MCP SERVER | NO CODE | CLOUD HOSTED

Stanford PubMed MCP

Deeply query biomedical literature and track scientific history.

Stanford PubMed gives you access to biomedical literature from the National Library of Medicine, covering 36M+ articles. Use this MCP to conduct deep academic searches: find related studies via similarity algorithms, track citations for research impact, or filter results by specific genes, drugs, and clinical trial phases.

A+ Quality Score 98.33/100

pubmed | ncbi | biomedical | clinical-trials | mesh | medical-research

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vinkius.com/mcp/stanford-pubmed

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Stanford PubMed MCP

16 tools available
Cloud-hosted on Vinkius

Writing a literature review used to mean spending hours jumping between databases, manually verifying article relevance, and cross-referencing citation details. Now you can connect your AI client through Vinkius and pull together sophisticated searches in one conversation. This MCP connects directly to the gold standard source for life science research. You'll get more than just basic keyword searches; you can use controlled vocabulary like MeSH terms or filter results down to articles with free full-text access. Whether you need to check drug interactions, find recent meta-analyses on a specific topic, or build a reading list of similar papers, this tool handles the complexity so your agent can focus only on synthesizing the findings for you.

Core Capabilities

01 — Find related and supporting literature

Discover articles that are scientifically related to a core paper using NCBI's similarity algorithm.

02 — Filter by specific biological markers

Target search results based on named genes, drugs, or medical subject headings (MeSH) for precision.

03 — Trace research impact and history

Identify which papers have cited a given article to understand its influence or find follow-up studies.

04 — Retrieve structured paper summaries

Get full, sectioned abstracts (Methods, Results, Conclusions) for rapid evaluation of paper relevance without reading the whole text.

05 — Isolate specific study types

Search only for clinical trials or systematic review meta-analyses to meet high evidence standards.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/stanford-pubmed** — connect your AI agent in three steps.

01 Tell your AI client what you're looking for, specifying criteria like a gene name (e.g., BRCA1) or drug compound (e.g., metformin).

02 The MCP translates that request into precise searches using the NCBI database tools and pulls back structured metadata.

03 Your agent receives a clean list of results, complete with abstracts, citation counts, and links to related literature.

The bottom line is you get accurate, filtered academic data directly into your workflow.

Built For

This MCP is essential for medical researchers, PhD candidates, pharmacologists, and clinicians who deal with literature review. If your job requires synthesizing evidence from multiple sources or tracking scientific advancements, this tool saves hours of manual database navigation.

Medical Researcher

Conducting comprehensive literature reviews by finding meta-analyses and tracing the impact of foundational studies.

Pharmacologist

Investigating drug interactions or determining efficacy by searching articles that mention specific compounds like aspirin or pembrolizumab.

PhD Student

Building a robust reading list for a dissertation, requiring the retrieval of multiple article details and related readings simultaneously.

What Changes When You Connect

01 Precision filtering: Instead of relying on broad keywords, you can use MeSH terms or search genes (e.g., BRCA1) to guarantee your results are highly specific to the topic at hand.

02 Contextual evidence gathering: The ability to run `get_citations` allows you to map a paper's influence, seeing exactly which later studies built upon its findings.

03 Efficiency in review writing: Use `get_abstract` to pull structured summaries (Background, Methods, Results) for dozens of papers quickly, letting you assess relevance without opening 50 PDFs.

04 Targeting evidence levels: If you need the highest level of proof, use `search_reviews` or `search_clinical` to filter out opinion pieces and focus only on systematic meta-analyses.

05 Building reading lists: The `batch_get_articles` tool lets your agent pull metadata for multiple papers at once, making it easy to compare studies side-by-side.

Real-World Applications

Evaluating a new drug's safety profile

A pharmacologist wants to check all evidence on metformin. They ask their agent to use `search_drugs` and then limit the results using `search_clinical`. The agent returns only Phase III randomized controlled trials, giving them immediate data on patient outcomes.

Writing a chapter on genetic markers

A PhD student needs to gather all literature related to TP53. They instruct their agent to use `search_genes` and then run `get_related_articles` multiple times, building a comprehensive bibliography of connected studies.

Quickly assessing research gaps

A clinician reads an interesting paper but needs more context. They ask the agent to use `search_by_mesh` for the core topic and then run `get_citations` on the original paper, immediately showing them who else has researched it.

Finding open-access systematic reviews

A researcher needs a quick overview of treatments that doesn't require expensive journal subscriptions. They ask their agent to use `search_reviews` combined with `search_free_full_text`, and the system returns only open-access meta-analyses.

Patterns to Avoid

Searching too broadly

✗ AVOID

Just running a general keyword search on PubMed expecting deep, structured results.

✓ INSTEAD

Don't just search keywords. Use specific tools like `search_by_mesh` or `search_genes`. These methods apply controlled vocabularies and guarantee the searches are academically precise.

Treating metadata as content

✗ AVOID

Copy-pasting titles and authors into a spreadsheet, hoping to manually gather all abstracts.

✓ INSTEAD

Use `get_abstract` to pull structured summaries for multiple articles in one go. This gives you the full sections (Background, Results) without having to read anything.

Missing follow-up context

✗ AVOID

Finding a critical paper and then stopping, assuming it’s the definitive source.

✓ INSTEAD

Always check the paper's influence. Use `get_citations` immediately after finding a key article to see who has built on that research since its publication.

The Right Fit

Use this MCP if your task involves deep, high-precision literature analysis—anything requiring controlled medical vocabulary or citation tracking. If you need to find articles related to specific molecular components (genes, drugs) or narrow the focus down to a certain study type (clinical trials, reviews), this is your tool. Don't use it if you are just looking for general news or popular science summaries; those sources won't have the depth of PubMed. If you only need simple article titles and dates without filtering by topic or drug, a basic search might suffice, but you'll miss critical context like MeSH terms or citation counts.

Manually building a comprehensive literature review is exhausting.

Today, compiling a thorough academic background requires jumping through hoops. You open PubMed, run a basic search, and then you're faced with thousands of results. You click into each one, manually reading the abstract to see if it’s relevant. Then you have to copy down the PMID, go back to another tab, and check for related papers or citation counts. It's hours spent on clicks and cross-referencing.

With this MCP connected through Vinkius, your agent handles that entire process in a single prompt. Instead of clicking 50 times, you tell it: 'Find all systematic reviews on Topic X mentioning Gene Y.' You get back a curated list with the necessary metadata for every paper, ready for synthesis.

The `get_related_articles` tool finds connections you wouldn't find otherwise.

In the old days, if a paper mentioned Gene A and was also used in an abstract about Drug B, you would have to search for 'Gene A AND Drug B' separately, hoping the keywords lined up. You might miss related work that didn't use those exact terms.

Now, `get_related_articles` uses NCBI’s sophisticated algorithm, considering titles, abstracts, and MeSH headings all at once. It shows you the scientific connections, not just the keyword matches. That changes everything.

Stanford PubMed: 16 Tools

This collection of tools lets you perform advanced academic searches across the largest database of medical literature, filtering results with extreme precision.

#	TOOL	DESCRIPTION
01	batch_get_articles	Retrieves full metadata for several articles using a list of PubMed IDs (PMIDs).
02	get_abstract	Pulls the complete structured abstract text from a single PubMed article.
03	get_article	Fetches core details for an article, including authors, journal name, and publication date, using its PMID.
04	get_citations	Finds articles that reference a specific paper, helping to track the work's academic impact.
05	get_related_articles	Uses NCBI's similarity algorithm to find literature related by title, abstract, or MeSH headings.
06	search_by_author	Finds articles published by a specific author using the 'Last Name First Initial' format.
07	search_by_journal	Limits results to papers published in a specified journal, like Nature or JAMA.
08	search_by_mesh	Performs highly precise searches using controlled medical topic vocabulary terms (MeSH).
09	search_clinical	Filters the search exclusively for clinical trial publications, including Phase I-IV reports.
10	search_drugs	Searches articles specifically about compounds or medicines by their name (e.g., metformin).
11	search_free_full_text	Limits the search to open-access articles where the full manuscript is available for free reading.
12	search_genes	Narrows results to articles that mention specific genes like TP53 or BRCA1.
13	search_pubmed	Performs a general search across the 36M+ database of biomedical articles on PubMed.
14	search_recent	Finds publications published within a certain timeframe, useful for staying current in your field.

#	TOOL	DESCRIPTION
15	search_reviews	Searches specifically for systematic review articles and meta-analyses to synthesize findings.
16	search_trending	Identifies research papers that are currently generating the most attention in the academic community.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U Find recent clinical trials for CAR-T cell therapy in lymphoma

I've searched PubMed for clinical trial publications on "CAR-T cell therapy lymphoma". The results include recent Phase I-III trials from major cancer centers.

U Search for BRCA1 gene articles related to breast cancer prevention

I've found PubMed articles mentioning the BRCA1 gene in the context of breast cancer prevention, including studies on genetic screening and prophylactic interventions.

U Find free full-text systematic reviews on metformin and diabetes prevention

I've filtered PubMed for free full-text systematic reviews on metformin and diabetes prevention, returning open-access meta-analyses from PubMed Central.

Frequently Asked Questions

01 **How do I search for specific genetic markers using Stanford PubMed?**

Use the `search_genes` tool. You simply provide the gene name (e.g., BRCA1 or TP53) and the MCP filters the 36M+ database to show only relevant articles.

02 **Is Stanford PubMed better than Google Scholar for medical research?**

For structured, verifiable biomedical data, yes. This MCP connects directly to the National Library of Medicine's gold standard source, providing tools like `search_by_mesh` that go beyond general keyword matching.

03 **How can I find out how important a paper is?**

You use the `get_citations` tool. It checks the database and tells you exactly which other researchers have cited that specific article, giving you a measure of its academic impact.

04 **What if I only want articles I can read for free?**

Run a search using `search_free_full_text`. This tool filters out paywalled content and returns only open-access articles available through PubMed Central, saving you time.

05 **Can Stanford PubMed help me compare multiple studies?**

Yes. You can use the `batch_get_articles` tool to pull full metadata for several specific PMIDs in one go, making comparison straightforward.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"stanford-pubmed": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Stanford PubMed is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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