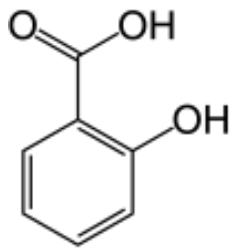
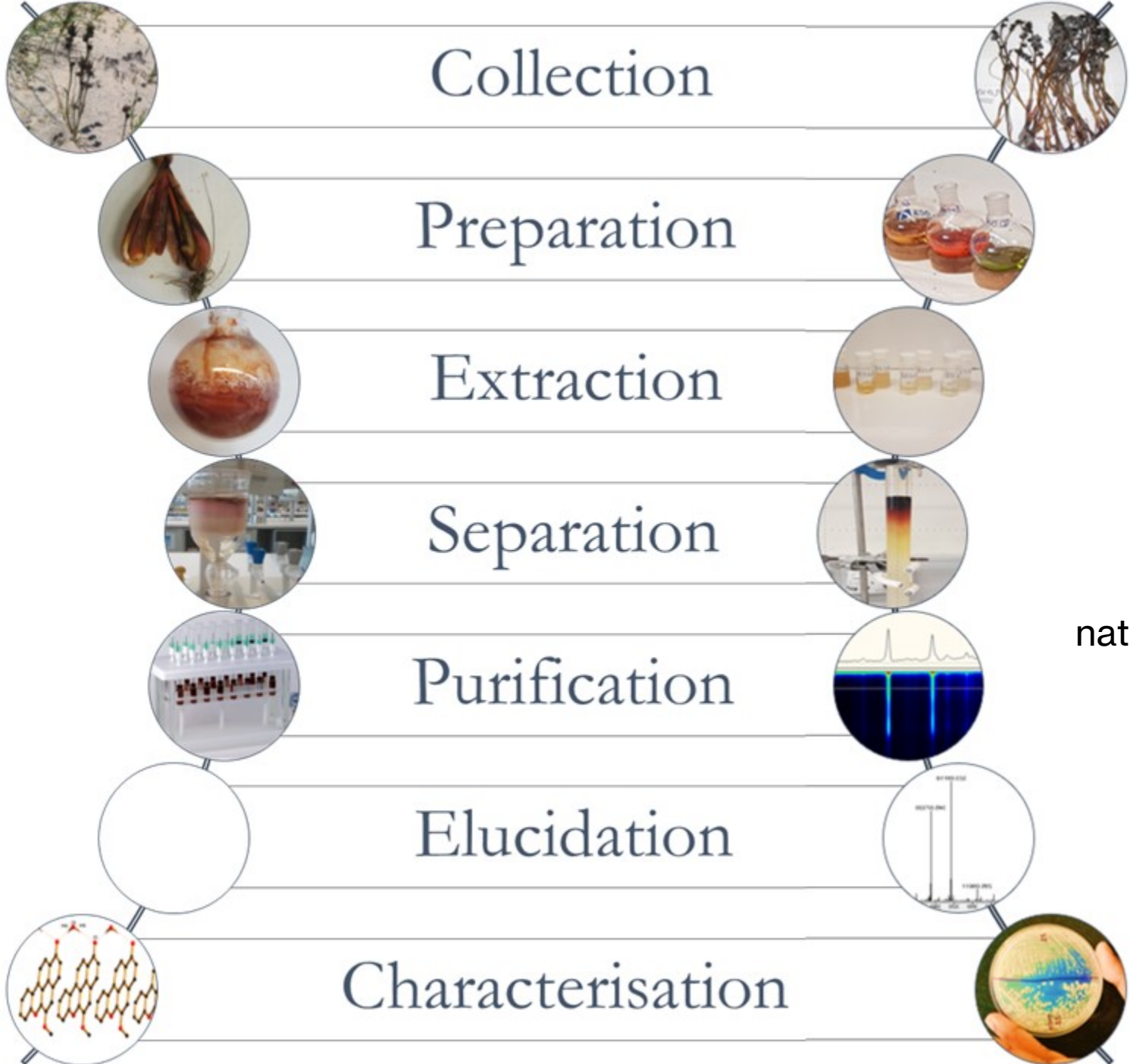


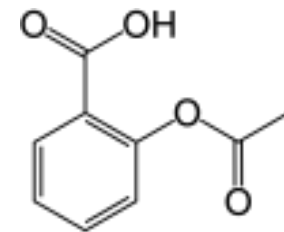


RAG in the Life Sciences (Customary Medicinal Flora of Australia)

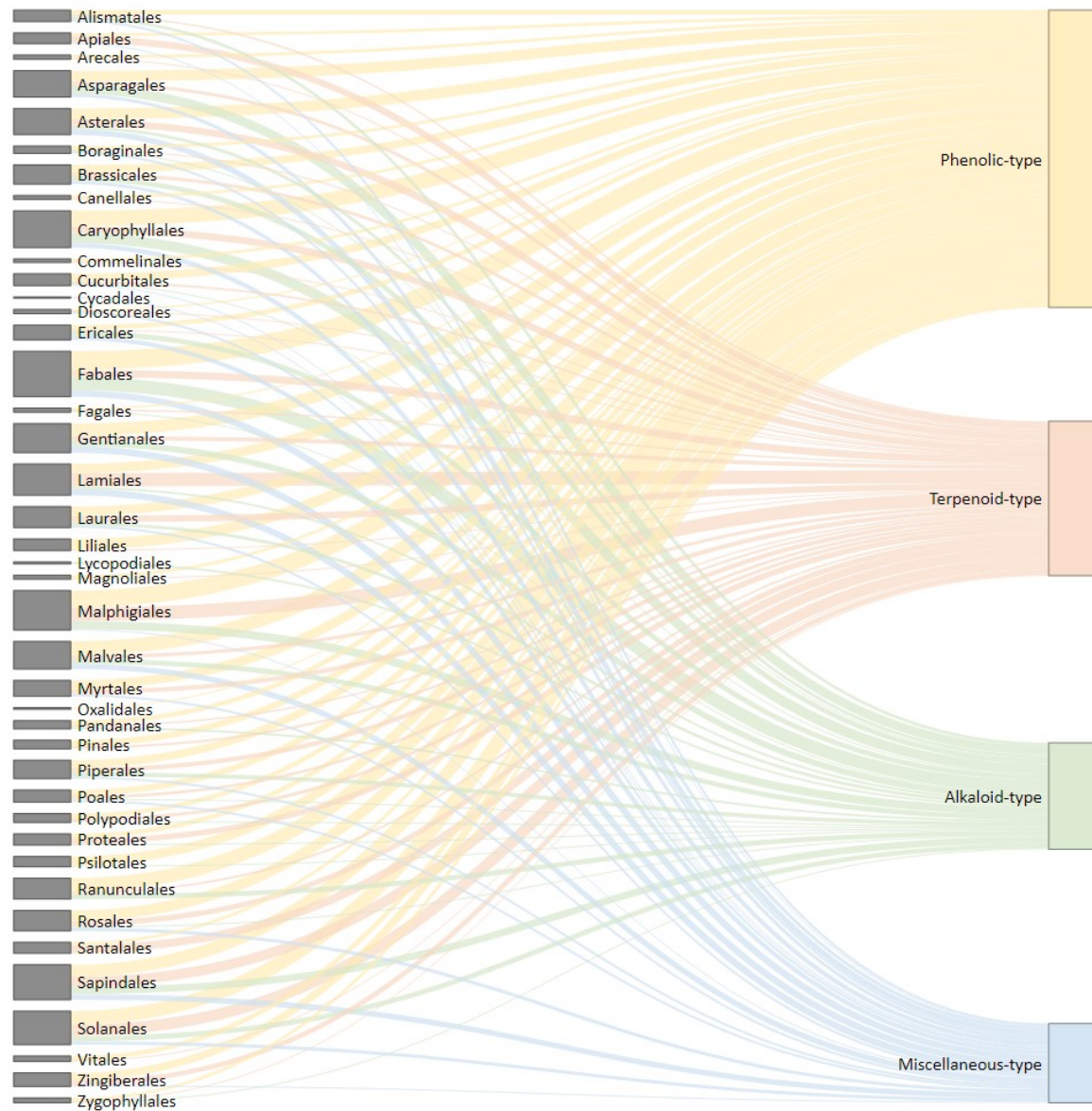
Dr. Edward Owen Norman
UNSW, RMIT
(Schools of Biomedical Science, CSE, Chemistry)



salicylic acid
natural product
Salix alba

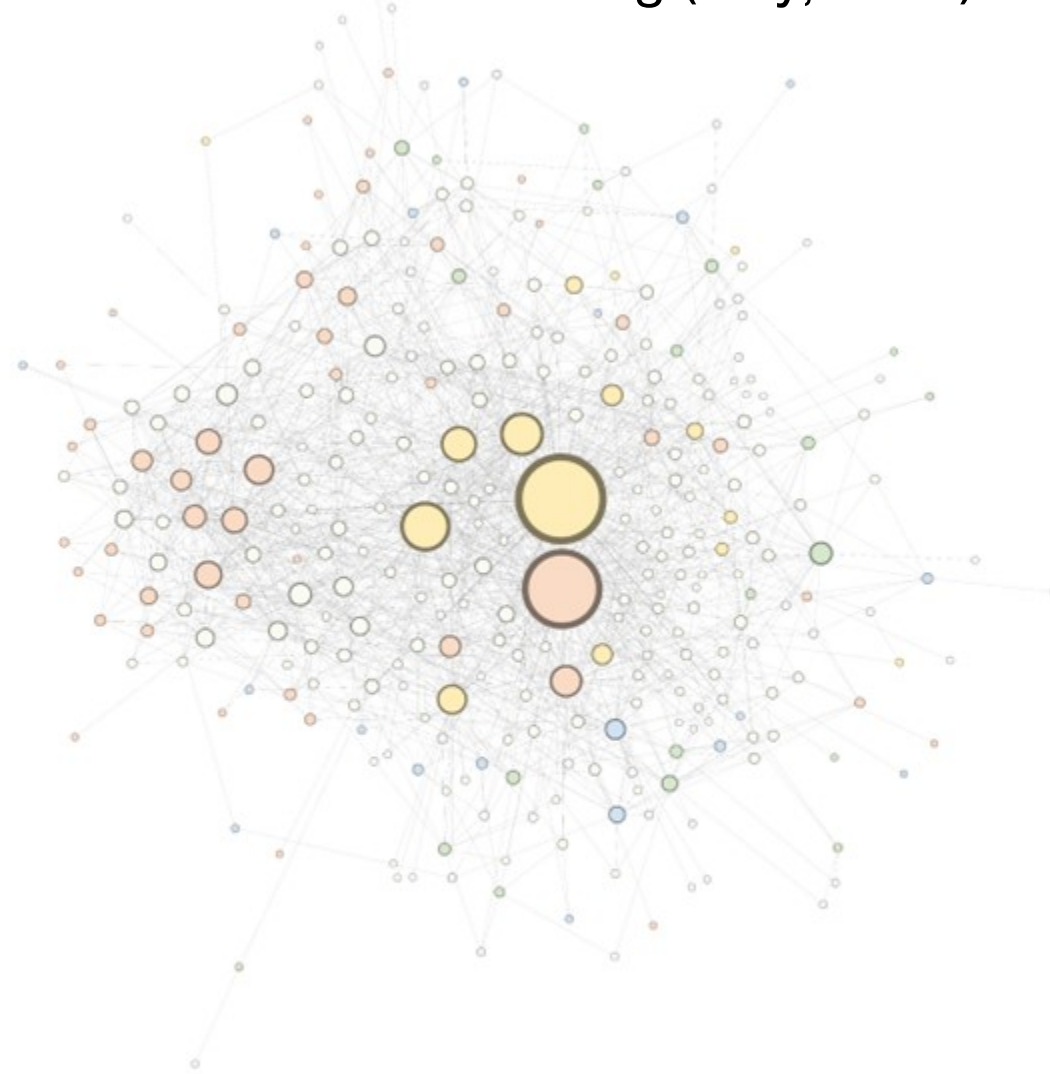


acetylsalicylic acid
natural product derivative
Aspirin



Distribution of Australian customary medicinal flora across coarse-grained NP categories

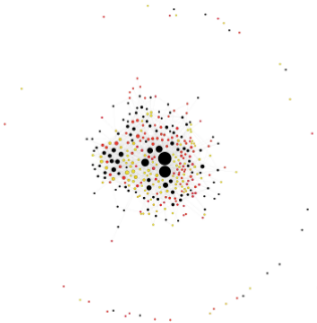
Norman, Serrurier and Urban, Specialised Metabolites of Australia's Customary Medicinal Flora, CSIRO Publishing (May, 2025)





Search By

Genus, Infraclass or Customary Use



Welcome to Customary Medicinal Flora of Australia Database

Search a genus, infraclass or customary use or start chatting

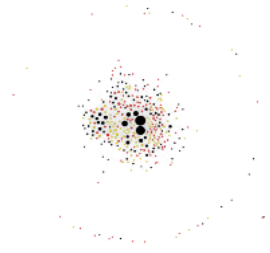
Describe the chemistry of genus Acacia.

Which Australian plants are used for toothache?

What are the therapeutic uses of members of the Myrtaceae?

Chat with the assistant...





Search
Myrtaceae

Chat

Filter Search

Search



Genus

Infraclass

Customary Use

Any

Search result for
'Myrtaceae'

Order: Myrtales

48 results found

8 genera found

20 infraclasses found

20 usages found

[Angophora](#)

[Asteromyrtus](#)

[Corymbia](#)

[Eucalyptus](#)

[Eugenia](#)

[Melaleuca](#)

[Syncarpia](#)

[Syzgium](#)

You
What are the therapeutic uses of members of the Myrtaceae?

Medicinal Flora Assistant

Based on the data available, members of the Myrtaceae family have a wide range of therapeutic uses. The genera belonging to Myrtaceae (Eucalyptus, Angophora, Melaleuca, Syzygium, and Syncarpia) are associated with the following medicinal applications:

1. Digestive issues: Diarrhoea, Stomach problems, Laxative
2. Pain relief: Toothache, Headache, Other Analgesic (pain relief)
3. Respiratory problems: Cough
4. Infections and immune support: Bactericidal, Fever, Parasites
5. Skin conditions: Emolient (soothing/moisturizing), Skin issues, Bites
6. Anti-inflammatory: Inflammation
7. Eye problems: Eyes
8. General health: Tonic
9. Nervous system: Sedative
10. Reproductive health: Venereal diseases

Additionally, some uses are listed as 'Industrial' and 'Misc.' (miscellaneous), which may include other applications not specifically mentioned.

Chat with the assistant...



This is a Generative AI based educational tool which may make mistakes. [See network projection.](#)

You
Is there any chemistry common across these genera?

Medicinal Flora Assistant

Based on the analysis of the chemical classes associated with the genera in the Myrtaceae family (Eucalyptus, Angophora, Melaleuca, Syzygium, and Syncarpia), there are indeed common chemistry patterns across these genera. The main chemical classes found are:

1. Terpenoid-type compounds: This is the most common class, with 18 occurrences across the genera.
2. Phenolic-type compounds: The second most common class, with 13 occurrences.
3. Miscellaneous-type compounds: Less common, with 2 occurrences.

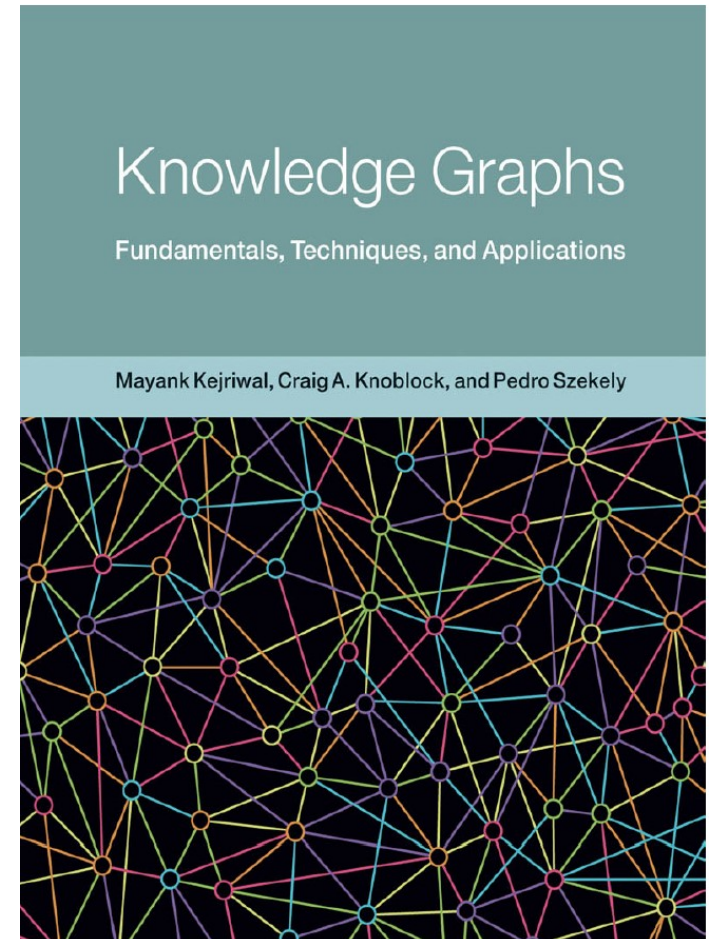
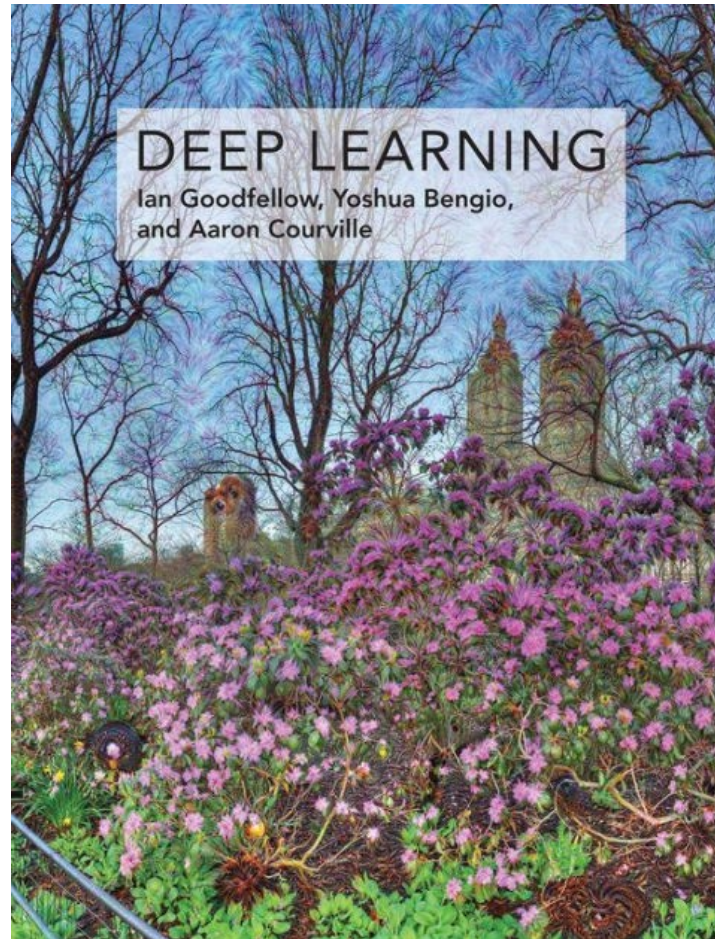
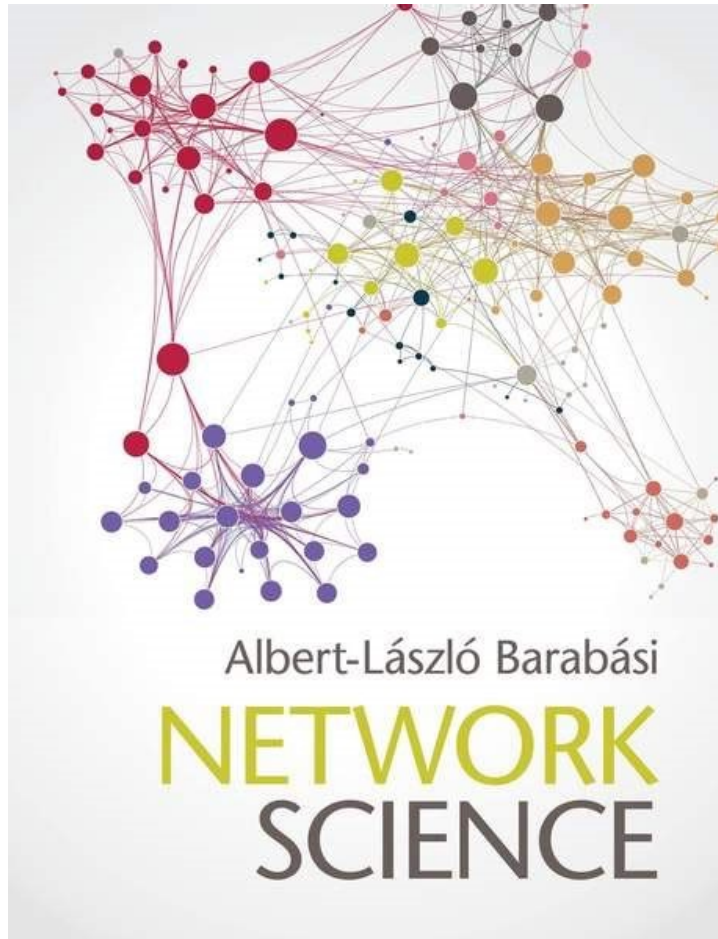
The prevalence of terpenoid-type and phenolic-type compounds suggests that these are characteristic chemical classes for the Myrtaceae family. Terpenoids are known for their aromatic properties and various biological activities, which could contribute to the diverse therapeutic uses of Myrtaceae plants. Phenolic compounds are often associated with antioxidant properties and other health benefits.

This common chemistry across the genera of Myrtaceae likely contributes to the similar therapeutic applications observed in these plants. However, it's important to note that

Chat with the assistant...



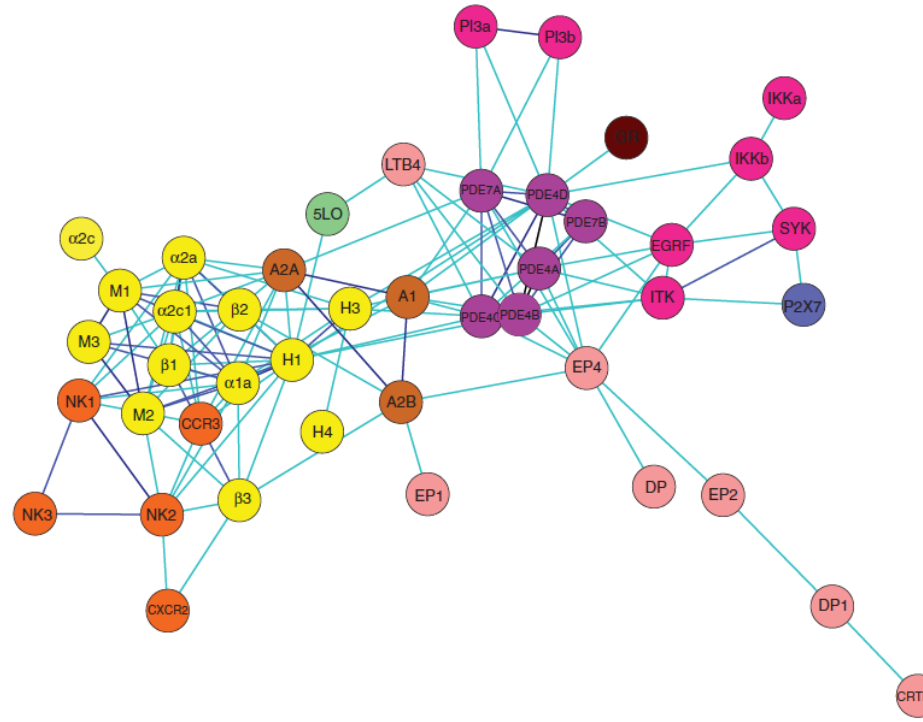
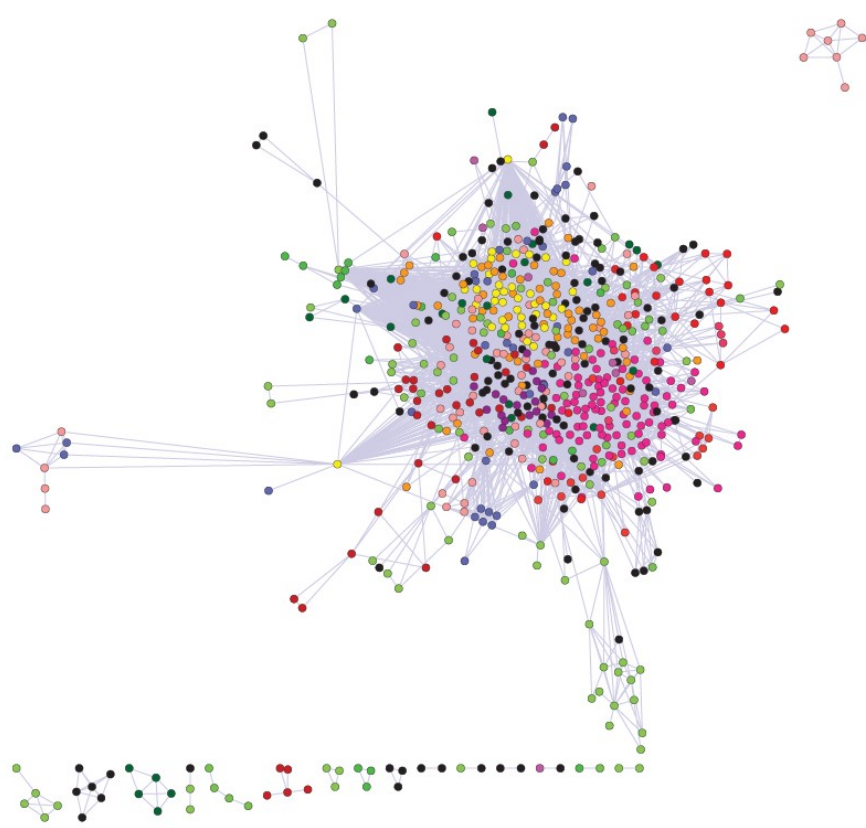
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Pósfai, M. and Barabási, A.L., 2016. *Network science*. Cambridge, UK:: Cambridge University Press.

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nature
chemical biology

Network pharmacology: the next paradigm in drug discovery

cited by: 4223!

Andrew L Hopkins



A review on graph neural networks for predicting synergistic drug combinations

Milad Besharatifard⁴ · Fatemeh Vafaei^{1,2,3,4}

Accepted: 20 December 2023 / Published online: 13 February 2024
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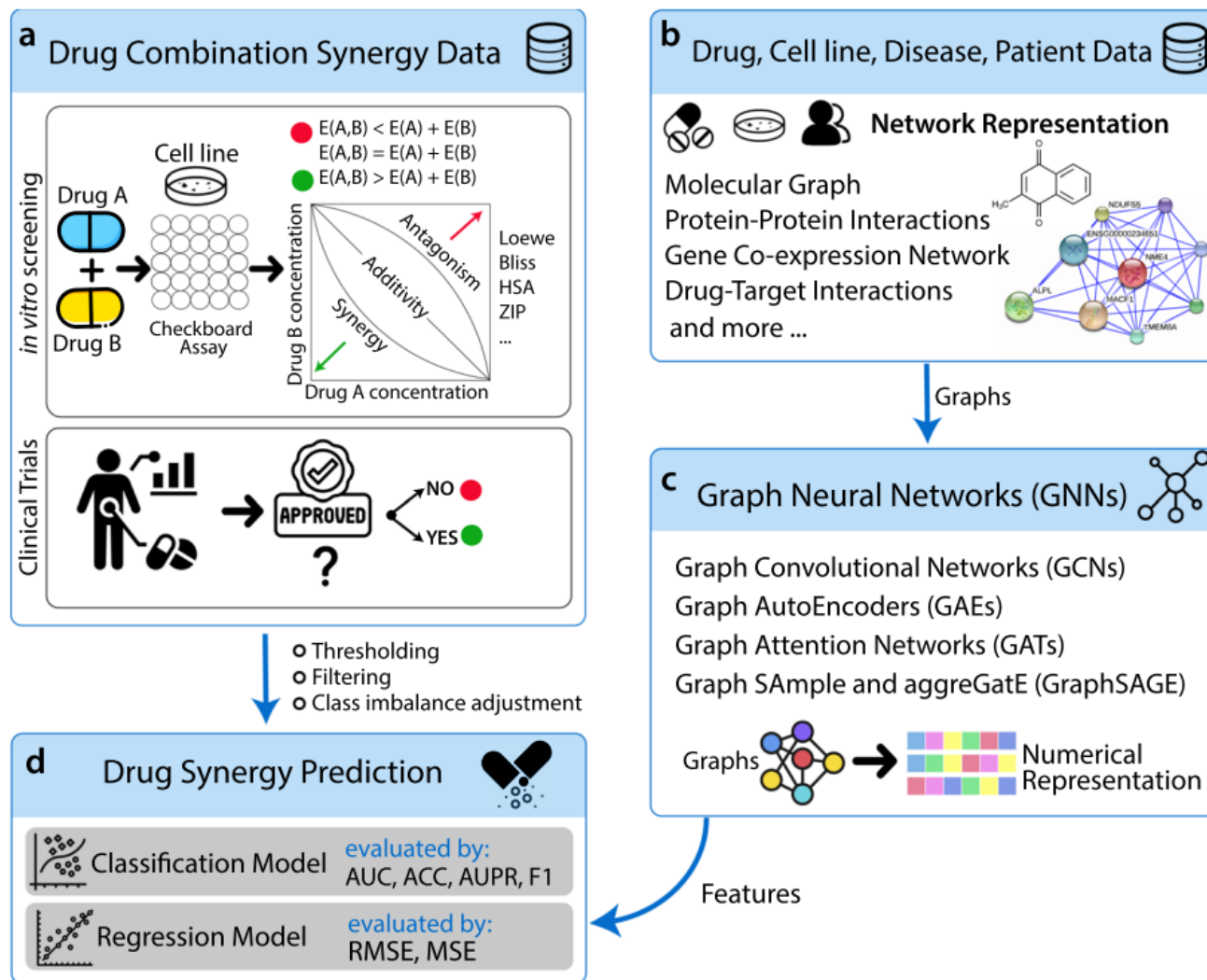
UNSW
SYDNEY

Associate Professor

Associate Professor
Fatemeh Vafaei

Science

School of Biotech & Biomolecular Science



HTINet2: herb-target prediction via knowledge graph embedding and residual-like graph neural network

Pengbo Duan ¹, Kuo Yang ^{1,*}, Xin Su ¹, Shuyue Fan ¹, Xin Dong ¹, Fenghui Zhang ¹, Xianan Li ¹, Xiaoyan Xing ², Qiang Zhu ¹, Jian Yu ¹, Xuezhong Zhou ^{1,*}

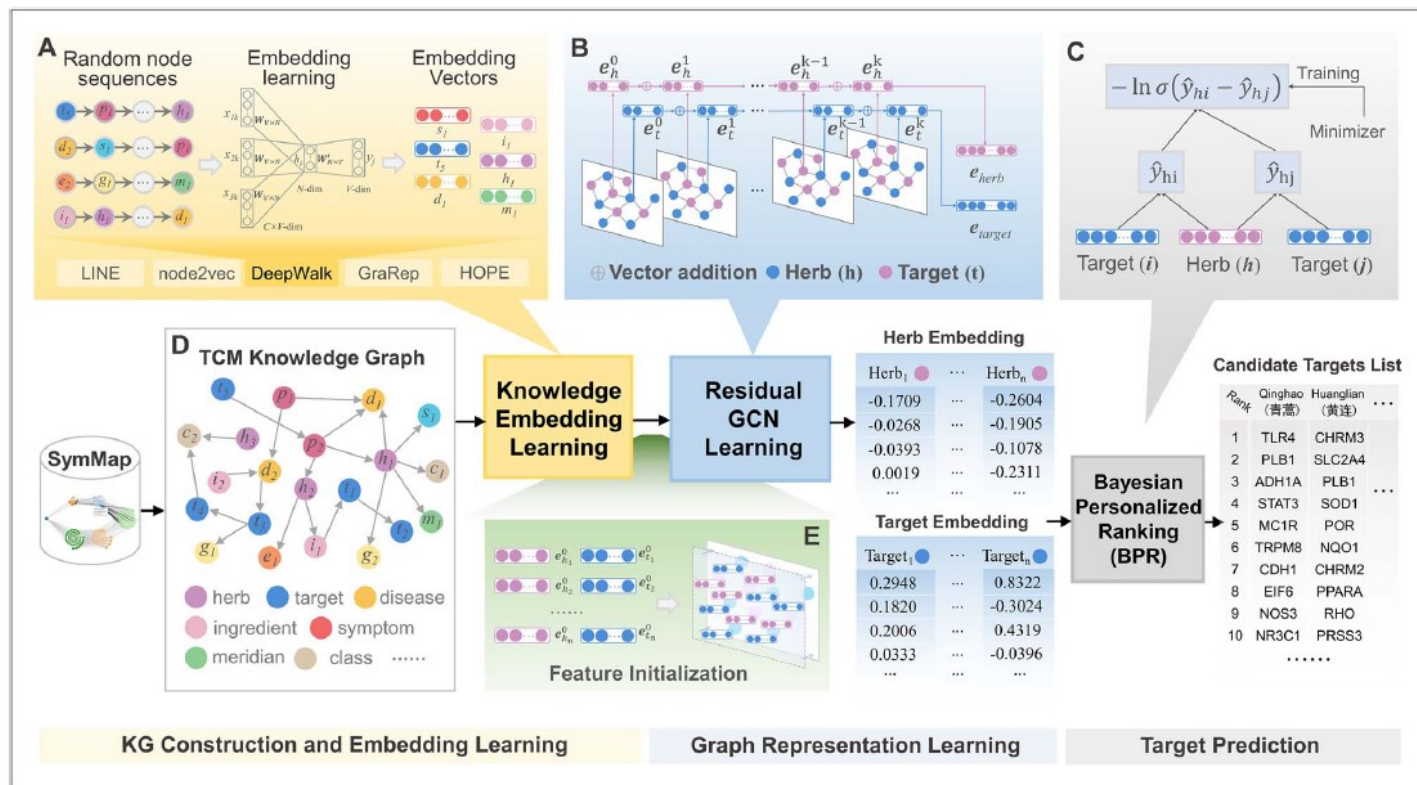


Figure 1. Overall architecture of HTINet2; HTINet2 consists of three key modules, i.e. KG construction and embedding learning (A and D), graph representation learning (B and E), and target prediction (C).



Databases and ontologies

KRAGEN: a knowledge graph-enhanced RAG framework for biomedical problem solving using large language models

Nicholas Matsumoto¹, Jay Moran¹, Hyunjun Choi¹, Miguel E. Hernandez¹, Mythreye Venkatesan¹, Paul Wang¹, Jason H. Moore^{1,*}

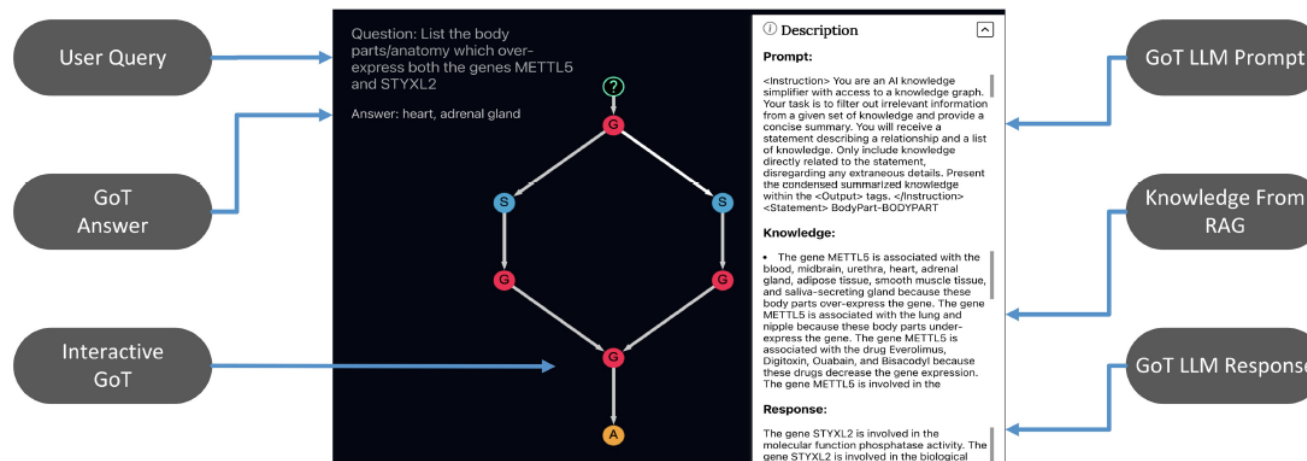
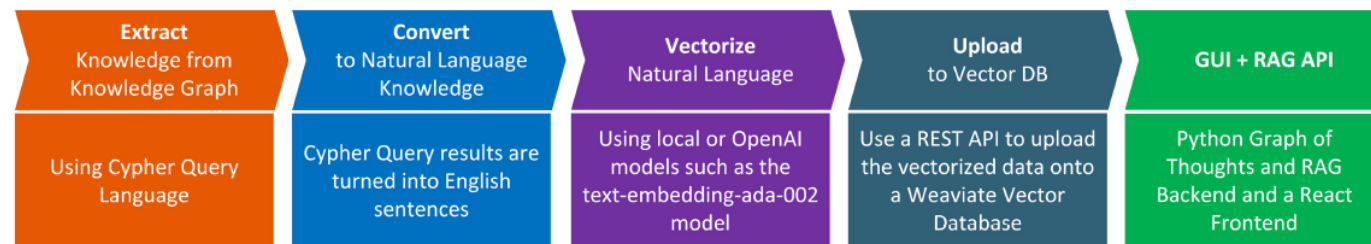


Figure 1. Application flow chart (above) from extraction of knowledge from a knowledge graph, to converting the knowledge graph dump into a list of natural language statements, vectorizing the knowledge and uploading to a vector database, and deploying the KRAGEN GUI (bottom) where the user can ask elaborate questions and view the Graph-Of-Thoughts prompting to view the intuition and knowledge used to solve the problem.

References

(in order of appearance)

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thank you!