

ReadCube Pro User Guide

LITERATURE MONITORING & AI ASSISTANT USER GUIDE / V 1.3 / OCT 2024

Welcome to ReadCube Pro

Within this guide, we will be sharing information on how to:

- Use the **ReadCube Full-Text Search** tool
- Construct detailed and precise search queries with the **Query Builder**
- Get advanced search support with **AI Search Assist**
- Save smaller search queries and easily combine them via **Search Sequences**
- Save complex and frequently used search queries with **Starred Searches**
- Refine search results with **AI-powered filtering**
- Use the **AI Assistant** to analyze and summarize a collection of articles in a library
- Get AI-assisted answers to individual article questions with **Chat with PDF**
- **Automatically deposit** relevant articles into shared libraries
- Receive **automated email alerts** about new articles for review

Need help or guidance? Don't hesitate to reach out to Support (support@readcube.com) or your dedicated Client Engagement Manager!

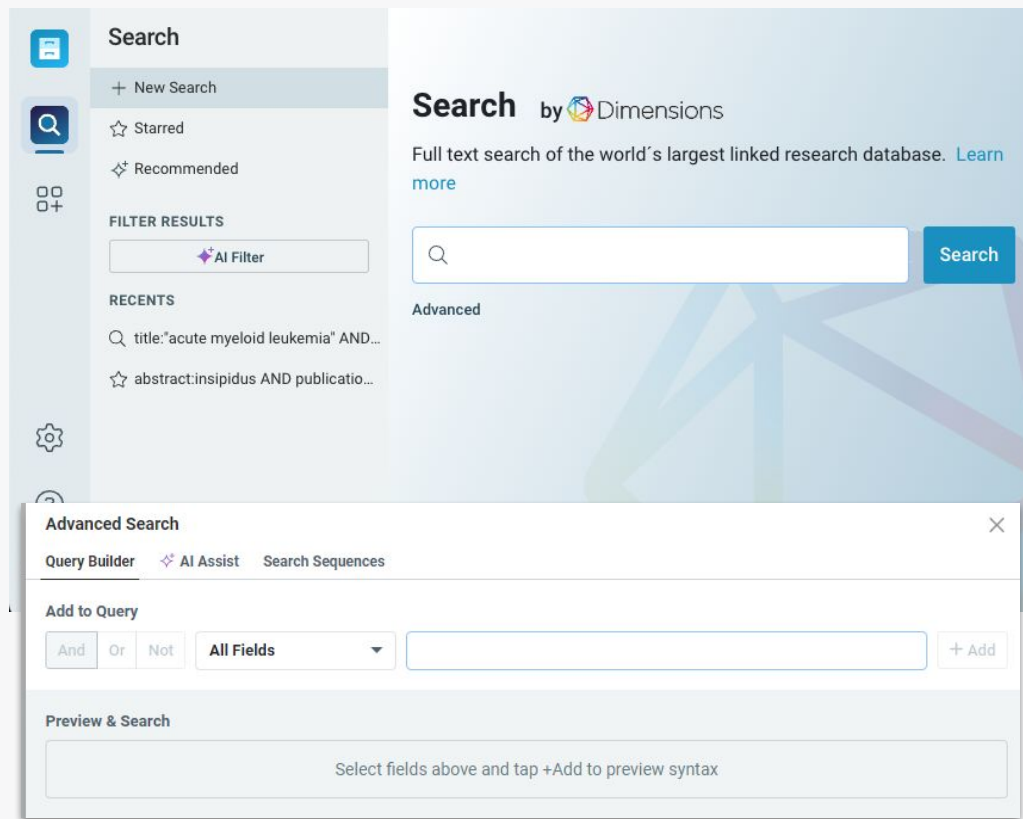
Literature Monitoring

BRIEF OVERVIEW

Literature Monitoring

Literature Monitoring allows users to search the Dimensions database within ReadCube, build effective queries with AI support, create recurring automatic searches (coming soon!), and filter results using AI.

- Search across 140+ million publications, including **full-text search** for 100+ million
- Refine search results with **AI-powered filtering** for the most relevant content
- Use the graphical **Query Builder** and avoid search syntax errors
- Enter a plain text description of your query and **AI Assist** can generate the advanced query for you
- Create **Search Sequences** for a straightforward approach to creating complex queries



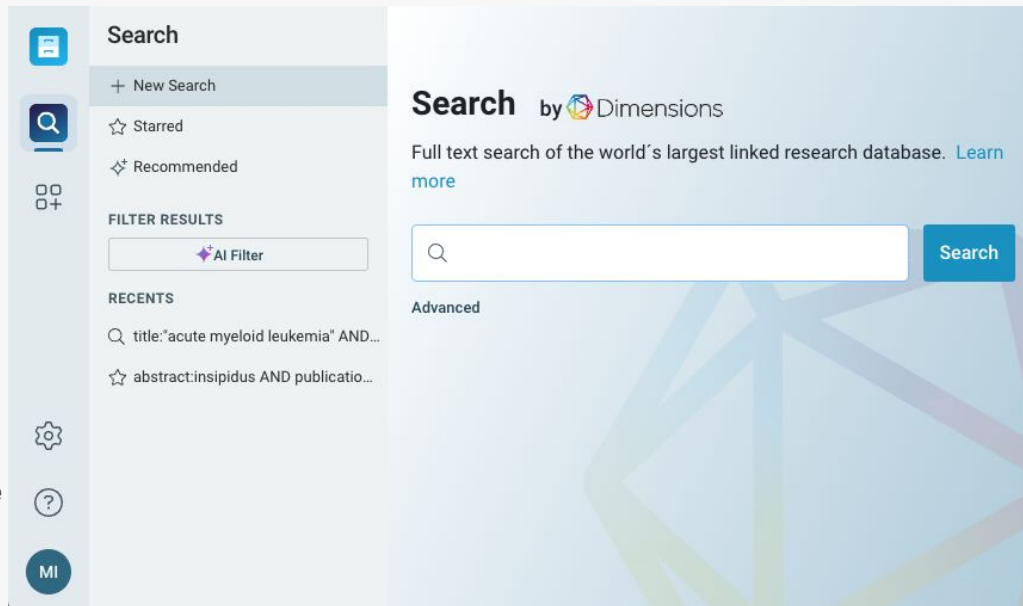
Full-Text Search

LITERATURE MONITORING FEATURE

Full-Text Search

Search the full-text of published papers to improve result accuracy and relevance

- Find articles that mention specific concepts, methodologies, or data points not highlighted in the title or abstract, making literature reviews more comprehensive
- Reduce time spent sifting through irrelevant articles with more efficient information retrieval; filtering down to exact phrases within articles
- Discover valuable articles you might have missed using traditional search methods, broadening your research scope



Full-Text Search

How It Works

- Expand your search beyond standard metadata and search across the full-text of all indexed articles in the database
- View search results with highlighted terms within the context of the full text, showing the exact location of the search terms within each document
- Please see this [Advanced Searching support article](#) outlining which fields are searchable & recommendations on how to build queries

The screenshot displays the ReadCube search interface. On the left sidebar, the 'Search' button is highlighted with a purple box. The main search bar at the top contains the query '"acute myeloid leukemia"' and is also highlighted with a purple box. Below the search bar, the results section shows 'Found 392.1 Thousand articles'. The first result, 'Hematological Disorders in Children, Pathogenesis and Treatment' by Adachi et al. (2017), is highlighted with a purple box. The search terms 'acute myeloid leukemia' are highlighted in blue within the abstract snippet. The second result, 'Pediatric Oncology, A Comprehensive Guide' by Imbach (2011), is also highlighted with a purple box, showing the search terms highlighted in blue within its abstract snippet. The left sidebar includes a 'New Search' button, 'Starred' and 'Recommended' filters, and a list of recent searches including 'insipidus' and '"acute myeloid leukemia"'. The bottom of the sidebar shows a filter for 'abstract:insipidus AND publicatio...'. The bottom left corner features the ReadCube logo and the text '© A Digital Science Solution'.

Full-Text Search

How It Works

- Further refine search results by applying filters or amending the query to specify a publication date, journal name, author, etc!
- Utilize the “Advanced Search” options to further refine (covered in the next few sections)

The screenshot displays the ReadCube search interface. On the left is a sidebar with navigation icons: a document icon, a magnifying glass icon, and a grid icon. The main area is titled "Search" and contains a search bar with the query "acute myeloid leukemia" AND year:2020. Below the search bar, it states "Found 24.3 Thousand articles". The first search result is titled "Acute myeloid leukemia with isolated del(5q) is associated with IDH1/IDH2 mutations" by Rea et al., 2020, Modern Pathology. The second result is titled "Canine Acute Myeloid Leukemia" by 2020, Advances in Small Animal Medicine and Surgery. The interface also includes a "FILTER RESULTS" section with an "AI Filter" button and a "RECENTS" section with a list of previous searches.

Search

+ New Search

☆ Starred

✦ Recommended

FILTER RESULTS

AI Filter

RECENTS

insipidus

"acute myeloid leukemia" AND yea...

Search: "acute myeloid leukemia" AND year:2020

Found 24.3 Thousand articles

Acute myeloid leukemia with isolated del(5q) is associated with IDH1/IDH2 mutations

Rea et al. 2020, Modern Pathology

... Isolated del(5q) in **acute myeloid leukemia** is rare and **acute myeloid leukemia** cases with isolated del(5q)...

...12 cases of **acute myeloid leukemia** with isolated del(5q), 7 cases of **acute myeloid leukemia** with del(5q)...

Citations 1 Altmetric 2 Add to Library

Canine Acute Myeloid Leukemia

2020, Advances in Small Animal Medicine and Surgery

...staining. Results Canine **Acute Myeloid Leukemia** Background **Acute myeloid leukemia** (AML) is a hematopoietic...

...tables, 42 references. Editor Annotation **Acute myeloid leukemia** is a rare diagnosis in the dog, and there...

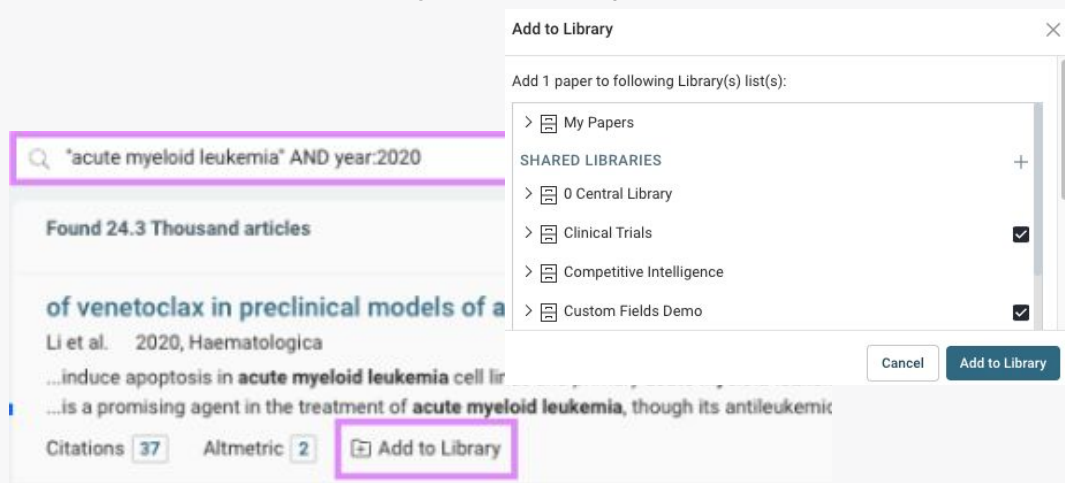
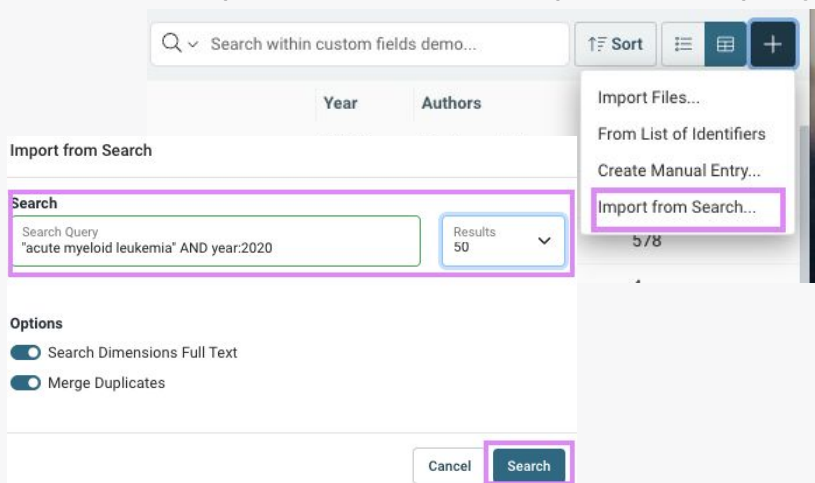
Add to Library

Full-Text Search

How It Works

Adding references to your personal or shared library:

- An individual reference: click '+ Add to Library' & determine which library(s) it should be added to
- Multiple references: select them by clicking one, then hold down shift (all references between the selection) or command/control (picklist) to determine which you'd like added
- You can also import directly from the search when you're within a library by clicking the '+' and selecting 'Import from Search'. Populate the query and the number of results you'd like imported.



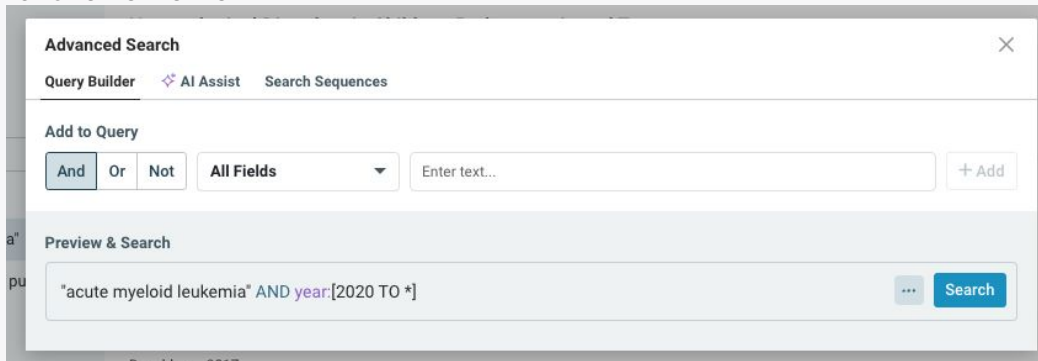
Advanced Search: Query Builder

LITERATURE MONITORING FEATURE

Advanced Search: Query Builder

Create detailed, precise search queries by utilizing advanced parameters and logical operators, minimizing the risk of syntax errors

- Tailor searches and specify parameters to ensure results are relevant to your research needs
- Use logical boolean operators (AND, OR, NOT) to combine or exclude specific criteria, making searches more flexible and targeted
- Save time by quickly locating the most pertinent articles without sifting through large volumes of irrelevant data
- Construct complex queries to systematically explore various research topics, facilitating more comprehensive literature reviews



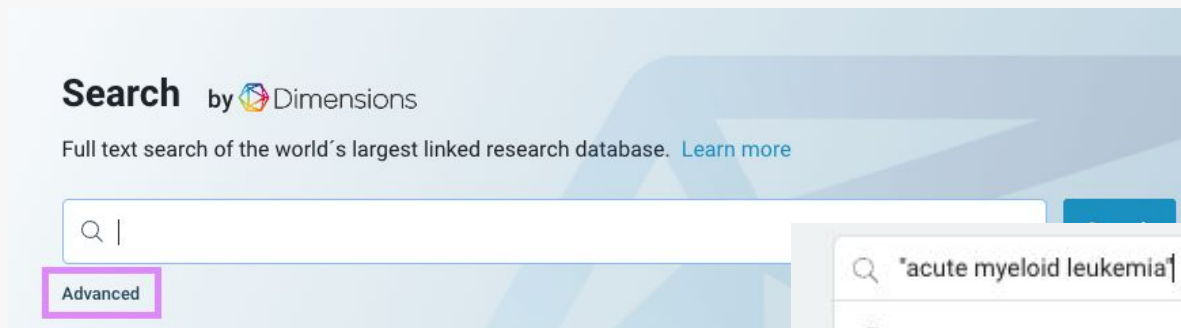
The screenshot displays the 'Advanced Search' window with a close button (X) in the top right corner. Below the title bar, there are three tabs: 'Query Builder' (selected), 'AI Assist', and 'Search Sequences'. The 'Add to Query' section contains three buttons for logical operators: 'And' (highlighted in blue), 'Or', and 'Not'. To the right of these buttons is a dropdown menu currently set to 'All Fields'. Further right is a text input field labeled 'Enter text...' and a '+ Add' button. The 'Preview & Search' section at the bottom shows a preview of the constructed query: '"acute myeloid leukemia" AND year:[2020 TO *]'. To the right of the preview is a three-dot menu icon and a blue 'Search' button.

Advanced Search: Query Builder

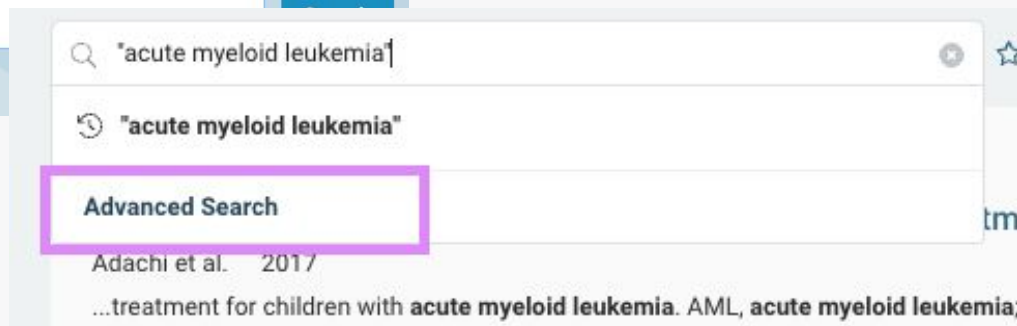
How It Works

- Access the Search Query Builder from the Advanced Search options menu

New search



Modifying an existing search



Advanced Search: Query Builder

How It Works

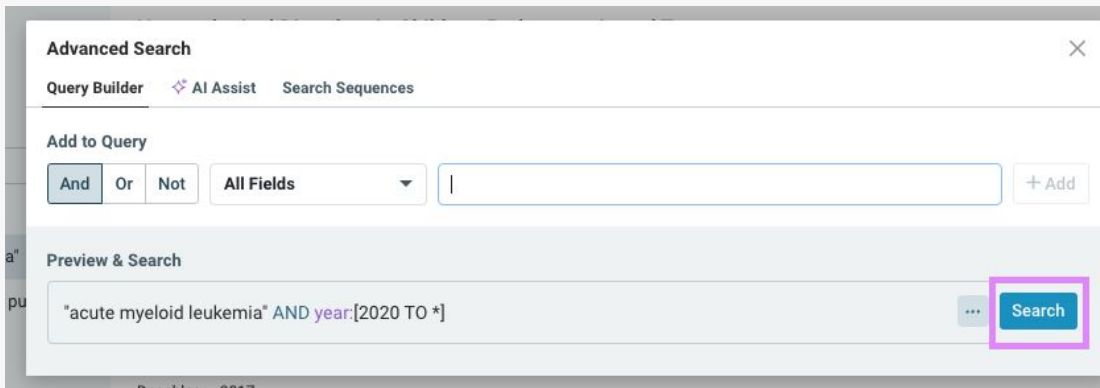
- Choose from various search parameters such as title, author, journal, publication year, and more!
- Apply boolean operators (AND, OR, NOT) to combine or exclude criteria. For example:
 - AND: Ensures all specified criteria are met
 - OR: Includes results that meet any of the specified criteria
 - NOT: Excludes results that meet the specified criteria
- Add multiple conditions and group them as needed to form a comprehensive search query
- Once you've defined the additional parameters, click '+Add' to construct the full query

The screenshot displays the 'Advanced Search' interface with a 'Query Builder' tab selected. A purple rectangular box highlights the 'Add to Query' section, which includes boolean operators ('And', 'Or', 'Not'), a parameter dropdown set to 'Year', a 'Range' dropdown, a text input containing '2020', a 'to' label, another text input containing an asterisk '*', and a '+ Add' button. Below this, the 'Preview & Search' section shows the current query as '"acute myeloid leukemia"' in a text box, with a 'Search' button to its right.

Advanced Search: Query Builder

How It Works

- After the query is constructed, run it by clicking the 'Search' button
- The platform will return references matching the specified criteria
- Refine and edit search queries by adding, removing, or adjusting the parameters and operators



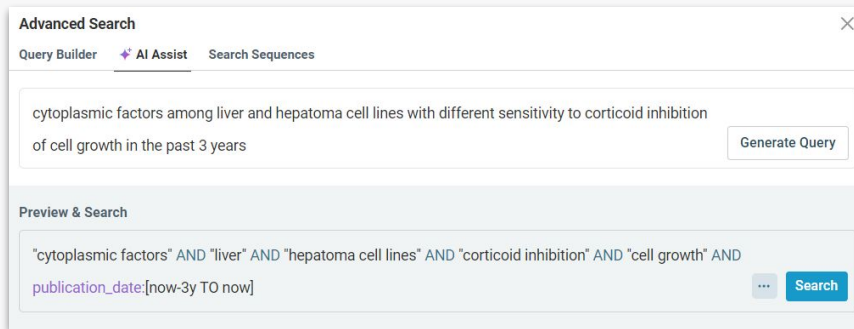
Advanced Search: AI Assist

LITERATURE MONITORING FEATURE

Advanced Search: AI Assist

This Advanced AI Assist Search tool transforms plain language phrases into a structured query, helping you quickly and easily find the most relevant articles

- Significantly reduces the time and effort required to set up complex searches by automatically converting natural or plain language into a well-structured query
- Makes the search process intuitive and accessible to everyone, regardless of your query-building knowledge
- Interprets a user's intent and generates precise queries without manually setting parameters and logical operators, ensuring search results are highly relevant
- Quickly locates the most pertinent articles for more efficient and productive research sessions



Advanced Search: AI Assist

How It Works

- Select the 'AI Assist' tab from the Advanced Search options menu
- Type a search query in plain or natural language (English) into the query builder bar
- For example: "Find recent studies on the effects of climate change on marine biodiversity"
- Click on the 'Generate Query' button

Advanced Search

Query Builder

AI Assist

Search Sequences

Find recent studies on the effects of climate change on marine biodiversity

Generate Query

Preview & Search

("climate change" OR "global warming" OR "climatic alteration") AND ("marine biodiversity" OR "ocean biodiversity" OR "marine life" OR "ocean life") AND publication_date:[now-5y TO now]

...

Search

Advanced Search: AI Assist

How It Works

- AI Assist Search processes the natural language text, understanding your search intent and extracting key concepts, parameters, and logical relationships
- AI automatically constructs a detailed search query using appropriate parameters (e.g., keywords, authors, and publication dates) and logical operators (AND, OR, NOT) based on your input
- Review the AI-generated query in the 'Preview & Search' box, then click 'Search'
- The platform will execute the AI-generated query and return a list of highly relevant articles

The screenshot displays the 'Advanced Search' window with three tabs: 'Query Builder', 'AI Assist' (selected), and 'Search Sequences'. In the 'AI Assist' tab, a text input field contains the query: 'Find recent studies on the effects of climate change on marine biodiversity'. To the right of this field is a 'Generate Query' button. Below the input field is the 'Preview & Search' section, which shows the AI-generated search query: `("climate change" OR "global warming" OR "climatic alteration") AND ("marine biodiversity" OR "ocean biodiversity" OR "marine life" OR "ocean life") AND publication_date:[now-5y TO now]`. There are two 'Search' buttons, one at the end of the query preview and another on the right side of the interface. Purple boxes highlight the 'Generate Query' button, the 'Search' button in the preview, and the 'Search' button on the right.

Starred Searches

SAVE SEARCH RESULTS TO STAY ORGANIZED

Starred Searches

Save complex, frequently used search queries for quick access and easy reuse

- Researchers who revisit the same topics can save time by reusing consistent search parameters across multiple queries.
- Maintains consistency in research and data collection
- Can be easily rerun with a single click, simplifying the research process
- Users can manage multiple starred searches, keeping research organized and structured

The screenshot displays the ReadCube interface with several overlapping panels. At the top, a search bar contains the query "show articles about climate change published in past 3" with a star icon to its right. A purple arrow points from this star icon to a "Starred" button in a "Save Search" dialog box. Below the search bar, a snippet of search results is visible, showing "Found 1 article" and the title "Scaling procedures in climate science: Using temporal".

On the left, a sidebar contains the "Search" section with options: "+ New Search", "☆ Starred", and "✦ Recommended". Below this is the "FILTER RESULTS" section. The "Save Search" dialog box is open, showing a "Name" field with the text "show articles about climate change published in past 3 years" and a checked checkbox for "Include AI filters in saved search".

In the center, a "Search" panel shows the "☆ Starred" button highlighted with a purple box. Below it, the "FILTER RESULTS" section includes an "AI Filter" button. On the right, a "Starred Searches" table lists saved searches. The first entry is "show articles about climate change published in past 3 years" with a "Date saved" of "05/08/24 12:41pm". A purple box highlights the three-dot menu icon to the right of this entry. A dropdown menu is open, showing options: "Search", "Edit name", and "Remove".

At the bottom left, the ReadCube logo is displayed with the text "© A Digital Science Solution".

Starred Searches

How It Works

- Perform a search as usual
- After viewing the displayed search results, save the search query by clicking the 'Star icon' to the right of the search bar
- Name and save the search query for easy identification

effects of climate change AND marine biodiversity AND

Found 214 Thousand articles

The effects of climate change on wildlife biodiversity on
Dueñas et al. 2021, Climate Change Ecology
...elsevier.com/locate/ecochg The **effects of climate change** on wildlife bi
...species and **climate change** as the biggest drivers of the loss of biodiver

Citations 17 Add to Library

Save Search

Name
Climate Change|

Cancel Save

Starred Searches

How It Works

- Starred searches are stored in a dedicated section, accessible from the main left hand menu
- Run a saved/starred search by selecting it from your list and click the "Search" button
- To manage starred searches, you can name, rename, or delete queries that are no longer needed

Search

+ New Search

☆ Starred

✦ Recommended

FILTER RESULTS

AI Filter

Starred Searches

Name	Date saved ↓	
Climate Change	05/09/24 1:01am	...
abstract:insipidus AND publication_date:>=now-7d	29/08/24 9:10pm	

Search

Edit name

Remove

Refine Search Results with AI-Powered Filtering

LITERATURE MONITORING FEATURE

Refine Search Results with AI Filtering

This advanced feature refines search results using AI filters that interpret natural language inputs

- Apply AI Filters using plain language (e.g. English) to find more relevant scientific articles without manually setting complex parameters or logical operators
- Simplified process saves time and effort without the need for technical knowledge
- The AI interprets user intent and applies precise filters for more efficient and focused research

The screenshot displays the ReadCube search interface. At the top, a search bar contains the query "effects of climate change AND marine biodiversity AND" followed by a star icon. To the right of the search bar is a "Sort" button with an upward arrow icon. Below the search bar, a notification states "Found 214 Thousand articles". A search result is visible, titled "The effects of climate change on wildlife biodiversity of" by Dueñas et al., 2021, from Climate Change Ecology. The snippet shows a link to an Elsevier article and mentions "species and climate change as the biggest drivers of the loss of biodiversity". On the right side, an "AI assist" panel is open, featuring a purple star icon and the text "Unlock the power of AI in your workflows". Below this, a button labeled "Write a custom filter" is highlighted with a purple border. The ReadCube logo and "© A Digital Science Solution" are in the bottom left corner.

effects of climate change AND marine biodiversity AND

Sort

Found 214 Thousand articles

The effects of climate change on wildlife biodiversity of
Dueñas et al. 2021, Climate Change Ecology
...elsevier.com/locate/ecochg The **effects of climate change** on wildlife **biodiversity** of the galapagos islands Alejandro...
...species and **climate change** as the biggest drivers **of** the loss **of biodiversity** and the disruption **of** ecosystem...

AI assist
Unlock the power of AI in your workflows

Write a custom filter

ReadCube
© A Digital Science Solution

Refine Search Results with AI Filtering

How It Works

- Navigate to this feature by clicking on the icon in the top right-hand corner on the search results page
- Click 'Write a custom Filter'
- Enter your desired filter criteria in plain language (e.g. English) into the filter bar, then click 'Ask'
- For example: Show articles mentioning the Pacific region

 **Apply AI Filter** ×

Ask

Run query on

☐ Full text ☒ Title & abstract

Include results

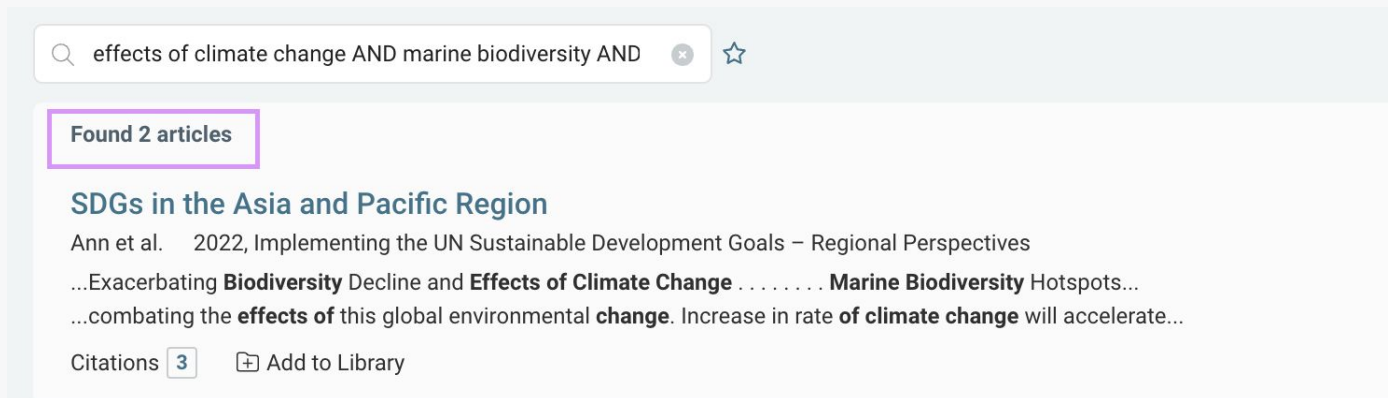
to

Querying more results will result in longer processing times.

Refine Search Results with AI Filtering

How It Works

- The AI Filter processes the natural language input, understanding the user's intent and identifying key concepts, parameters, and criteria for filtering
- The AI automatically applies the appropriate filters based on the interpreted input, refining the search results accordingly
- Users can review the filtered results and adjust their natural language filter inputs if necessary to further refine their results



effects of climate change AND marine biodiversity AND

Found 2 articles

SDGs in the Asia and Pacific Region

Ann et al. 2022, Implementing the UN Sustainable Development Goals – Regional Perspectives

...Exacerbating **Biodiversity** Decline and **Effects of Climate Change** **Marine Biodiversity** Hotspots...

...combating the **effects of** this global environmental **change**. Increase in rate **of climate change** will accelerate...

Citations **3** Add to Library

Analyze a Collection of Articles Using AI

Library AI Assistant Feature

Analyze a Collection of Articles Using AI

Use the Library AI Assistant to analyze or summarize a collection of up to 20 articles (PDFs)

- Quickly find specific information within a collection of papers without manually sifting through each document
- Get contextual responses to answers regarding multiple documents
- Gain deeper insights, including common topics and research areas
- Ask AI to explain or clarify complex concepts for a better understanding of the material



Assistant

Analyzing **16** papers in **Competitive Intelligence** based on full text availability.

Use AI to ask questions, identify common themes or differences between papers.



What would you like to know?...

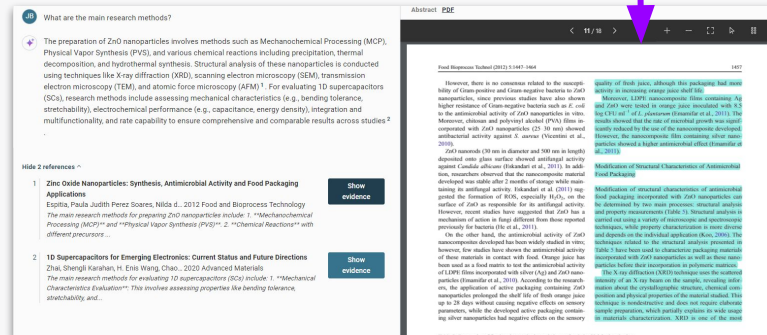
Ask

Suggestions:

Is there any mention of a viral disease? If there is, in which context?

What are the main research methods?

What are the most common conclusions found in these articles?

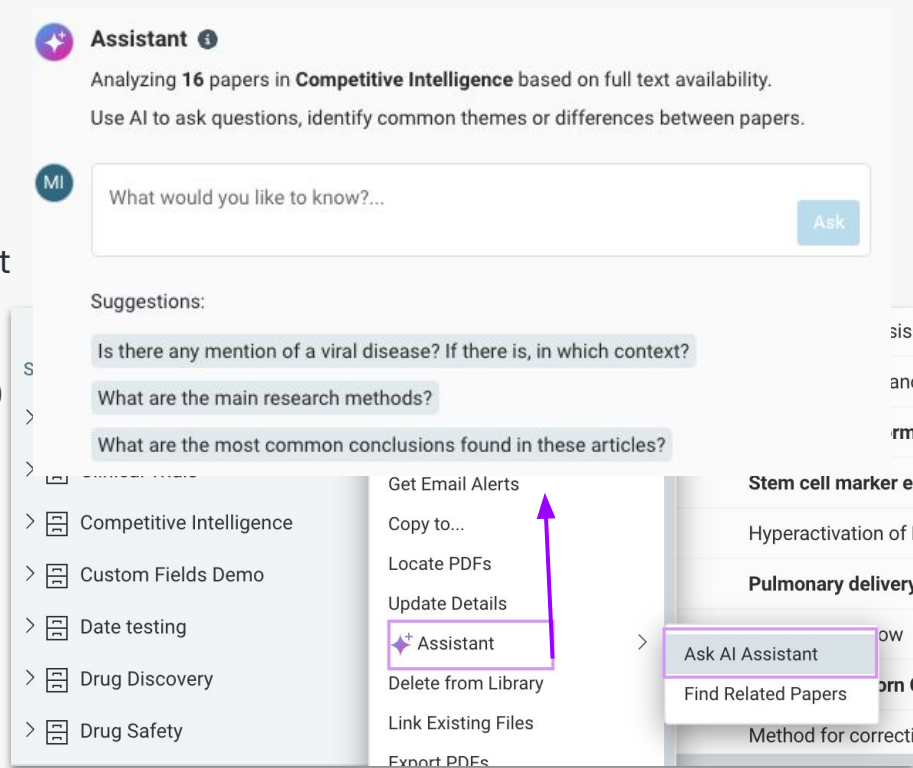


The screenshot displays the ReadCube AI Assistant interface. On the left, a sidebar shows search results for the query "What are the main research methods?". The results list two articles: "Zinc Oxide Nanoparticles: Synthesis, Antimicrobial Activity and Food Packaging Applications" and "1D Supercapacitors for Emerging Electronics: Current Status and Future Directions". The main panel shows the full text of the first article, "Zinc Oxide Nanoparticles: Synthesis, Antimicrobial Activity and Food Packaging Applications" by Espitia, Paula Judith Perez Soares, Nilida d., 2012. The article text discusses the synthesis, antimicrobial activity, and food packaging applications of zinc oxide nanoparticles. A purple arrow points to the "Show evidence" button next to the article title. The bottom of the screen shows a table of contents for the article.

Analyze a Collection of Articles Using AI

How It Works

- Determine if you'd like to analyze articles in a:
 - Library: click the gear icon
 - List: click the gear icon
 - Specific articles by individually selecting: right click + command/control + select article & right click
- Select 'Ask AI Assistant' for the collection of up to 20 articles
- **Tip!** A warning message will appear if you select more than 20 PDFs in a data set
- Select a suggested prompt or enter your own



Analyze a Collection of Articles Using AI

How It Works

- AI Assistant will analyze the documents based on your prompt and list all articles that answer the query; view the evidence in the paper for the response



Assistant

Analyzing 16 papers in **Competitive Intelligence** based on full text availability.
Use AI to ask questions, identify common themes or differences between papers.



What are the main research methods?



The research articles employ a diverse array of methods to investigate various aspects of diabetes and related conditions. Magnetic Resonance (MR) imaging is used for high-resolution imaging of the pituitary gland to diagnose central diabetes insipidus¹. Retrospective analysis of receipt data identifies patterns in medication adherence². Methods like bariatric surgery, prebiotic supplementation, intermittent fasting, probiotics, and fecal microbiota transplantation explore the relationship between gut microbiota and Type 2 Diabetes Mellitus (T2DM)³. Systematic reviews and network meta-analyses assess the effects of glucose-lowering drugs⁴. Web scraping, data extraction, and evidence grading are used to study dietary supplements and diabetes⁵. Randomized controlled trials, metagenome-wide association studies, and systematic reviews investigate probiotics' effects on glycemic control⁶. Multisite studies, clinical trials, and algorithm development focus on diabetes management technologies⁷. Observational studies and randomized trials evaluate treatments and technologies in diabetes care⁸. Feasibility and pilot studies, along with algorithm testing, contribute to artificial pancreas systems⁹. Literature reviews and prospective studies assess insulin pen devices¹⁰. Animal experiments and proteomics analyze hypercalcemia-induced nephrogenic diabetes insipidus¹¹. Genetically modified mice and various biochemical assays study kidney function¹². Optical recording and electrophysiological methods measure brain dynamics¹³. Functional testing in cell lines and electron microscopy investigate protein aggregation¹⁴. Genomic and RNA sequencing, along with comparative genomics, explore bone formation in cartilaginous fishes¹⁶. These methods collectively advance our understanding of diabetes, its management, and related physiological processes.

Hide 16 references

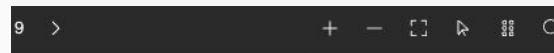
1

MR Imaging of Central Diabetes Insipidus: A Pictorial Essay

Shin, Ji Hoon Lee, Ho Kyu Choi, C... 2001 Korean Journal of Radiology

The main research method discussed in the article is **Magnetic Resonance (MR) imaging**. The article emphasizes the use of MR imaging to provide high-resolution images of the pituitary gland, pituitary stalk, and adjacent structures. The modality's multiplanar capability allows the diagnosis of various diseases that cause central DI, and thus helps guide its treatment.

Show evidence



IR Imaging of Central Diabetes Insipidus: A Pictorial Essay

Shin, MD¹
Kyu Lee, MD¹
Gon Choi, MD¹
Chul Suh, MD¹
Jin Kim, MD¹
Kwan Hong, MD¹
Gyu Na, MD¹

Central diabetes insipidus (DI) can be the outcome of a number of diseases that affect the hypothalamic-neurohypophyseal axis. The causes of the condition can be classified as traumatic, inflammatory, or neoplastic. Traumatic causes include postoperative sella or transection of the pituitary stalk, while infectious or inflammatory causes include meningitis, lymphocytic hypophysitis, and granulomatous inflammations such as sarcoidosis and Wegener's granulomatosis. Various neoplastic conditions such as germinoma, Langerhans cell histiocytosis, metastasis, leukemic infiltration, lymphoma, teratoma, pituitary adenoma, craniopharyngioma, Rathke cleft cyst, hypothalamic glioma, and meningioma are also causes of central DI. In affected patients, careful analysis of these MR imaging features and correlation with the clinical manifestations can allow a more specific diagnosis, which is essential for treatment.

Diabetes insipidus (DI) is a clinical syndrome characterized by the excretion of copious volumes of dilute urine combined with the persistent intake of abnormally large quantities of fluid. There are two general forms of DI: central (vasopressin-deficient) and nephrogenic (vasopressin-resistant). DI of central origin most often results from lesions in the hypothalamic-neurohypophyseal axis. The differential diagnosis of central DI should include the pathologic processes (e.g., traumatic, infectious or inflammatory, and neoplastic) that involve the structures normally found in the pituitary gland or contiguous structures. However, idiopathic central DI is diagnosed when central DI occurs in the absence of any alteration that is known to be responsible for DI (1).

MR imaging provides high-resolution images of the pituitary gland, pituitary stalk, and adjacent structures. The modality's multiplanar capability allows the diagnosis of various diseases that cause central DI, and thus helps guide its treatment.

In this article, we review the pathophysiology of central DI and the MR features of neurohypophysitis, and demonstrate the MR imaging findings of various pathologic conditions that cause central DI.

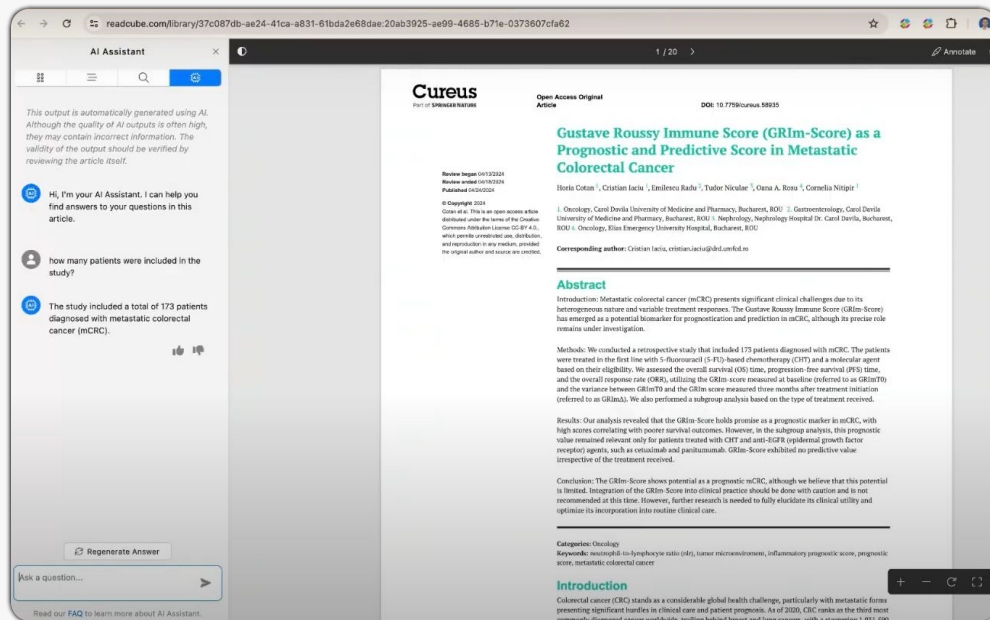
Chat with PDF Using Library AI Assistant

LIBRARY AI ASSISTANT FEATURE

Chat with PDF Using Library AI Assistant

Ask the AI Assistant questions about an individual PDF within your library

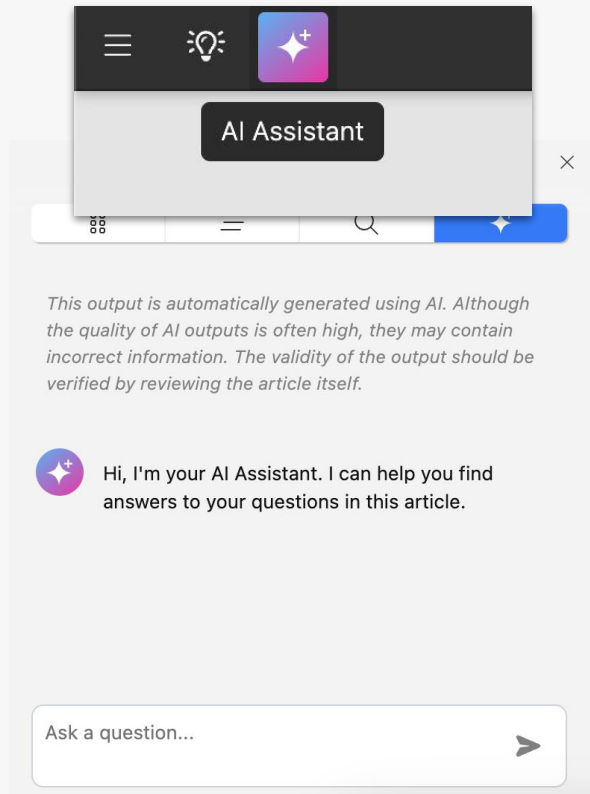
- Gain targeted and contextually accurate responses and insights by exploring the text in a dynamic and interactive manner
- Reduce time spent reading by asking the AI to summarize or point to specific parts of interest
- Ask the AI to clarify research terms, or to rewrite a specific part of the paper



Chat with PDF Using Library AI Assistant

How It Works

- Click the AI icon in the enhanced reader located in the top left-hand corner, which will navigate you to the in the chat-like interface to ask questions
- For example:
 - Can you summarize the findings of this paper, including its objectives, methods, results, and conclusions, for team members to quickly assess its relevance?
 - Provide a detailed summary of this article in 100 words in German to help disseminate the research internationally.
 - Extract and detail all the dosage amounts used in the trials and their corresponding results



Chat with PDF Using Library AI Assistant

How It Works

AI will return responses, and highlight a portion of the text from where the information was extrapolated

AI Assistant

☰
☰
🔍
✦

Summary of Findings

Objectives:

The paper aims to provide insights into the evolution of jawed vertebrates (gnathostomes) by analyzing the whole genome of the elephant shark (*Callorhynchus milii*), a cartilaginous fish. The study seeks to understand the genetic basis for key morphological and physiological innovations that accompanied the emergence of gnathostomes from jawless vertebrates.²

Methods:

- Genome Sequencing and Assembly: The genome of a single male *C. milii* was sequenced and assembled to a size of 0.937 gigabases, comprising 21,208 scaffolds.²
- Annotation: Using the Ensembl annotation pipeline and RNA-seq transcript evidence, a total of 18,872 protein-coding genes were predicted.²
- Comparative Genomics: The genome was compared with those of other vertebrates to identify unique features and evolutionary patterns.²

[Regenerate Answer](#)

1 / 7
🔍
🔗
📄

major event in the evolution of vertebrates. This transition was accompanied by many morphological and phenotypic innovations, such as jaws, paired appendages and an adaptive immune system based on immunoglobulins, T-cell receptors and major histocompatibility complex (MHC) molecules¹⁻⁴ (Fig. 1a). How these novelties emerged and how they facilitated the divergence, adaptation and dominance of gnathostomes as the major group (99.9%) of living vertebrates are key unresolved questions. The living gnathostomes are divided into two groups, the cartilaginous fishes (Chondrichthyes) and bony vertebrates (Osteichthyes), which diverged about 450 Myr ago (Fig. 1a). A key feature distinguishing the two groups is that chondrichthyans have largely cartilaginous endoskeletons whereas osteichthyans have ossified endoskeletons. Although fossil jawless vertebrates (for example galeaspid) and jawed vertebrates (for example placoderms) possessed dermal and perichondral bone, endochondral bone is found only in osteichthyans. Chondrichthyans include about 1,000 living species that are grouped into two lineages, the holocephalans (chimeras) and elasmobranchs (sharks, rays and skates), which diverged about 420 Myr ago (Fig. 1a). A detailed whole-genome evaluation of a chondrichthyan and comparative analysis with the available genome information on osteichthyans and a jawless vertebrate⁵ might help us to understand features unique to chondrichthyans and provide insights into the ancestral state of gnathostome-specific morphological features and physiological systems.

We previously identified *C. milii*, a holocephalan, as a chondrichthyan genome model^{6,7} because of its relatively small genome (~1.0 gigabase).

include a single gill opening, a complete hyoid arch, fusion of the upper jaw to the cranium, and non-replaceable hypermineralized tooth plates¹⁰ (Fig. 1b). *Callorhynchus milii* inhabits temperate waters of the continental shelves off southern Australia and New Zealand, typically at depths of 200 to 500 m (ref. 11). Here, we report the generation and analysis of a high-quality genome sequence of *C. milii*. Several key findings are presented here and further details on our in-depth characterization of this genome are presented in Supplementary Notes I to XI.

Genome assembly and annotation

Genomic DNA of a single male *C. milii* was sequenced and assembled (Supplementary Note I) to a size of 0.937 gigabases, comprising 21,208 scaffolds (N50 contig, 46.6 kilobases; N50 scaffold, 4.5 megabases; Supplementary Table I.1). The average GC content of the *C. milii* genome is 42.3%, and approximately 46% of the genome is organized into isochores (Supplementary Note II). Using the Ensembl annotation pipeline⁸ and RNA-seq transcript evidence, we predicted a total of 18,872 protein-coding genes. In addition, microRNA (miRNA) genes were identified by small-RNA sequencing and annotation of the genome assembly (Supplementary Note III). *Callorhynchus milii* has 693 miRNA gene loci (693 genes and 136 families) that do teleosts (for example, zebrafish have 344 genes and 94 families) but fewer than do humans (1,527 genes and 558 families) and other mammals (miRBase release 19). Several novel *C. milii*-specific miRNAs are expressed at high levels in a tissue-specific manner (Supplementary Figs III.1 and

¹Comparative Genomics Laboratory, Institute of Molecular and Cell Biology, A*STAR, Biopolis, Singapore 138673. ²Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore, Singapore 119228. ³Developmental and Biomedical Genetics Laboratory, Institute of Molecular and Cell Biology, A*STAR, Biopolis, Singapore 138673. ⁴Department of Developmental Immunology, Max-Planck-Institut für Immunologie und Epigenetik, Sudsteiner 51, 79108 Freiburg, Germany. ⁵Department of Microbiology and Immunology, University of Maryland, Baltimore, Maryland 21201, USA. ⁶Department of Pathology, Hokkaido University Graduate School of Medicine, Sapporo 060-8638, Japan. ⁷Molecular Engineering Laboratory, Biomedical Sciences Institutes, A*STAR, Biopolis, Singapore 138673. ⁸Department of Biology, San Francisco State University, San Francisco, California 94132, USA. ⁹Banting and Best Department of Medical Research and Donnelly Centre, University of Toronto, Toronto, Ontario M5S 3E1, Canada. ¹⁰Fish Developmental Biology Laboratory, Institute of Molecular and Cell Biology, A*STAR, Biopolis, Singapore 138673. ¹¹Institut de Biologia Evolutiva (IPE-CSIC), PRBB, 08003 Barcelona, Spain. ¹²Institut Català de Recerca i Estudis Avançats (ICREA), 08010 Barcelona, Catalonia, Spain. ¹³Center for Biomolecular Science and Engineering, School of Engineering, University of California Santa Cruz, Santa Cruz, California 95064, USA. ¹⁴The Genome Institute at Washington University, St. Louis, Missouri 63108, USA.

174 | NATURE | VOL 505 | 9 JANUARY 2014
©2014 Macmillan Publishers Limited. All rights reserved

ARTICLE
RESEARCH

Chordates

Vertebrates

Jawless

Jawed vertebrates

is an order of magnitude lower than that in mammals^{6,17}. Using the genome-wide set of 699 orthologues, we estimated the molecular evolutionary

 **ReadCube**
© A Digital Science Solution

Literature Alert Feed and AI Email Alerts

AI-POWERED SEARCH RESULT FEEDS AND EMAIL ALERTS

Literature Alert Feed and Email Alerts

Streamline the article discovery process by saving search queries, allowing ReadCube to automatically deposit newly published papers into a designated Shared Library

- Stay up-to-date & save time by automating the recurring searches to identify new papers
- Boost team collaboration and productivity by depositing new research into shared libraries
- Get email notifications, alerting multiple users that new papers were added related to their topic of interest

AI Email Settings

Notifications

Frequency

☒ Daily ☐ Weekly ☐ Monthly

Settings for all team members

☒ Attach AI Summaries to each reference in the alert NEW

AI Prompt

☐ Use a custom prompt

Provide a summary of the paper including research methods, and key outcomes.

Cancel

Save Changes

Set Up Your Literature Search Alert Feeds

How it works

1. Enter your search terms in the search bar and review the displayed results to ensure they align with the content you're seeking. Utilize advanced features like the Query Builder, Assist Query Generator, or AI Filtering to fine-tune your search.
2. [Save the search](#) query by clicking on the star button next to the search bar. Modify the name of the saved search as necessary.
3. Select the 'Create A Library Feed to add new results to your Library' option to create a feed. Click Save.
4. Choose an existing library or create a new one for these search results to populate within your Library.
5. Click 'Create' to successfully configure auto-deposits to your library.

Create Library Feed

Select a Library or List to automatically add newly published papers matching this search.

> My Papers

SHARED LIBRARIES

> Central Library

> Demo

> Diabetes

> Insipidus

> Drug Discovery

> Medical Affairs

> Project XYZ

> Regulatory

Create

Save Search

Name

Diabetes Insipidus

☒ Create a Library Feed to add new results to your Library NEW

Cancel

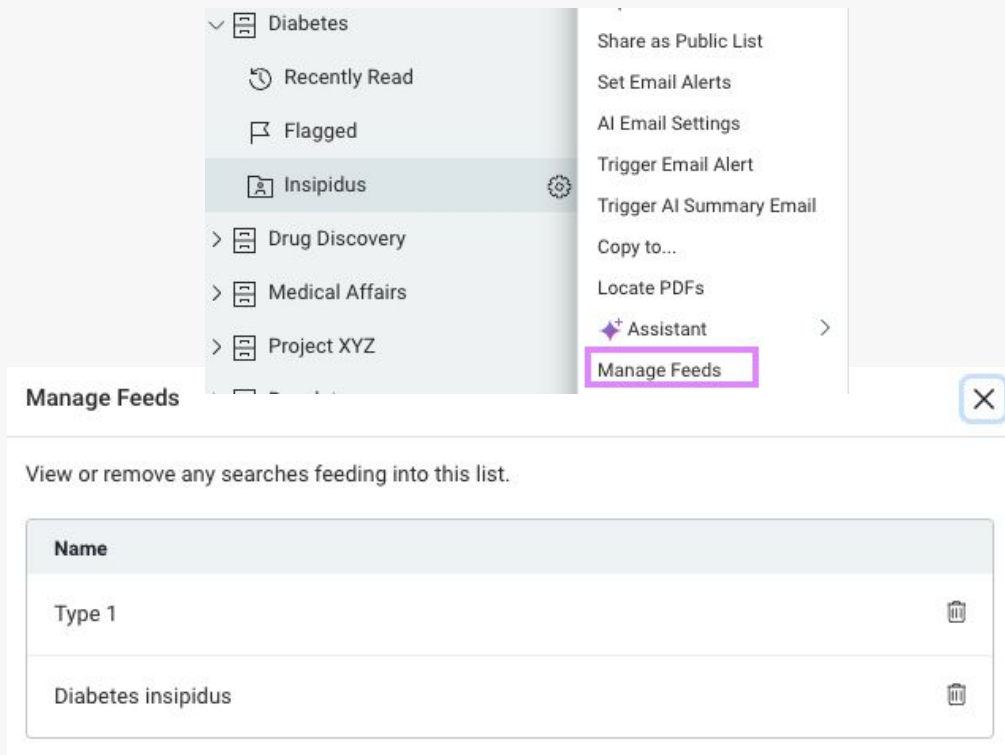
Save

Set Up Your Literature Search Alert Feeds

How it works

Once activated, any new items matching your search query will be automatically added to the designated library.

Easily check which literature alert feeds are being added to a library by clicking the cogwheel and selecting 'Manage Feeds'.



The screenshot illustrates the process of managing literature search alert feeds. It shows a list of libraries on the left, including 'Diabetes', 'Recently Read', 'Flagged', 'Insipidus', 'Drug Discovery', 'Medical Affairs', and 'Project XYZ'. A context menu is open for the 'Insipidus' library, with the 'Manage Feeds' option highlighted. Below this, the 'Manage Feeds' dialog box is shown, displaying a table of active feeds.

Name	
Type 1	
Diabetes insipidus	

AI Email Alerts

How it works

With the AI Summary Emails feature, your team will receive scheduled notifications highlighting when new content is added to the shared library.

This email will be sent to all individuals included in the shared library and will display up to 50 references added since the last alert.

Within these emails you'll see:

- The name of the library
- The number of references added
- Any additional prompting utilized
- An AI-generated summary of up to 50 results
- An AI-generated summary for each reference, with links to access the full reference in ReadCube

Library	Insipidus
New papers added	8
AI Prompt	Provide how insipidus is mentioned in this paper

AI summary

The research articles discuss various aspects of diabetes insipidus (DI) in different contexts. One paper focuses on DI during pregnancy, highlighting its occurrence in up to 1 in 30,000 pregnancies and the role of placental vasopressinase in causing transient DI, which can be managed with desmopressin acetate (DDAVP) for central DI, though nephrogenic DI is resistant to this treatment. Another study notes that transient DI developed in 18.7% of patients but resolved within six weeks. In a different context, twelve patients were diagnosed with DI during follow-up, with eight receiving pituitary radiation treatment, yet none showed a reduction in desmopressin dosage post-treatment. The treatment of DI in children is discussed, emphasizing the use of desmopressin for central DI and thiazides for nephrogenic DI, with a case illustrating successful thiazide use in an infant with central DI due to holoprosencephaly. Additionally, lithium-induced nephrogenic DI is addressed, with acetazolamide being noted as an effective management option.

Diabetes Insipidus in Pregnancy: Etiology, Evaluation, and Management

Sonia Ananthakrishnan Endocrine Practice

The paper discusses diabetes insipidus in the context of pregnancy. It mentions that diabetes insipidus can complicate up to 1 in 30,000 pregnancies and can have various causes, some pre-existing and others that begin during gestation. The paper describes how polyuria and polydipsia can occur or be exacerbated in women with central or nephrogenic diabetes insipidus. It also explains that diabetes insipidus can occur de novo in pregnancy due to placental vasopressinase, leading to accelerated degradation of vasopressin. The

Configure AI Email Alerts

Configure AI Email Alerts

- Click on the cog wheel next to the library name and select 'AI Email Settings'
- Determine the frequency of the alerts & select 'Attach AI Summaries to each reference in the alert'
- By default, the AI will provide a brief summary of each reference, however you also have the option of customizing the prompt.
- Click on Set Alert to finalize the set up.
- **Tip!** You must be an admin of the library in order to configure these alerts. See next page for how to set up standard email alerts

AI Email Settings

×

Notifications

Frequency

☒ Daily ☐ Weekly ☐ Monthly

Settings for all team members

☒ Attach AI Summaries to each reference in the alert NEW

AI Prompt

☐ Use a custom prompt

Provide a summary of the paper including research methods, and key outcomes.

Cancel

Save Changes

 ReadCube
© A Digital Science Solution

Configure Standard Email Alerts

Configure Email Alerts

- If you are not an admin of the library, you can reach out to the admin to configure AI email alerts or simply enroll in standard email alerts
- Click on the cog wheel next to the library name and select 'Set Email Alerts'
- Toggle on 'Get notified by email whenever new papers are added' and determine the frequency
- Click 'Set Alert' to finalize the set up
- **Tip!** These email alerts will only be sent to you, as opposed to the AI email alerts which are sent to all individuals included in the library

Set Email Alerts

☒ Get notified by email whenever new papers are added

Frequency

☒ Daily ☐ Weekly ☐ Monthly

Cancel

Set Alert

Where to go for support

Training & Support

Where to go for support

Customer Service: support@readcube.com or [submit a help request](#)

- For general platform questions or issues accessing the platform.
- To report any technical issues or disruptions in service.
- If you encounter any challenges or need immediate assistance outside of East Coast hours (8-5pm ET).

Client Engagement Manager

- To schedule group training(s)
- For discussions related to your long-term business goals, custom solutions, or strategic planning to optimize your use of our services.
- When you have specific questions about your account, such as tailored solutions, or product recommendations.
- If you're interested in exploring new opportunities or workflows with ReadCube.
- In case you encounter issues that require urgent attention or if you are not satisfied with the resolution provided by Customer Service.

Please remember that your Client Engagement Manager is here to ensure a seamless and tailored experience for your organization, while our Customer Service team is available to address general and technical inquiries efficiently.