

**Table 9:** Metabolic and enzyme databases

Name	URL	Brief description	Download of Data	Current status
1-CMDb	<a href="http://slsdb.manipal.edu/ocm/">http://slsdb.manipal.edu/ocm/</a>	Multi omics associated with one carbon metabolism	Yes	Online
CaspDB	<a href="http://caspdb.sanfordburnham.org">http://caspdb.sanfordburnham.org</a>	Cleavage sites in proteins collected in Uniprot and their orthologs	No	Offline
CFam	<a href="http://bidd2.nus.edu.sg/cfam">http://bidd2.nus.edu.sg/cfam</a>	Cluster drugs, bioactive molecules, human metabolites, natural products, patented agents and other molecules	No	Offline
CIDeR*	<a href="http://mips.helmholtz-muenchen.de/cider/">http://mips.helmholtz-muenchen.de/cider/</a>	Information from neurological and metabolic diseases	Yes	Online
DESTAF	<a href="https://www.cbrc.kaust.edu.sa/destaf/">https://www.cbrc.kaust.edu.sa/destaf/</a>	Metabolism and toxins in diseases and tissues	Yes	Online
dkNET	<a href="https://dknet.org/">https://dknet.org/</a>	Integrated data of Diabetes and Digestive and Kidney Diseases	Yes	Online
HEMD	<a href="http://mdl.shsmu.edu.cn/HEMD/">http://mdl.shsmu.edu.cn/HEMD/</a>	Human epigenetic enzymes and chemical modulators	Yes	Online
HEPATONET1	<a href="http://www.ebi.ac.uk/biomodels-main/MODEL1009150000">http://www.ebi.ac.uk/biomodels-main/MODEL1009150000</a>	Genome-scale metabolic network of human hepatocytes	No	Online
HMA*	<a href="https://metabolicatlas.org/">https://metabolicatlas.org/</a>	Comprehensive human metabolic information as models	Yes	Online
HumanCyc*	<a href="https://humancyc.org/">https://humancyc.org/</a>	Human nutrition that associates with a set of metabolic pathways	No	Online
Hupho	<a href="http://hupho.uniroma2.it/">http://hupho.uniroma2.it/</a>	Human Phosphatase portal	Yes	Online
KinMap	<a href="http://www.kinhub.org/kinmap/">http://www.kinhub.org/kinmap/</a>	Interactive navigation through human kinome data	Yes	Online
KinMutRF	<a href="http://kinmut2.bioinfo.cnio.es/KinMut2">http://kinmut2.bioinfo.cnio.es/KinMut2</a>	Prediction of variants in the human protein kinase superfamily	No	Offline
metabolicMine	<a href="https://www.humanmine.org/humanmine/begin.do">https://www.humanmine.org/humanmine/begin.do</a>	Metabolome profiling and model organisms	Yes	Online
MetSigDis	<a href="http://www.bio-annotation.cn/MetSigDis/">http://www.bio-annotation.cn/MetSigDis/</a>	Metabolite alterations in various diseases	Yes	Offline
MSEA	<a href="https://www.metaboanalyst.ca/">https://www.metaboanalyst.ca/</a>	Enrichment analyses for (primarily human) metabolomic studies	Yes	Online
NOPdb	<a href="http://www.lamondlab.com/NOPdb">http://www.lamondlab.com/NOPdb</a>	Nucleolar proteins identified by mass spectrometry analyses	No	Offline
PeroxisomeDB	<a href="http://www.peroxisomedb.org/">http://www.peroxisomedb.org/</a>	Peroxisomal proteins, molecular function, metabolic pathway and disorders	Yes	Online
PhosphoPredict	<a href="http://phosphopredict.erc.monash.edu/">http://phosphopredict.erc.monash.edu/</a>	Predict kinase-specific phosphorylation substrates and sites in the human proteome	Yes	Online
Piphillin*	<a href="http://piphillin.secondgenome.com/">http://piphillin.secondgenome.com/</a>	Metagenomic data by Direct Inference from Human Microbiomes	Yes	Online
R spider	<a href="http://www.bioprofiling.de/gene_list.html">http://www.bioprofiling.de/gene_list.html</a>	Pathway analysis from KEGG and Reactome	No	Online

RegenBase	<a href="http://regenbase.org/">http://regenbase.org/</a>	Effect of compounds on enzyme activity and cell growth	Yes	Online
TSEM*	<a href="https://hood-price.isbscience.org/research/tsem/">https://hood-price.isbscience.org/research/tsem/</a>	Tissue specific encyclopedia of metabolism and metabolic models	Yes	Online
VMH	<a href="https://vmh.life/">https://vmh.life/</a>	Human metabolism and genetics, microbial metabolism, nutrition, and diseases	Yes	Online

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\*Top tools ranked by the authors.