical Society Reviews, 47(4), pp. 1351–1390	2018	377
Review **Fluorogenic probes for disease-relevant enzymes**	Zhang, J., Chai, X., He, X.-P., ...Yoon, J., Tian, H.	Chemical Society Reviews, 48(2), pp. 683–722	2019	367

Main players in chemistry (last 5ys) - Scopus



Author profile - Scopus

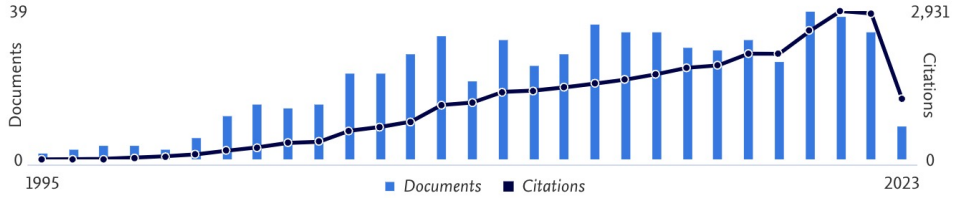
Seeberger, Peter H.

Freie Universität Berlin, Berlin, Germany 7005614371 Connect to ORCID View more

31,621	631	89
Citations by ***18,461 documents***	Documents	*h*-index View *h*-graph

Set alert Save to list Edit profile ••• More

Document & citation trends



Analyze author output Citation overview

Most contributed Topics 2018–2022

Thioglycosides; Glycosylation; Oligosaccharide
36 documents

Alkene; Cross-coupling Reactions; Photocatalysis
9 documents

Mass Spectrometry; Glycomics; Glycosylation
8 documents

View all Topics

631 Documents Cited by 18,461 documents 18 Preprints 1,429 Co-Authors 72 Topics 5 Awarded Grants Beta

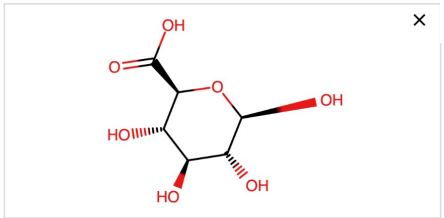
Carbohydrates

From mono to poly saccharides

Diving into the chemistry

back to table of contents

D-glucuronic acid substructures - Reaxys

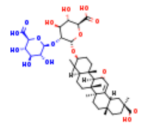


On heteroatoms

24,416 Substances out of 25,484 Documents, containing 45,084 Reactions, 1,024 Targets

Reaxys - 24,416

0 selected | Limit To | Exclude | Export | Preparations | Sort by No of References | Grid | Bioactivity Visualization



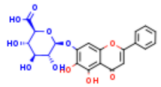
47

glycyrrhizin

$C_{42}H_{62}O_{16}$ 822.945 77922 1405-86-3

Identification | Bioactivity (All) | Spectra - 90
Druglikeness | Physical Data - 37 | Other Data - 463

Preparations - 9
Reactions - 155
Targets - 96
Documents - 5,835



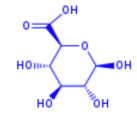
62

baicalin

$C_{21}H_{18}O_{11}$ 446.367 70480 21967-41-9

Identification | Bioactivity (All) | Spectra - 174
Druglikeness | Physical Data - 111 | Other Data - 295

Preparations - 7
Reactions - 200
Targets - 202
Documents - 823



39

D-glucuronic acid

HOC(O)CH(CHOH)4O 194.141 1427744 Retrieve CAS RN

Identification | Bioactivity (All) | Spectra - 50
Druglikeness | Physical Data - 33 | Other Data - 12

Preparations - 124
Reactions - 230
Targets - 6
Documents - 522

Glycyrrhizin Physical data - Reaxys

24,416 Substances out of 25,484 Documents, containing 45,084 Reactions, 1,024 Targets

Reaxys - 24,416

0 selected

Sort by No of References

Grid

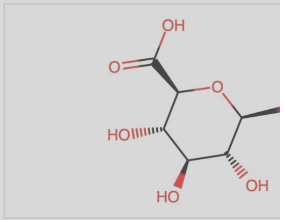
Bioactivity Visualization

Physical Data - 37

Optical Rotatory Power - 5

Show/Hide columns

Type (Optical Rotatory Power)	Concentration (Optical Rotatory Power)	Solvent (Optical Rotatory Power)	Optical Rotatory Power, deg	Wavelength (Optical Rotatory Power), nm	Temperature (Optical Rotatory Power), °C	Reference
[alpha]	1 g/100ml	methanol	52	589	20	Yang, Yong-An; Tang, Wen-Jian; Zhang, Xin; Yuan, Ji-Wen; Liu, Xin-Hua; Zhu, Hai-Liang[**Molecules**, **2014**, vol. 19, # 5, p. 6368 - 6381] Full Text Cited 29 times Details Abstract
[alpha]	1.0 g/100ml	pyridine	61.7	589	20	Saito; Sumita; Kanda; Sasaki[**Chemical and Pharmaceutical Bulletin**, **1994**, vol. 42, # 5, p. 1016 - 1027] Full Text Cited 24 times Details Abstract
[alpha]	1.5 g/100ml	ethanol	49.5	589	20	Ichikawa; Ishida; Sakiya; Akada[**Chemical and Pharmaceutical Bulletin**, **1984**, vol. 32, # 9, p. 3734 - 3738] Full Text Cited 51 times Details Abstract
[alpha]	c=1	ethanol	46.2	589	17	Lythgoe; Trippett[**Journal of the Chemical Society**, **1950**, p. 1983,1988] Full Text Details
[alpha]	p=3	ethanol	58.6	589	20	Voss; Klein; Sauer[**Chemische Berichte**, **1937**, vol. 70, p. 131] Full Text Details



On heteroatoms

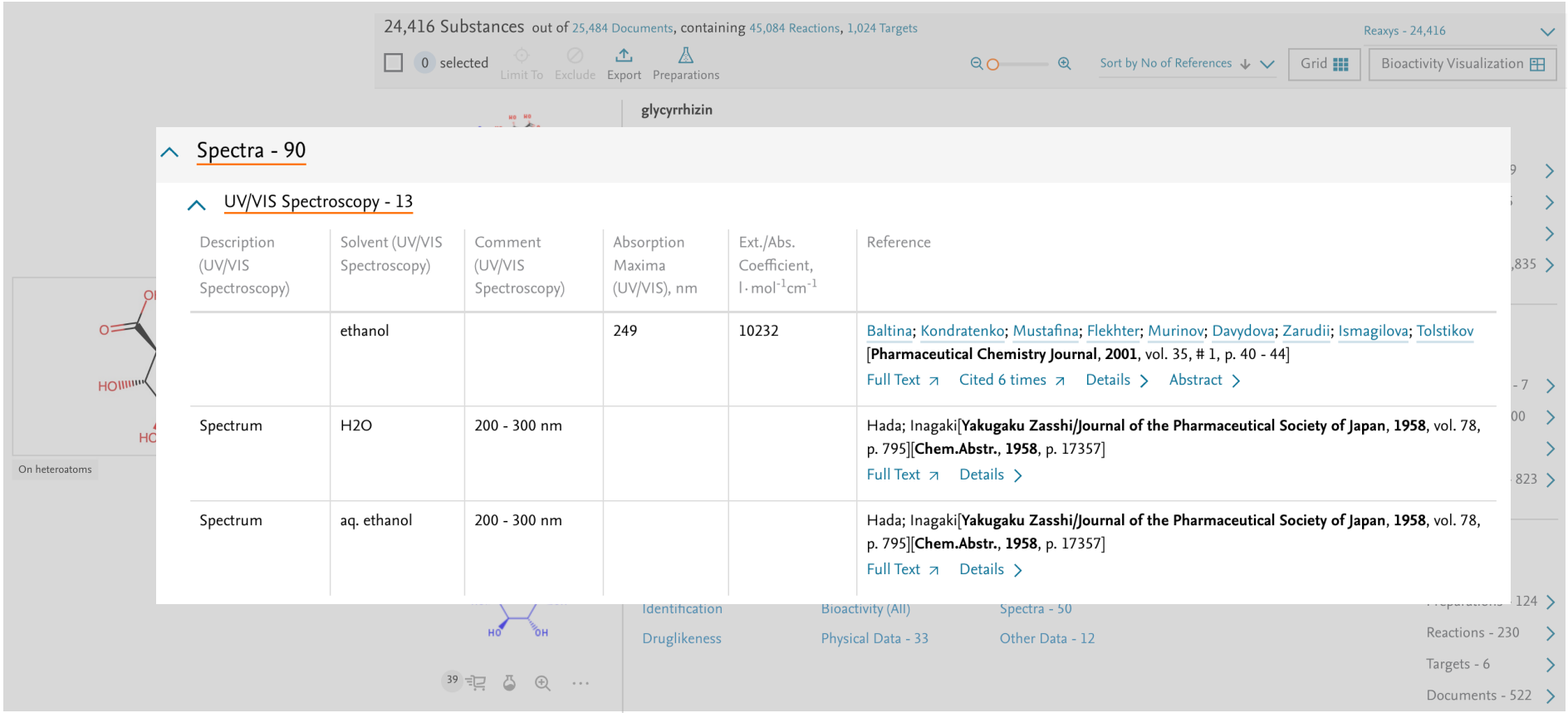
Preparations - 9
Reactions - 155
Targets - 96
Documents - 5,835

Preparations - 7
Reactions - 200
Targets - 202
Documents - 823

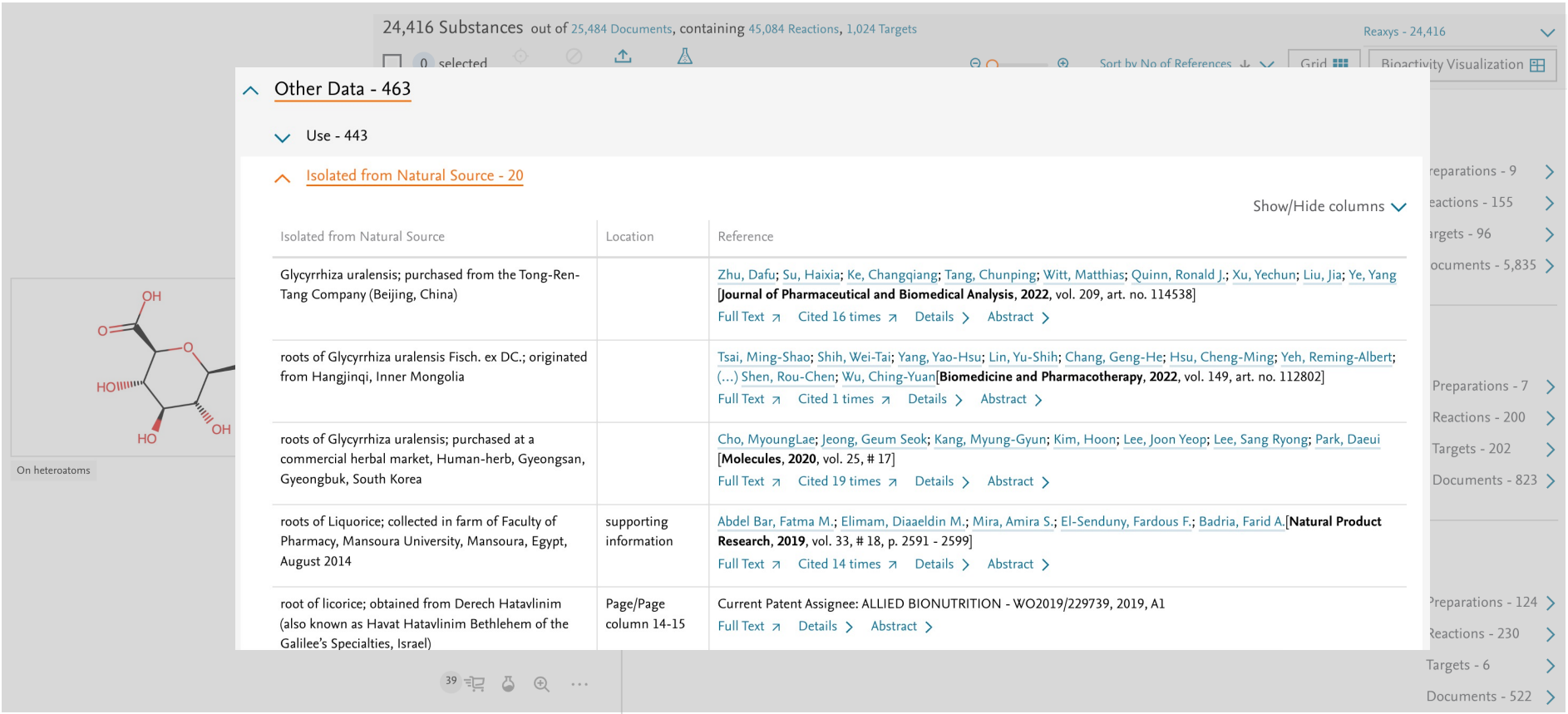
Preparations - 124
Reactions - 230
Targets - 6
Documents - 522

Druglikeness Physical Data - 33 Other Data - 12

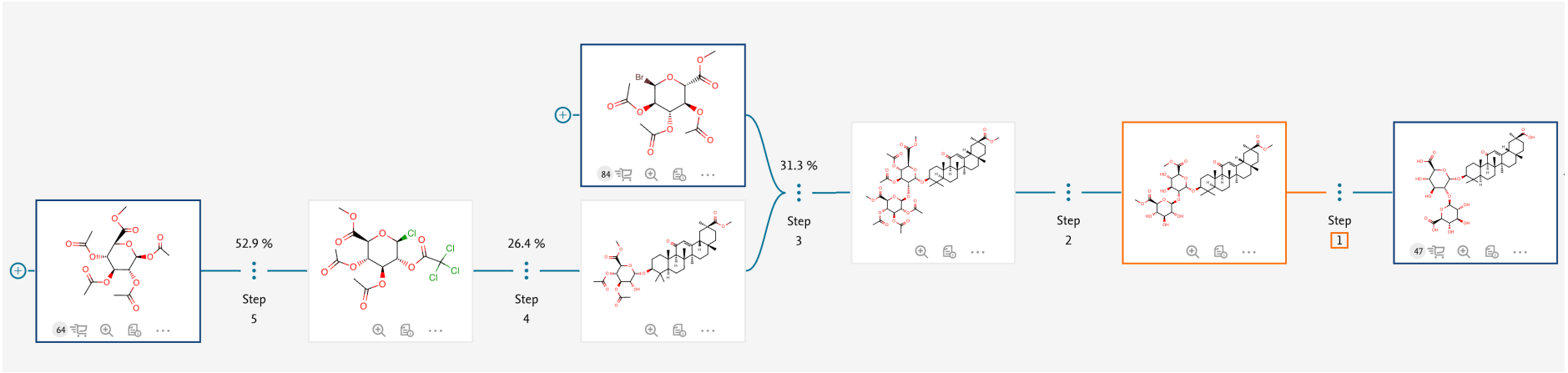
Glycyrrhizin Spectroscopical data - Reaxys



Glycyrrhizin Other data - Reaxys



Glycyrrhizin Synthesis - Reaxys



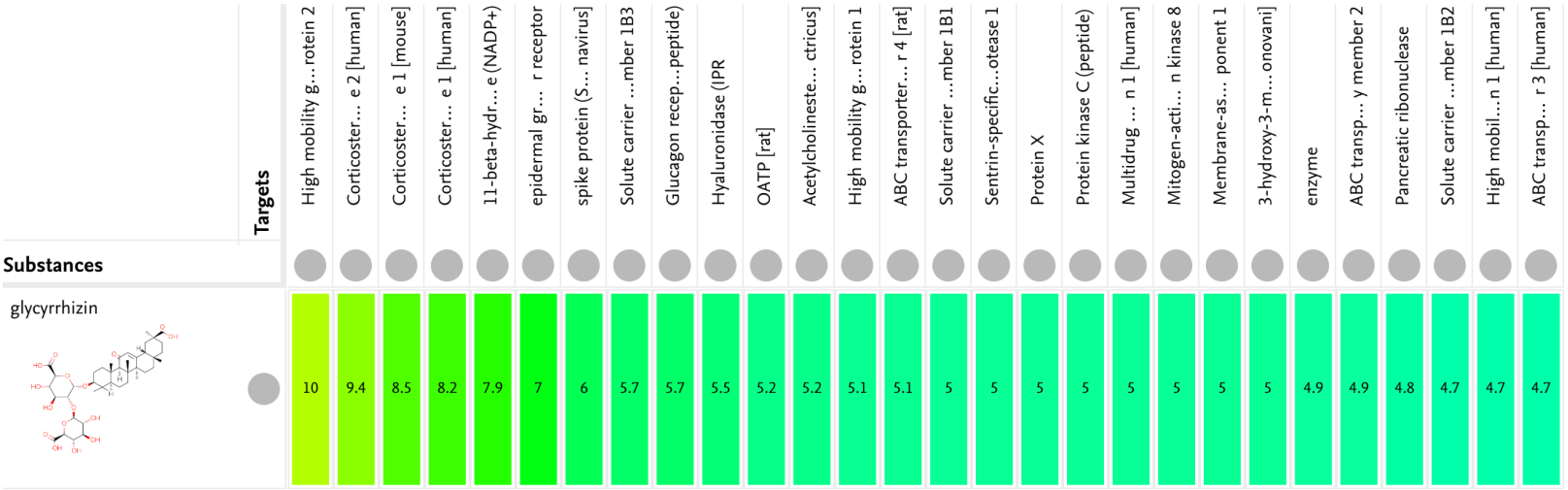
Step 1 | Step 2 | Step 3 | Step 4 | Step 5

Conditions	Yield	Reference
With potassium hydroxide **In** ethanol; water for 2h; Heating; Yield given;		Saito; Sumita; Kanda; Sasaki [**Chemical and Pharmaceutical Bulletin**, **1994**, vol. 42, # 5, p. 1016 - 1027] Full Text ↗ Cited 24 times ↗ Details >

Step 1 | Step 2 | Step 3 | Step 4 | Step 5

Conditions	Yield	Reference
With sodium methylate **In** methanol Ambient temperature;		Saito; Sumita; Kanda; Sasaki [**Chemical and Pharmaceutical Bulletin**, **1994**, vol. 42, # 5, p. 1016 - 1027] Full Text ↗ Cited 24 times ↗ Details >

Glycyrrhizin Bioactivity - Reaxys



Glycyrrhizin Bioactivity - Reaxys

Deep dive into the receptor - Pharmapendium

Glucagon Receptor

Drugs	Active Substance	Mechanism Of Action	Primary/Secondary	Source
Dasiglucagon Hydro...	Dasiglucagon	Agonist	Primary	FDA
Glucagon	Glucagon	Agonist	Primary	EMA FDA
Glucagon Recombin...	-	-	Primary	MOSBY MEYLER
Glucagon Recombin...	Glucagon	Agonist	Primary	FDA

Pharmacokinetic Data

Clinical Data	1177
Preclinical Data	869
All Data	2046

Metabolizing Enz & Trans. Data

Clinical Data	20
Preclinical Data	43
All Data	63

Drug Safety Data

Clinical Data	2101
Preclinical Data	473
All Data	2574

Efficacy Data

Clinical Data	5350
Preclinical Data	74

FAERS Data

Post-Marketing Reports(AERS)	1038

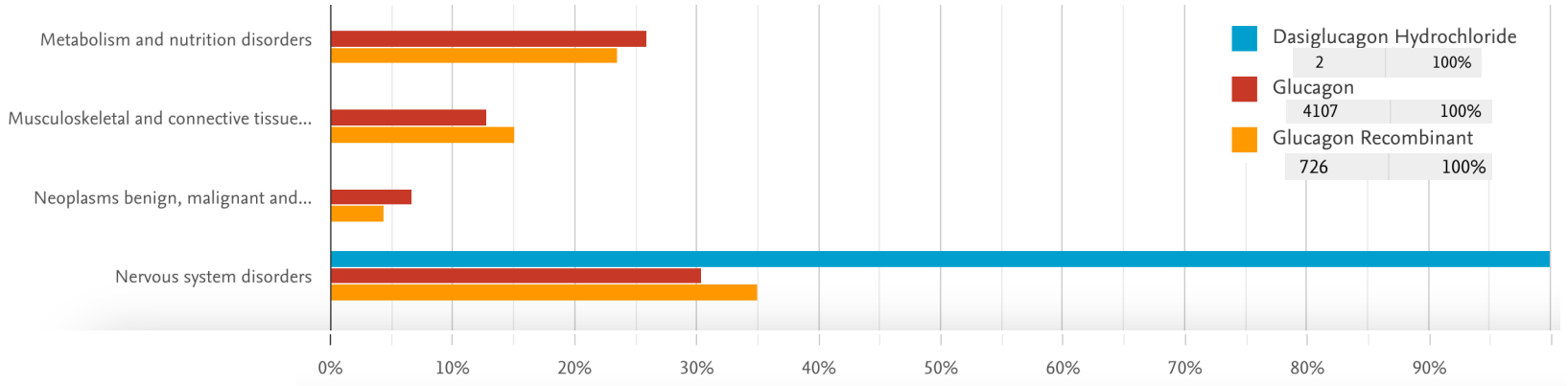
Activity Data

In vitro	165

Pharmacokinetic Clinical data - Pharmapendium

Drug	Dose	Route	Parameter	Parameter Value	Source	Year
Glucagon Recombinant (Not radiolabelled)	0.25 mg	Intravenous	Cmax	37.0 ng/mL	*FDA approval package document:* Approval Package (Page:26) View Full Study PDF 980k	1998
Glucagon Recombinant (Not radiolabelled)	0.25 mg	Intravenous	Vd	18.5 L	*FDA approval package document:* Approval Package (Page:24) View Full Study PDF 1472k	1998
Glucagon (Not radiolabelled)	0.25-2 mg	Intravenous	T1/2	0.13h - 0.3h	*FDA approval package document:* Clinical Pharmacology and Biopharmaceutics Review (Page:12) View Full Study PDF 5222k	2019
Glucagon (Not radiolabelled)	0.25-2 mg	Intravenous	CL	59.0 L/h	*FDA approval package document:* Clinical Pharmacology and Biopharmaceutics Review (Page:12) View Full Study PDF 5222k	2019

FAERS - Pharmapendium



Glycyrrhizic Adverse drug reaction - Embase

'glycyrrhizic acid'/exp/mj/'adverse drug reaction','drug toxicity','drug interaction' OR **'glycyrrhizic acid-induced'**:de,ab,ti 241

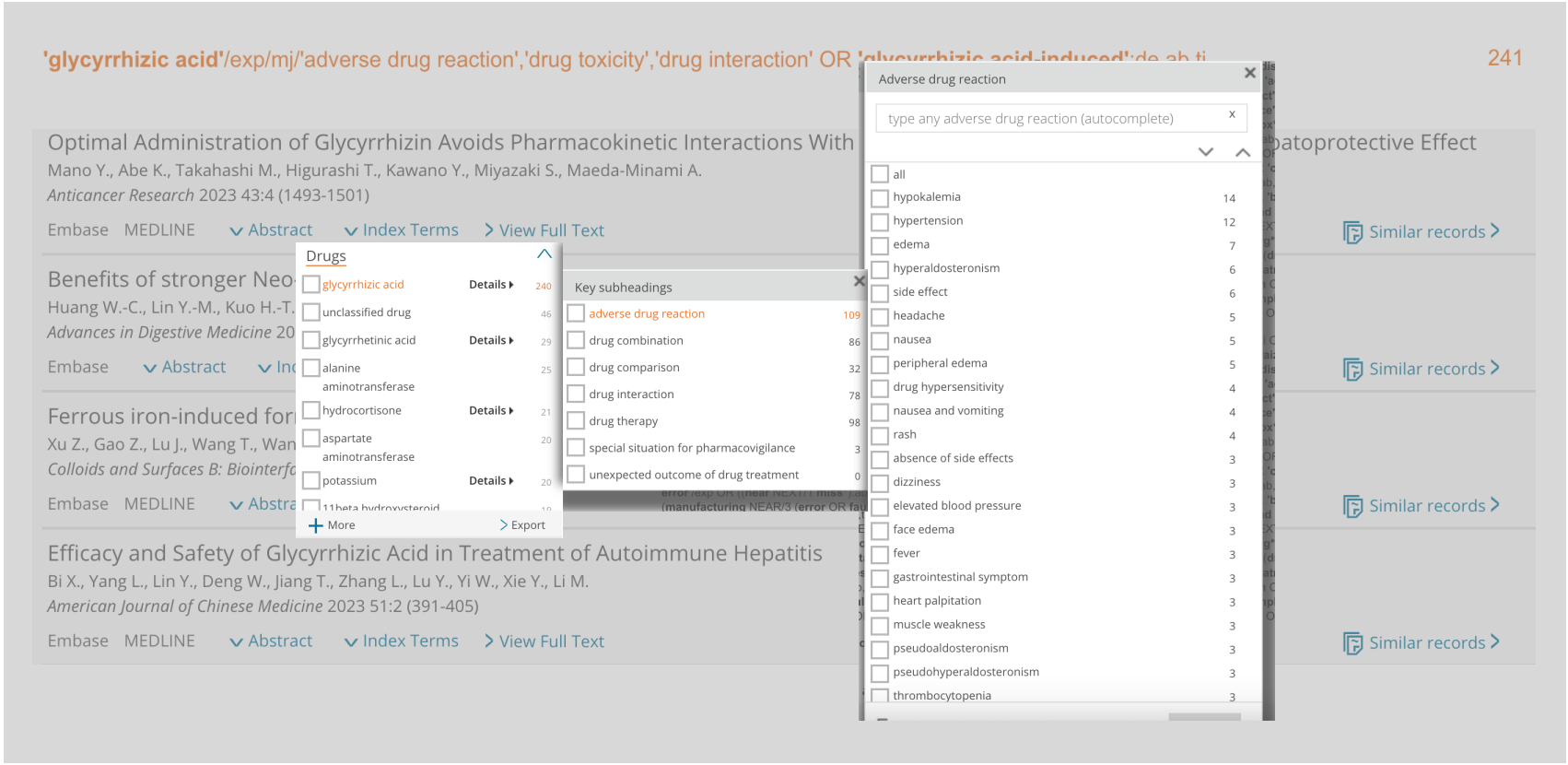
Optimal Administration of Glycyrrhizin Avoids Pharmacokinetic Interactions With High-dose Methotrexate and Exerts a Hepatoprotective Effect
Mano Y., Abe K., Takahashi M., Higurashi T., Kawano Y., Miyazaki S., Maeda-Minami A.
Anticancer Research 2023 43:4 (1493-1501)
Embase MEDLINE Abstract Index Terms View Full Text Similar records

Benefits of stronger Neo-Minophagen C in acute hepatitis after transarterial chemoembolization therapy for hepatomas
Huang W.-C., Lin Y.-M., Kuo H.-T., Sheu M.-J., Feng Y.-H., Feng I.-C., Sun C.-S., Hsieh P.-H., Lim P.-P., Chen C.-H.
Advances in Digestive Medicine 2023 10:1 (8-14)
Embase Abstract Index Terms View Full Text Similar records

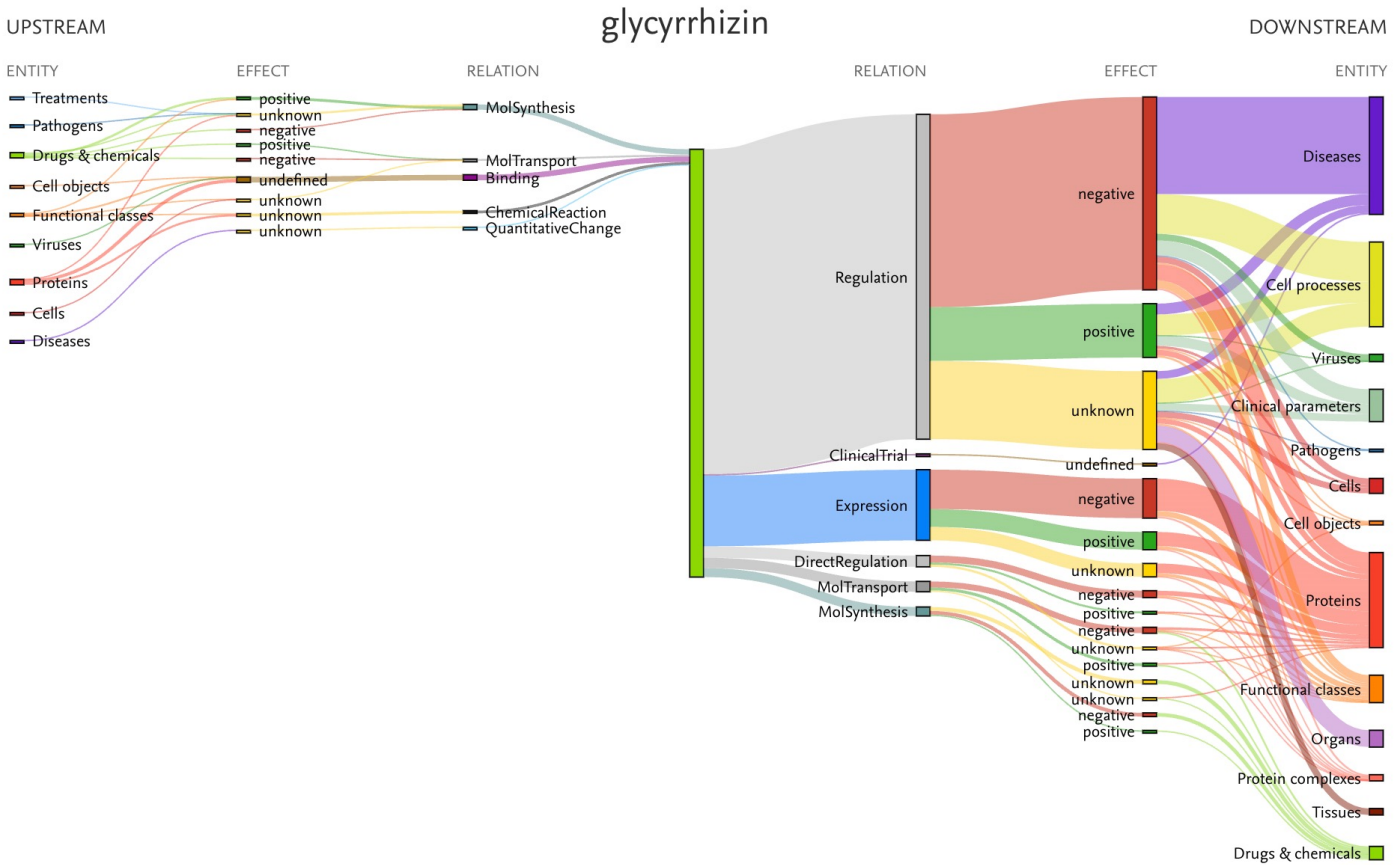
Ferrous iron-induced formation of glycyrrhizic acid hydrogels for Staphylococcus aureus-infected wound healing
Xu Z., Gao Z., Lu J., Wang T., Wang W., Fan L., Xi J., Han B.
Colloids and Surfaces B: Biointerfaces 2023 221 Article Number 112977
Embase MEDLINE Abstract Index Terms View Full Text Similar records

Efficacy and Safety of Glycyrrhizic Acid in Treatment of Autoimmune Hepatitis
Bi X., Yang L., Lin Y., Deng W., Jiang T., Zhang L., Lu Y., Yi W., Xie Y., Li M.
American Journal of Chinese Medicine 2023 51:2 (391-405)
Embase MEDLINE Abstract Index Terms View Full Text Similar records

Glycyrrhizic Adverse drug reaction - Embase

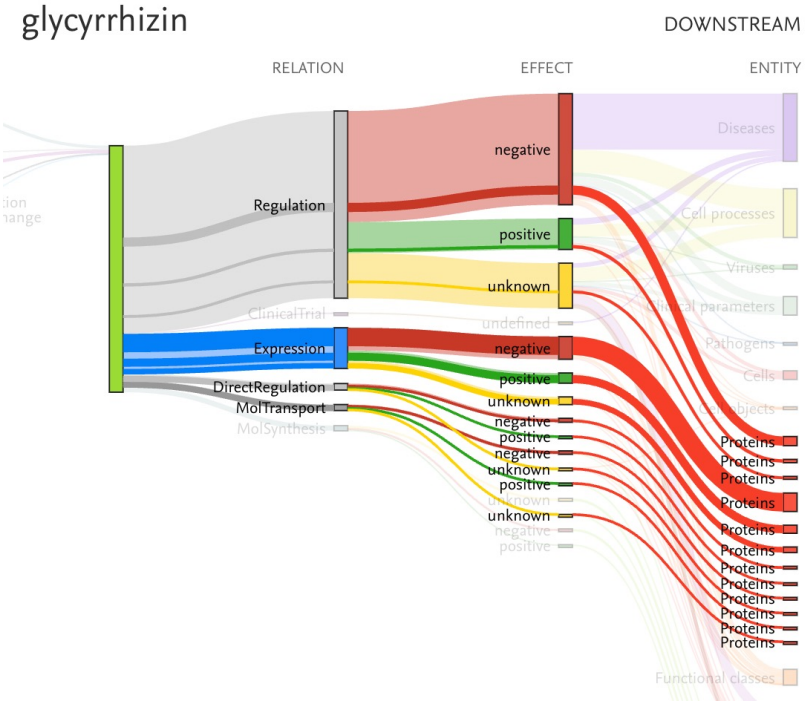


Biological Insights - EmBiology



Biological Insights - EmBiology

Relation filters Effect: ALL × | Relation Types: ALL × | Direction: downstream × **Concept filters** Proteins: ALL × 615 results



Glycyrrhizin prevents 3-nitropropionic acid-induced neurotoxicity by downregulating HMGB1/TLR4/NF-κB p65 signaling, and attenuating oxidative stress, inflammation, and apoptosis in rats.

2023

A.M. Gendy, A.E. El-Haddad, K.A. Ahmed, A. Soubh, H.M. El-Sadek, M.M. Amin, M.K. El-Sayed

Relations: 2 Abstract Full text ↗

Relation N°1 1 snippet ^

glycyrrhizin has a positive "Expression" relationship with BDNF.

5 References ↗

Snippet 1 of 1

Furthermore, Glycyrrhizin switched the HMGB1/TLR4/NF-κB p65 signaling off, reduced IL-6, IL-β, TNF-α, caspase-3, and increased Bcl-2 as well as BDNF.

Relation N°2 1 snippet ^

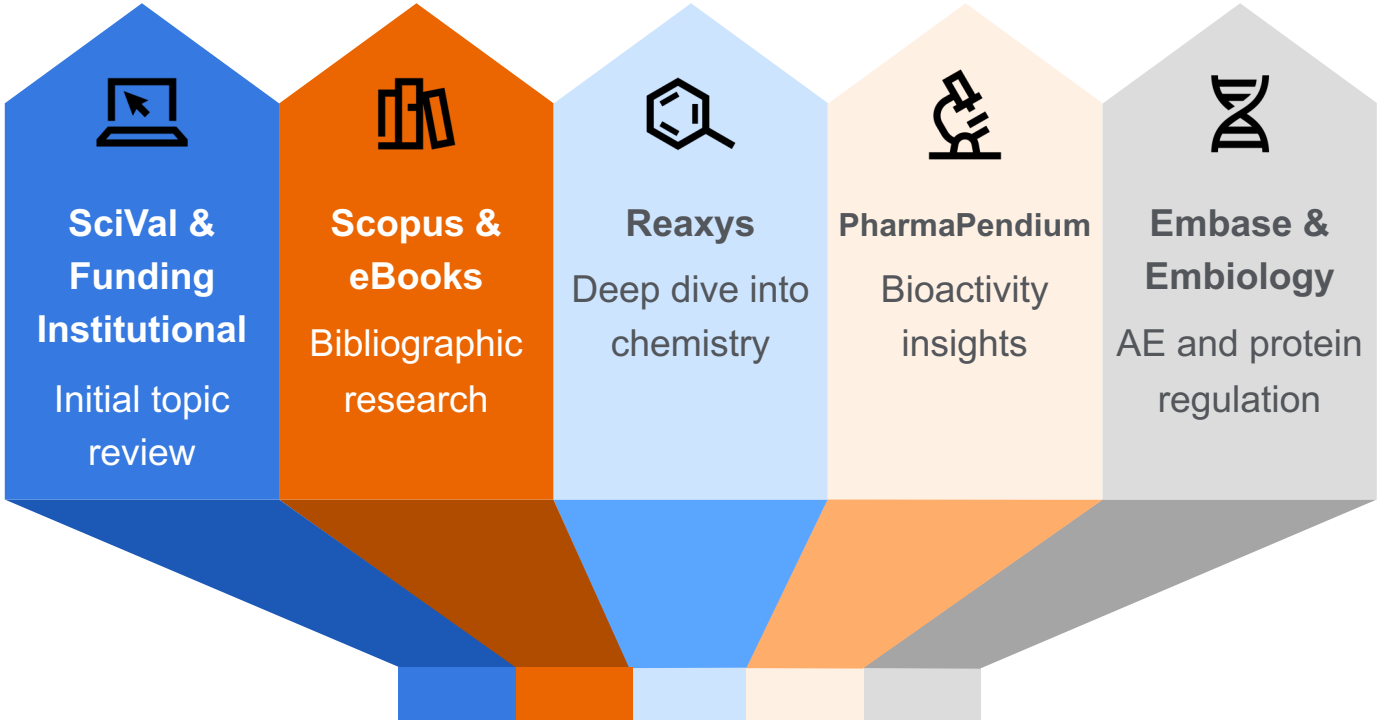
glycyrrhizin has a positive "Expression" relationship with BCL2.

6 References ↗

Snippet 1 of 1

Furthermore, Glycyrrhizin switched the HMGB1/TLR4/NF-κB p65 signaling off, reduced IL-6, IL-β, TNF-α, caspase-3, and increased Bcl-2 as well as BDNF.

The Elsevier's Chemistry journey



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Thank you!