

Resource Summary Report

Generated by SPARC SAWG on Jul 28, 2026

WholeCellKB

RRID:SCR_004104

Type: Tool

Proper Citation

WholeCellKB (RRID:SCR_004104)

Resource Information

URL: <http://www.wholecellkb.org/>

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Description: A collection of free, open-source model organism databases designed specifically to enable comprehensive, dynamic simulations of entire cells and organisms. WholeCellKB provides comprehensive, quantitative descriptions of individual species including: * Their subcellular organization, * Their chromosome sequences, * The essentiality, location, length, direction, and homologs of each gene, * The organization and promoter of each transcription unit, * The expression and degradation rate of each RNA gene product, * The specific folding and maturation pathway of each RNA and protein species including the localization, N-terminal cleavage, signal sequence, prosthetic groups, disulfide bonds, and chaperone interactions of each protein species, * The subunit composition of each macromolecular complex, * Their genetic code, * The binding sites and footprint of every DNA-binding protein, * The structure, charge, and hydrophobicity of every metabolite, * The stoichiometry, catalysis, coenzymes, energetics, and kinetics of every chemical reaction, * The regulatory strength of each transcription factor on each promoter, * Their chemical composition, and * The composition of its typical SP-4 laboratory growth medium. WholeCellKB currently contains a single database of *Mycoplasma genitalium*, an extremely small gram-positive bacterium and common human pathogen. This database is the most comprehensive description of any single organism to date, and was used to develop the first whole-cell computational model. Users can download the WholeCellKB source code and content to create and customize - including the content, data model, and user interface - their own model organism database.

Abbreviations: WholeCellKB

Synonyms: *Mycoplasma genitalium* database, WholeCellKB-MG, Whole Cell KB

Resource Type: database, web service, software resource, source code, model, data access protocol, data or information resource

Defining Citation: [PMID:23175606](#), [PMID:22817898](#)

Keywords: model organism, whole-cell model, gene, protein, reaction, pathway, phenotype, genotype, simulation, cell, organism

Availability: Free, Open unspecified license, Acknowledgement requested, The community can contribute to this resource

Resource Name: WholeCellKB

Resource ID: SCR_004104

Alternate IDs: nlx_158579

Alternate URLs: <http://wholecellkb.stanford.edu>

Record Creation Time: 20220129T080222+0000

Record Last Update: 20260728T043156+0000

Ratings and Alerts

No rating or validation information has been found for WholeCellKB.

No alerts have been found for WholeCellKB.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 1 mentions in open access literature.

Listed below are recent publications. The full list is available at [SPARC SAWG](#) .

Maritan M, et al. (2022) Building Structural Models of a Whole Mycoplasma Cell. Journal of molecular biology, 434(2), 167351.