

Resource Summary Report

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RHEA

RRID:SCR_004713

Type: Tool

Proper Citation

RHEA (RRID:SCR_004713)

Resource Information

URL: <http://www.rhea-db.org/>

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Description: Manually annotated reaction database where all reaction participants (reactants and products) are linked to the ChEBI database (Chemical Entities of Biological Interest) which provides detailed information about structure, formula and charge. Rhea provides built-in validations that ensure both elemental and charge balance of the reactions. The database has been populated with the reactions found in the Enzyme Commission (EC) list (and in the IntEnz and ENZYME databases), extending it with additional known reactions of biological interest. While the main focus of Rhea is enzyme-catalyzed reactions, other biochemical reactions are also included. Rhea is a manually annotated resource and it provides: stable reaction identifiers for each of its reactions; directionality information if the physiological direction of the reaction is known; the possibility to link several reactions together to form overall reactions; extensive cross-references to other resources including enzyme-catalyzed and other metabolic reactions, such as the EC list (in IntEnz), KEGG, MetaCyc and UniPathway; and chemical substructure and similarity searches on compounds in Rhea.

Abbreviations: RHEA

Resource Type: data or information resource, data repository, storage service resource, database, service resource

Defining Citation: [PMID:27789701](#)

Keywords: biochemical reaction, reaction, enzyme-catalyzed reaction, spontaneous reaction, enzyme, chemical reaction, gold standard, FASEB list

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SystemsX.ch ;
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EMBL ;

European Union

Availability: Public, Free, Acknowledgement requested, Available for download, The community can contribute to this resource

Resource Name: RHEA

Resource ID: SCR_004713

Alternate IDs: r3d100010891, nlx_70986

Alternate URLs: <https://doi.org/10.17616/R3332H>

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License URLs: <http://www.rhea-db.org/licensedisclaimer>

Record Creation Time: 20220129T080226+0000

Record Last Update: 20260801T042554+0000

Ratings and Alerts

No rating or validation information has been found for RHEA.

No alerts have been found for RHEA.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 172 mentions in open access literature.

Listed below are recent publications. The full list is available at [PRECISE-TBI](#) .

Luo Z, et al. (2025) Determinants of vacancy formation and migration in high-entropy alloys. Science advances, 11(1), eadr4697.

Takács-Lovász K, et al. (2025) Altered aminoacid and lipid metabolism in a rat orofacial inflammation model determined by omics approach: potential role in trigeminal sensitisation. The journal of headache and pain, 26(1), 108.

Mou Y, et al. (2025) Outdoor air pollution, road traffic noise, and allostatic load in children aged 6-11 years: evidence from six European cohorts. European journal of epidemiology, 40(5), 537.

Pate SC, et al. (2025) RC-GNN: A predictive model of enzyme-reaction pairs. bioRxiv : the preprint server for biology.

- Rashwan HH, et al. (2025) Insights into the tripartite relationship between cervical cancer, human papillomavirus, and the vaginal microbiome: a mega-analysis. *Human genomics*, 19(1), 89.
- Petraro S, et al. (2025) Plastic-Microbial BioRemediation DB: A Curated Database for Multi-Omics Applications. *Environmental microbiology reports*, 17(5), e70178.
- Gricourt G, et al. (2025) BioRGroup dataset: R-group expansion of ChEBI molecules referenced in the Rhea database. *Scientific data*, 12(1), 1692.
- Zeng Z, et al. (2025) CLAIRE: a contrastive learning-based predictor for EC number of chemical reactions. *Journal of cheminformatics*, 17(1), 2.
- Kim GB, et al. (2025) Comprehensive evaluation of the capacities of microbial cell factories. *Nature communications*, 16(1), 2869.
- Marzouk NH, et al. (2025) Proinflammatory and GABA eating bacteria in Parkinson's disease gut microbiome from a meta-analysis prospective. *NPJ Parkinson's disease*, 11(1), 145.
- Hutchison MG, et al. (2025) Evaluating User Experience and Satisfaction in a Concussion Rehabilitation App: Usability Study. *JMIR formative research*, 9, e67275.
- Deng X, et al. (2025) Long-chain acyl-CoA synthetases: biological functions, diseases and therapeutic targets. *Molecular biomedicine*, 6(1), 117.
- Baumeister T, et al. (2025) Loss of FXR or Bile Acid-dependent Inhibition Accelerate Carcinogenesis of Gastroesophageal Adenocarcinoma. *Cellular and molecular gastroenterology and hepatology*, 19(8), 101505.
- Coleman OI, et al. (2025) ATF6 activation alters colonic lipid metabolism causing tumour-associated microbial adaptation. *Nature metabolism*, 7(9), 1830.
- Jimenez K, et al. (2025) An unexpected tumor-resistant phenotype from floxing PAK1 in a mouse model of colitis associated cancer. *Scientific reports*, 15(1), 29174.
- Lv L, et al. (2025) A tunable and reversible thermo-inducible bio-switch for streptomycetes. *Nucleic acids research*, 53(2).
- Ziegler FMR, et al. (2025) A full genome assembly reveals drought stress effects on gene expression and metabolite profiles in blackcurrant (*Ribes nigrum* L.). *Horticulture research*, 12(2), uhae313.
- Intze E, et al. (2025) The infant microbiota hopscotches between community states toward maturation-longitudinal stool parameters and microbiota development in a cohort of European toddlers. *ISME communications*, 5(1), ycaf016.
- Rashwan HH, et al. (2025) Unravelling novel microbial players in the breast tissue of TNBC patients: a meta-analytic perspective. *NPJ biofilms and microbiomes*, 11(1), 182.
- Böswald LF, et al. (2025) Fibre supplementation alters the gastrointestinal microbiome, the microbial metabolites and indicators of neurodegeneration in a mouse model of Alzheimer's disease. *Scientific reports*, 15(1), 32705.