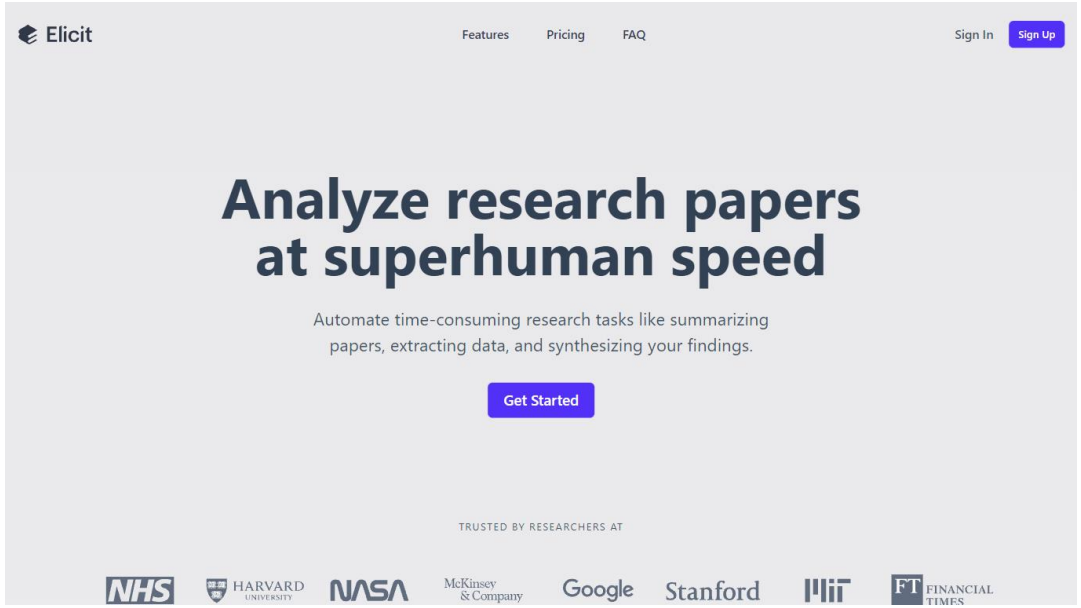
Elicit, ScholarGPT, ResearchRabbit, Connectpapers, SciSpace

Experimental Laboratory for Investigating Collaboration, Information-sharing, and Trust

¿Qué es ELICIT?

- Laboratorio experimental para investigar en colaboración, compartir información y confianza (Experimental Laboratory for Investigating Collaboration, Information-sharing, and Trust)
- El Programa de Investigación de Comando y Control (CCRP) del Departamento de Defensa de EE. UU. (OASD/NII) patrocinó el diseño y desarrollo de la plataforma ELICIT para la experimentación centrada en fenómenos de dominio informativo, cognitivo y social.



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Find papers

How has the use of artificial intelligence tools influenced the study of siderophores?

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Impact of AI on Siderophore Research

How has the use of artificial intelligence tools influenced the study of siderophores?

Summary of top 4 papers

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Artificial intelligence tools have significantly advanced the study of siderophores, microbial iron chelators crucial for pathogenicity. Bioinformatics applications, particularly in-silico genome mining, have revolutionized the discovery and annotation of fungal siderophores produced by non-ribosomal peptide synthetases (Subramanian et al., 2021). Mass spectrometry techniques, including ICP-MS and high-resolution separations, enable characterization of siderophores in complex samples, facilitating their use as disease biomarkers and potential drugs (Pluháček et al., 2015). AI-driven approaches have also contributed to the development of artificial siderophores, such as squaraine dyes, for iron(III) detection (Wallace et al., 2005). These advancements have expanded the potential applications of siderophores in various fields, including medicine, biochemistry, and agriculture. Furthermore, the synthesis of siderophore-drug conjugates shows promise in developing species-selective active drug transport systems to combat drug-resistant microbial infections (Roosenberg et al., 2000).

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Paper	Abstract summary
Bioinformatics Applications in Fungal Siderophores: Omics Implications Devika Subramanian +2 2021 · 1 citation DOI	Bioinformatics and omics-based techniques can facilitate the identification and annotation of novel fungal siderophores.
Characterization of microbial siderophores by mass spectrometry. T. Pluháček +5 Mass spectrometry reviews (Print) 2015 · 58 citations DOI	This paper reviews mass spectrometry techniques for characterizing microbial siderophores, but does not discuss the influence of artificial intelligence tools.
An artificial siderophore for the detection of iron(III). Karl J. Wallace +4 Dalton Transactions	This paper describes the development of an artificial siderophore that can detect iron(III) through an optical response.

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Bioinformatics Applications in Fungal Siderophores: Omics Implications

Devika Subramanian, Vijina Chakkyarath, J. Natarajan

2021 1 citation Semantic Scholar DOI

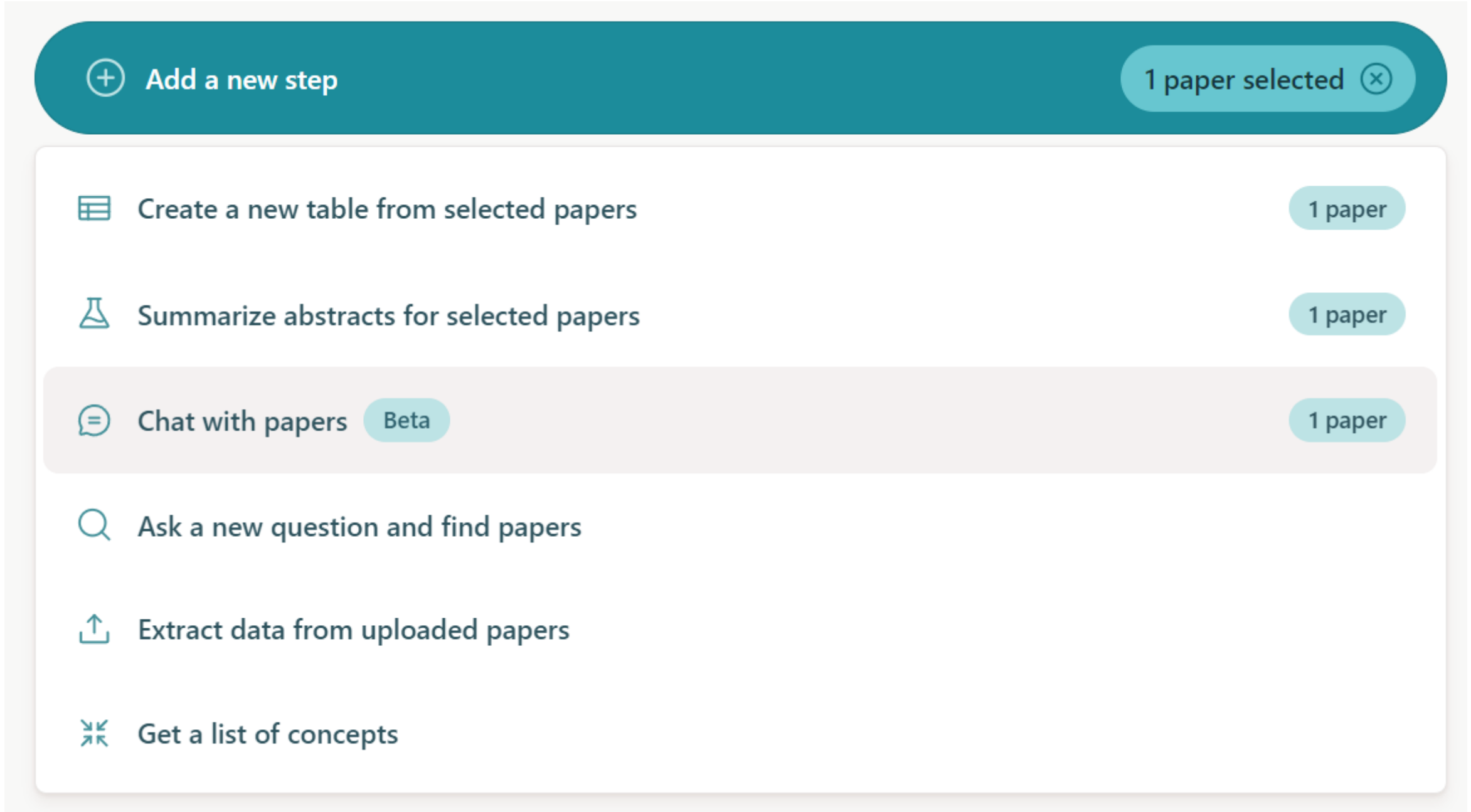
Abstract summary

Bioinformatics and omics-based techniques can facilitate the identification and annotation of novel fungal siderophores.

Summary

The summary of this paper is that it provides an overview of current methodologies and recent progress in the areas of bioinformatics related to omics-based discovery and analysis of fungal siderophores.

The 'omics' era driven by advanced genomic and metabolomic analysis has revolutionized the discovery and annotation of secondary metabolites and their pre-cursors. Some of the most important organisms that produce secondary metabolites belong to the eukaryotic kingdom of fungi. Fungal siderophores are secondary metabolites synthesized by non-ribosomal peptide synthetases (NRPSs) in fungi and play an important role in iron uptake. In-silico genome mining is an efficient high-throughput approach to reveal potential NRPS genes. Analytical pipelines that link genomics with other omics such as proteomics and metabolomics data are under development and can facilitate the study of such natural products. Yet, siderophore analysis using computational tools tend to be focused on prokaryotes leading to an obvious bias in data availability as well as algorithm development for fungal research. Hence, it is important to review the differences and test the applicability of available tools on fungal data. Generation, curation and organization of siderophore-producing fungal NRPS data are essential to develop and train prediction/classification models for fungal siderophores. Existing algorithms for the identification of NRPS integrated with high-throughput omics-based techniques can lead to the identification and annotation of novel siderophores with novel biological significances. The current chapter provides an overview of current methodologies and recent progress in the areas of bioinformatics related to omics-based discovery and analysis of fungal siderophores.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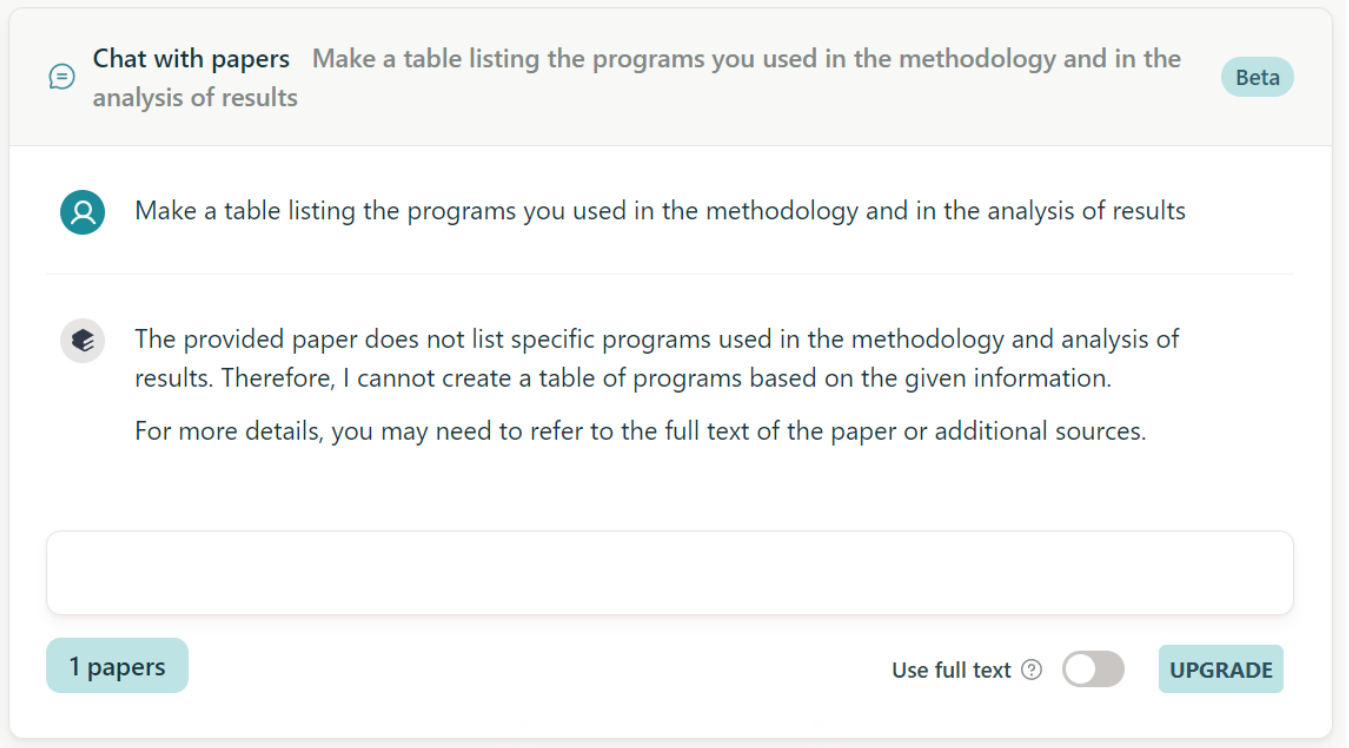
Chatea con el paper

The ‘omics’ era driven by advanced genomic and metabolomic analysis has revolutionized the discovery and annotation of secondary metabolites and their pre-cursors. Some of the most important organisms that produce secondary metabolites belong to the eukaryotic kingdom of fungi. Fungal siderophores are secondary metabolites synthesized by non-ribosomal peptide synthetases (NRPSs) in fungi and play an important role in iron uptake. In-silico genome mining is an efficient high-throughput approach to reveal potential NRPS genes. Analytical pipelines that link genomics with other omics such as proteomics and metabolomics data are under development and can facilitate the study of such natural products. Yet, siderophore analysis using computational tools tend to be focused on prokaryotes leading to an obvious bias in data availability as well as algorithm development for fungal research. Hence, it is important to review the differences and test the applicability of available tools on fungal data. Generation, curation and organization of siderophore-producing fungal NRPS data are essential to develop and train prediction/classification models for fungal siderophores. Existing algorithms for the identification of NRPS integrated with high-throughput omics-based techniques can lead to the identification and annotation of novel siderophores with novel biological significances. The current chapter provides an overview of current methodologies and recent progress in the areas of bioinformatics related to omics-based discovery and analysis of fungal siderophores.



ScholarGPT

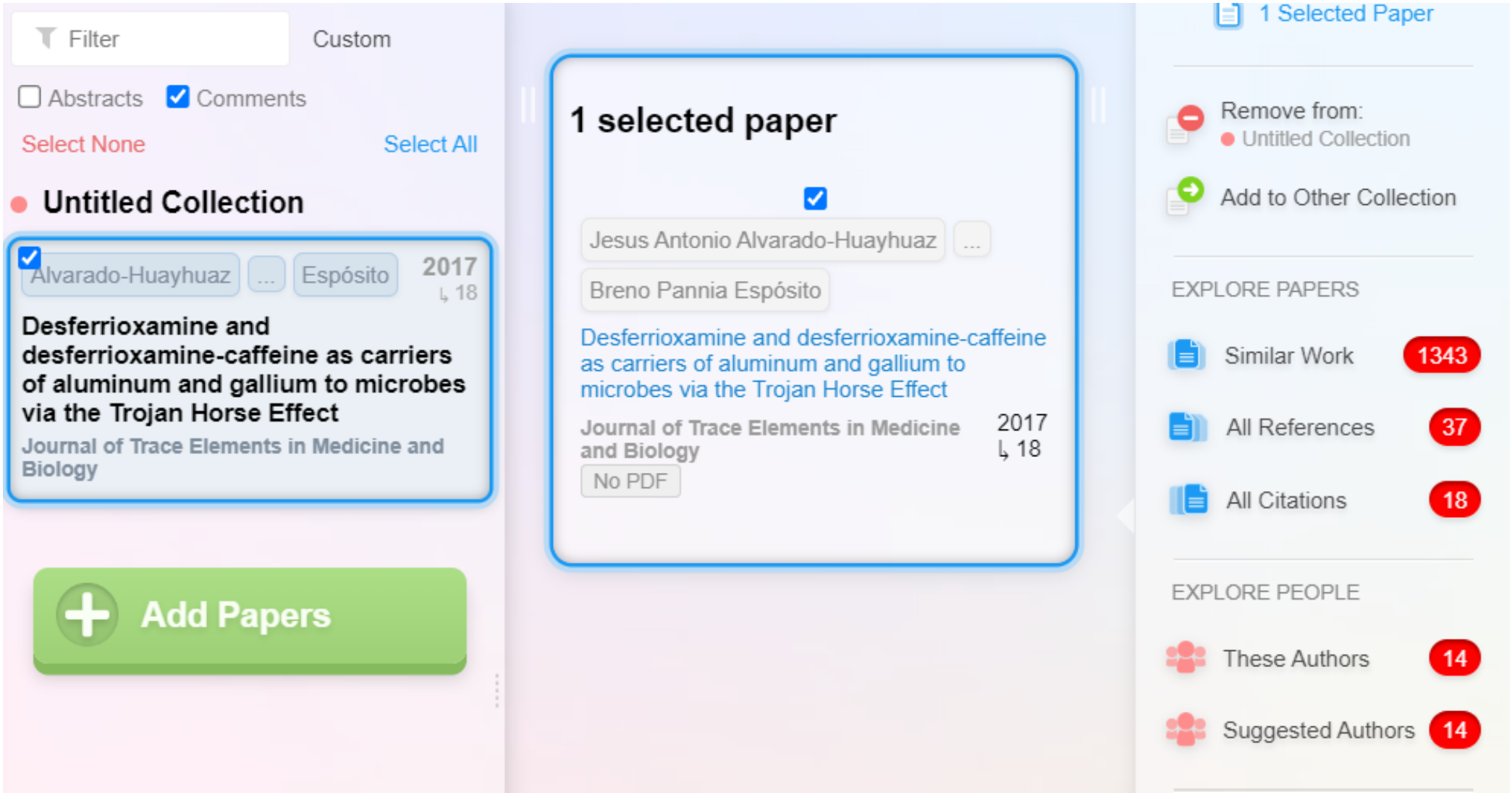
haz una tabla con 10 articulos que abordan cómo el uso de inteligencia artificial puede potenciar el estudio de sideróforos

Aquí tienes una tabla con 10 artículos que abordan cómo el uso de la inteligencia artificial (IA) puede potenciar el estudio de sideróforos:

Título del Artículo	Autores	Año	Revista	Resumen	Enlace
AI-Based Screening of Siderophore-Producing Bacteria	Li et al.	2022	Journal of Microbial Biotechnology	Aplicación de algoritmos de IA para identificar bacterias productoras de sideróforos.	Link
Application of Machine Learning in Siderophore Prediction	Smith et al.	2021	Computational Biology Journal	Uso de aprendizaje automático para predecir la producción de sideróforos en diferentes condiciones ambientales.	Link
Enhancing Siderophore Research through AI-Driven Metabolic Pathway Analysis	Johnson et al.	2020	Biochemical Engineering Journal	Análisis de vías metabólicas mediante IA para optimizar la producción de sideróforos.	Link
AI-Powered High-Throughput Screening for Siderophore	Wang et al.	2019	Applied Microbiology and Biotechnology	Implementación de IA en procesos de cribado de alto rendimiento para descubrir	Link

ResearchRabbit

https://doi.org/10.1016/j.jtemb.2017.01.006



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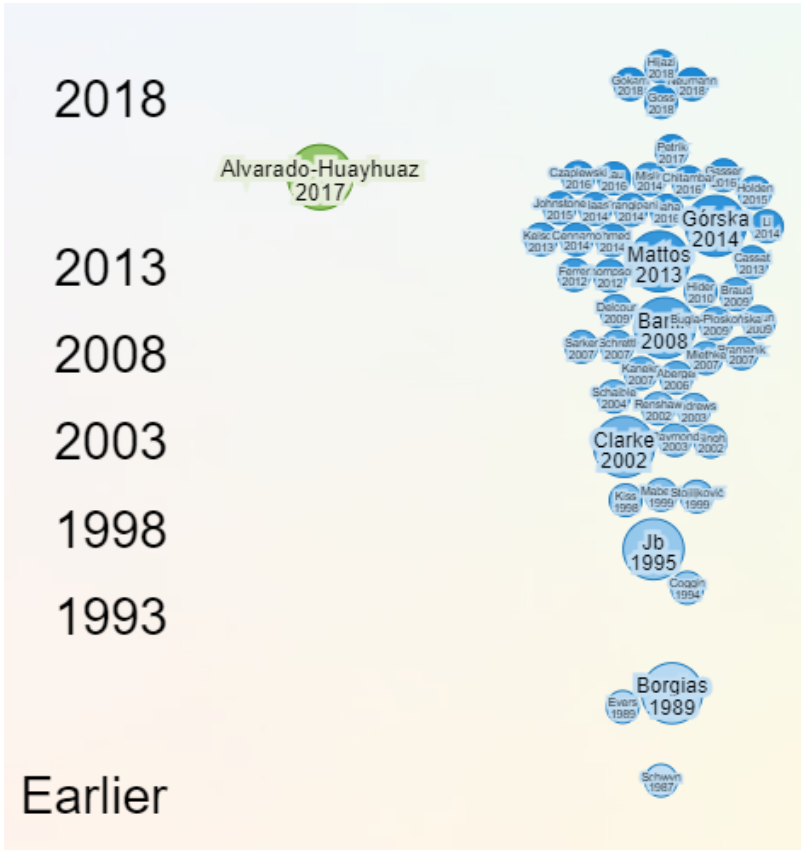

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Saha ... Tribedi — 2016 — ↳ 463

Microbial siderophores and their potential applications: a review

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Siderophore-Based Iron Acquisition and Pathogen Control

Microbiology and Molecular Biology Reviews

Chitambar | Chitambar — 2016 — ↳ 167

Gallium and its competing roles with iron in biological systems.

Biochimica et Biophysica Acta

Braun ... Bohn — 2009 — ↳ 198

Sideromycins: tools and antibiotics

Biometals

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The potential of desferrioxamine-gallium as an anti-Pseudomonas therapeutic agent

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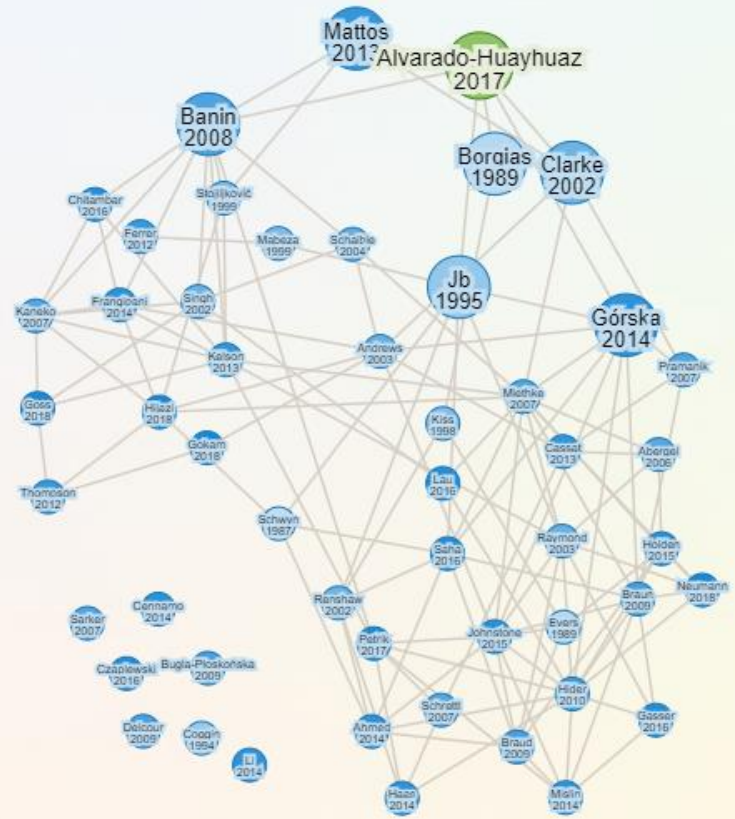

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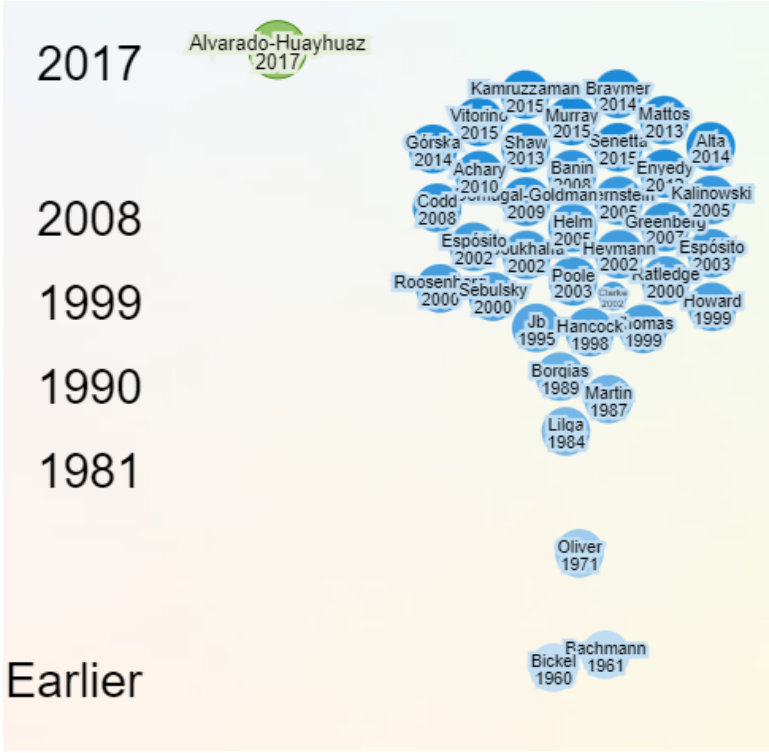

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Bernstein ... Bernstein — 2005 — ↳ 33

31Ga Therapeutic Gallium Compounds

Greenberg ... Chevion — 2007 — ↳ 6

Metallo-desferrioxamine complexes and their use in the treatment of bacterial infections

Boukhalfa ... Crumbliss — 2002 — ↳ 490

Chemical aspects of siderophore mediated iron transport.

Biometals

Martin ... Wills — 1987 — ↳ 206

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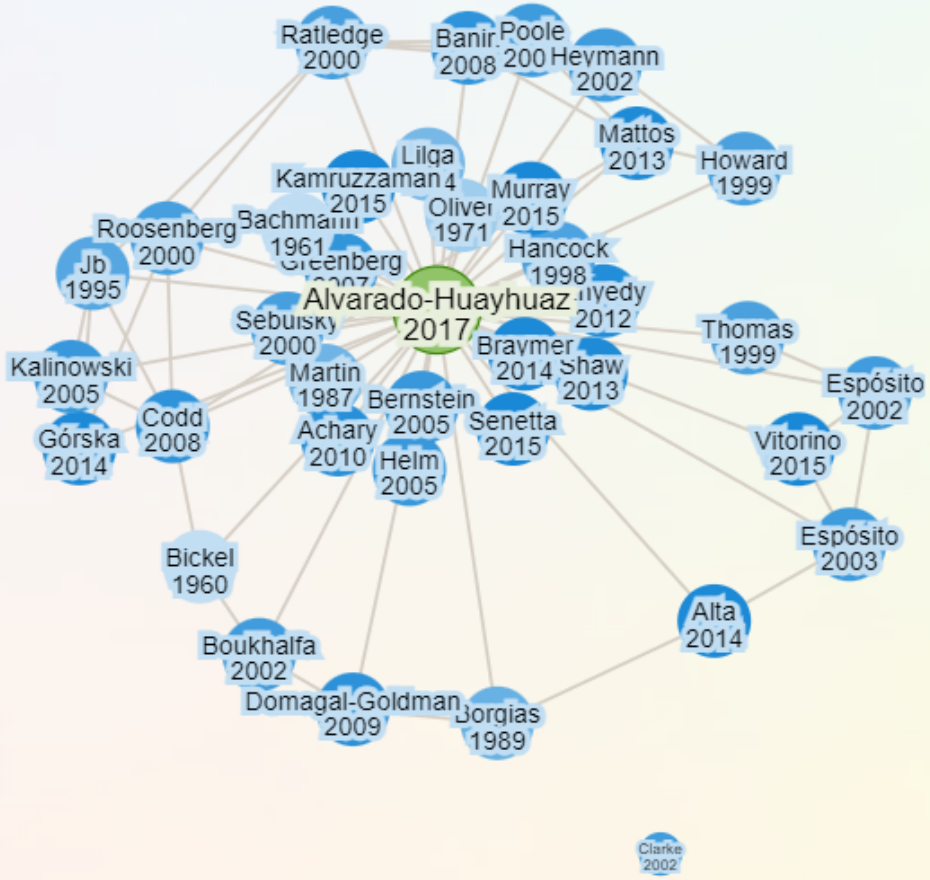

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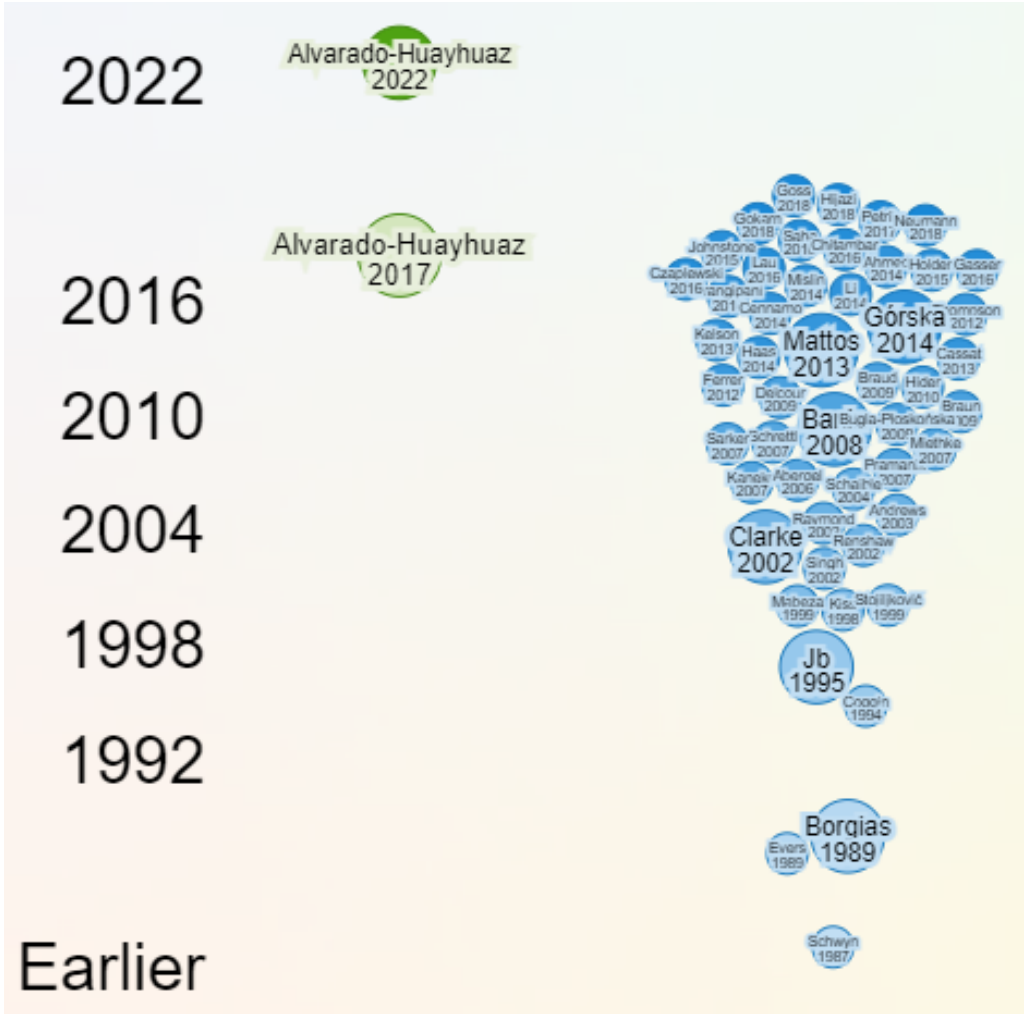

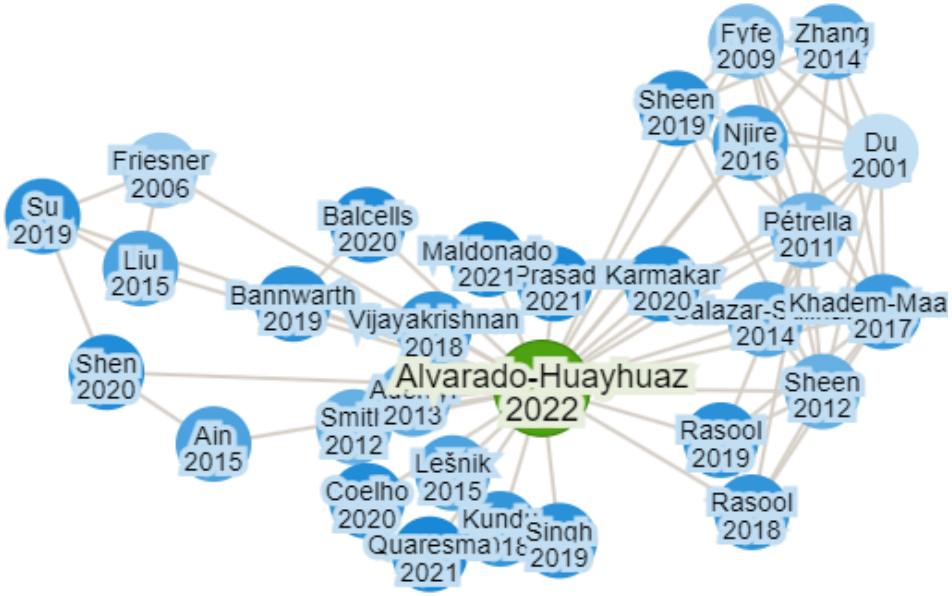

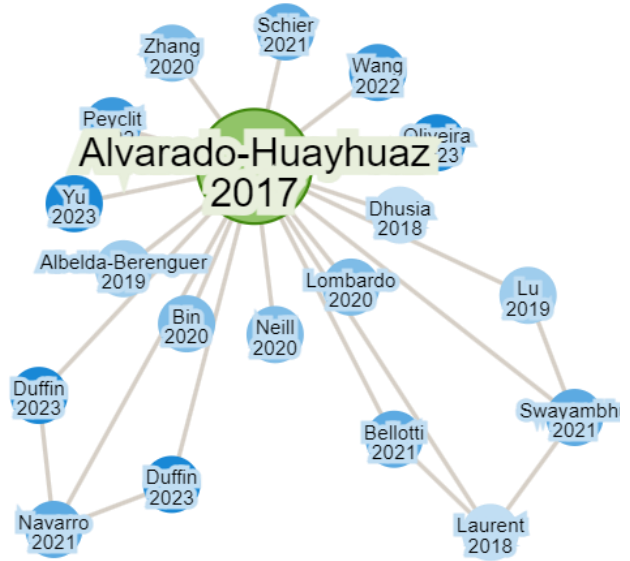

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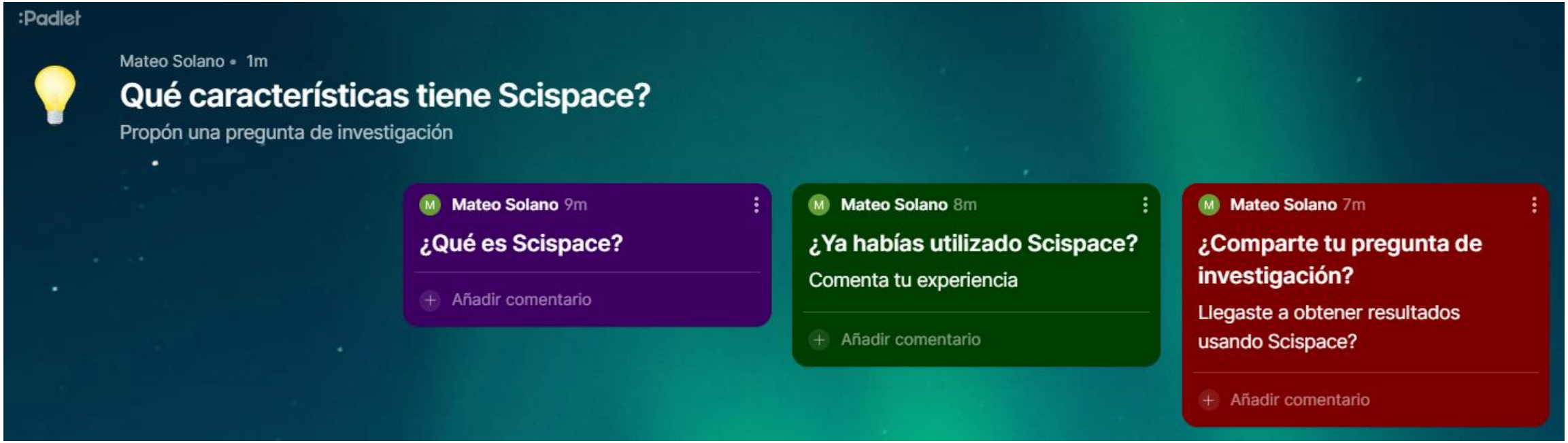

Caso de aplicación

Revista da Associacao Medica Brasileira • *Open Access* • Volume 69, Issue 9 • 2023 • Article number e20230560

The use of artificial intelligence to improve the scientific writing of non-native english speakers

Giglio, Auro Del[a];

da Costa, Mateus Uerlei Pereira[b]

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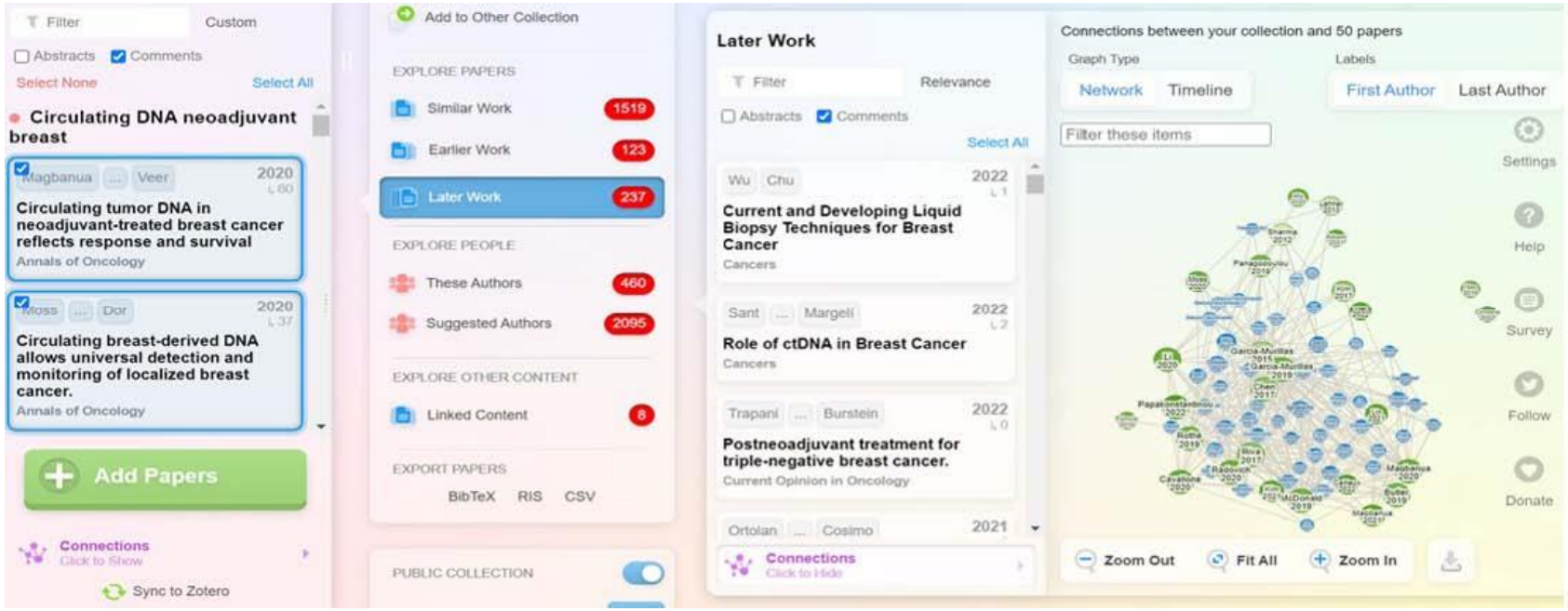
Uso en revisión no sistemática

MÉTODOS

Ir a: ▸

Debido al acceso generalizado y reciente a programas basados en IA como ChatGPT, no había evidencia suficiente en la literatura médica para realizar una revisión sistemática. Por lo tanto, optamos por realizar una revisión no sistemática de la literatura más reciente utilizando los términos “inteligencia artificial”, “escritura científica” y “hablantes no angloparlantes” para crear una revisión narrativa utilizando Google Scholar, Google y programas de recuperación de referencias basados en IA como Elicit (www.elicit.org) y ResearchRabbit (https://www.researchrabbit.ai/).



Actividad

- Adjunta dos artículos científicos donde utilizaron algunas de estas IA’s.