

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 [Kravitz](#) .

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.