

## vi. Research publication portals in Āyurveda and contemporary medical science...

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## Research Publication Portals in Āyurveda and Contemporary Medical Science

### Gateways to Evidence-Based Integration

#### 1. DHARA (Digital Helpline for Ayurveda Research Articles)

- **Objective:** Curates peer-reviewed Āyurvedic research for academia and industry.
- **Features:**
  - **Database:** 50,000+ articles (1980–2023) across 500+ journals (e.g., *Journal of Ethnopharmacology*, *AYU*).
  - **Advanced Search:** Filters by *dravya* (herb), *rasa* (taste), *rog* (disease), or modern biomarkers (e.g., TNF- $\alpha$ ).
  - **Global Collaboration:** Links to **WHO Global Index Medicus** for cross-referencing.
- **Key Contribution:**
  - **Meta-Analysis Tools:** Facilitates systematic reviews (e.g., *Ashwagandha* in stress management).
  - **Case Study:** DHARA's 2022 report on *Guduchi* (*Tinospora cordifolia*) for COVID-19 immunity influenced WHO's TM strategy.

#### 2. PubMed (National Library of Medicine)

- **Role:** Premier biomedical database for Āyurveda-modern medicine integration.
- **Āyurvedic Research Highlights:**
  - **Clinical Trials:** 1,200+ RCTs (e.g., *Curcumin* for arthritis, PMID: 25618800).
  - **Pharmacology:** Mechanistic studies (e.g., *Bacopa monnieri* and BDNF upregulation, PMID: 29174974).
- **Global Impact:**
  - **Citation Metrics:** Āyurveda-related papers average 15+ citations (2023 data).
  - **Collaborative Networks:** Links to **ICMR**, **CCRAS**, and **Harvard Medical School** studies.

#### 3. AYUSH Research Portal

- **Managed By:** Ministry of AYUSH.
- **Scope:**
  - **Publications:** 30,000+ studies (preclinical, clinical, socio-economic).
  - **Policy Documents:** White papers on Āyurveda integration in national health programs.
- **Unique Features:**
  - **TKDL Integration:** Cross-references traditional formulations with modern patents.
  - **Open Access:** Free downloads of *Ayurvedic Pharmacopoeia of India* and *AFI*.
- **Case Study:** Portal's 2021 compendium on *Triphala* guided FSSAI's nutraceutical regulations.

#### 4. National Medicinal Plants Board (NMPB) Bioinformatics Centre

- **Objective:** Digitize ethnomedicinal data for research and conservation.
- **Tools:**
  - **FRLHT-ENVIS Database:** 8,000+ plant species with GIS-based habitat mapping.
  - **PhytoChemica:** AI-driven phytochemical repository (e.g., *Withanolides* in *Ashwagandha*).
- **Applications:**
  - **Drug Discovery:** Identified *Berberine* (from *Daruharidra*) as a SARS-CoV-2 M<sup>pro</sup> inhibitor.
  - **Conservation:** Red-listed 112 endangered species (e.g., *Aconitum heterophyllum*).

#### 5. Research Management Informatic System (ReMIS)

- **Managed By:** Ministry of AYUSH.



- **Purpose:** Streamline AYUSH research projects from proposal to publication.
- **Features:**
  - **Workflow Automation:** Tracks 500+ ongoing projects (e.g., CCRAS's *Ayurgenomics*).
  - **Data Analytics:** Metrics on funding patterns (e.g., 40% grants for *Prakriti*-based studies).
- **Impact:**
  - **Transparency:** Public dashboards for grant disbursement (₹1,200+ crore since 2020).
  - **Collaboration Hub:** Links researchers with ICMR, DBT, and industry (e.g., Himalaya Drug Company).

## 6. Comparative Analysis of Portals

Portal	Focus	Unique Feature	Global Integration
DHARA	Āyurvedic literature	Rasa-based search filters	WHO Global Index Medicus
PubMed	Biomedical integration	High-impact RCTs and reviews	NIH, Cochrane Library
AYUSH Portal	Policy-driven research	TKDL-linked patents	WHO Traditional Medicine Strategy
NMPB Bioinfo	Ethnobotany & AI	GIS-based conservation tools	GBIF (Global Biodiversity Portal)
ReMIS	Project management	Real-time funding analytics	SDG-linked project tracking

## 7. Challenges and Innovations

### a. Challenges

- **Fragmented Data:** Lack of interoperability between AYUSH and modern databases.
- **Quality Control:** Variable peer-review standards in Āyurvedic journals.
- **Language Barriers:** Limited multilingual access (e.g., Sanskrit-to-English NLP tools).

### b. Technological Innovations

- **AI-Driven Curation:**
  - **AyurVAHI** (AYUSH-NIC): NLP tool analyzing classical texts (e.g., *Charaka Samhita*) for modern research cues.
- **Blockchain for IP Protection:**
  - **TKDL 2.0:** Immutable ledger for traditional knowledge (prevents biopiracy).

### c. Future Directions

- **Global Interoperability:** Align DHARA with **ClinicalTrials.gov** and **EU Clinical Trials Register**.
- **Citizen Science:** Crowdsourced data via apps like **AYUSH Sanjivani**.
- **Big Data Analytics:** Predictive modeling for drug repurposing (e.g., *Giloy* for Long COVID).

## Conclusion

These portals are pivotal in transforming Āyurveda from a traditional system into a globally recognized, evidence-based discipline. By leveraging AI, open-access frameworks, and interdisciplinary collaboration, they address critical gaps in research accessibility, reproducibility, and commercialization. Future advancements must prioritize **FAIR principles** (Findable, Accessible, Interoperable, Reusable) to solidify Āyurveda's role in integrative medicine.