

Resource Summary Report

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PRED-COUPLE 2

RRID:SCR_006193

Type: Tool

Proper Citation

PRED-COUPLE 2 (RRID:SCR_006193)

Resource Information

URL: <http://athina.biol.uoa.gr/bioinformatics/PRED-COUPLE2/>

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Description: A tool that predicts the coupling specificity of G-protein coupled receptors to G-proteins. We present a method that combines hidden Markov models and a feed-forward artificial neural network to overcome these limitations, while producing the most accurate predictions currently available. Using an up-to-date curated dataset, our method yields a 94% correct classification rate in a 5-fold cross-validation test. The method predicts also promiscuous coupling preferences, including coupling to G12/13, whereas unlike other methods avoids overpredictions (false positives) when non-GPCR sequences are encountered. * The PRED-COUPLE 2.00 system predicts coupling specificity of GPCRs to all families of G-proteins (including G12/13). * Coupling to more than one G-protein families can also be predicted with this tool. * No membrane topology information is required. Furthermore, no membrane topology prediction is executed by this method. * The method is based on a refined library of highly-discriminative Hidden Markov Models. Hits from individual profiles are combined by a feed-forward Artificial Neural Network to produce the final output. * Seven (7) transmembrane receptor signatures from the Pfam database version 17.00 are also applied in order to verify a true GPCR sequence. When a query sequence is not recognized as a 7 transmembrane receptor a message is shown.

Abbreviations: PRED-COUPLE 2

Synonyms: PRED-COUPLE

Resource Type: analysis service resource, data analysis service, production service resource, service resource

Defining Citation: [PMID:16174684](#), [PMID:15847681](#)

Keywords: predict, g-protein coupled receptor, g-protein, fasta, hidden markov model, coupling specificity

Funding: Greek Ministry of National Education and Religious Affairs

Availability: Free for academic use

Resource Name: PRED-COUPLE 2

Resource ID: SCR_006193

Alternate IDs: nlx_151738

Record Creation Time: 20220129T080234+0000

Record Last Update: 20260905T133134+0000

Ratings and Alerts

No rating or validation information has been found for PRED-COUPLE 2.

No alerts have been found for PRED-COUPLE 2.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 6 mentions in open access literature.

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

Wang ZZ, et al. (2026) Dual interference with host neuropeptide signaling allows parasitoid wasp to hijack host sugar metabolism. The EMBO journal, 45(6), 2030.

Held M, et al. (2025) Aminergic and peptidergic modulation of insulin-producing cells in Drosophila. eLife, 13.

Yadav DK, et al. (2024) Proteome-wide analysis reveals G protein-coupled receptor-like proteins in rice (Oryza sativa). Plant signaling & behavior, 19(1), 2365572.

Kundu A, et al. (2023) Stringent in-silico identification of putative G-protein-coupled receptors (GPCRs) of the entomopathogenic nematode Heterorhabditis bacteriophora. Journal of nematology, 55(1), 20230038.

Zandawala M, et al. (2021) A neuroendocrine pathway modulating osmotic stress in Drosophila. PLoS genetics, 17(3), e1009425.

Roberts RE, et al. (2017) Identification of putative olfactory G-protein coupled receptors in Crown-of-Thorns starfish, Acanthaster planci. BMC genomics, 18(1), 400.