Universität Basel

Research Project

The SWISS-MODEL expert system for comparative protein structure modeling

Project funded by own resources

Project title The SWISS-MODEL expert system for comparative protein structure modeling
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SWISS-MODEL is a web-based expert system dedicated to protein structure homology modeling. Homology modeling is currently the most accurate method to generate reliable three-dimensional protein structure models and is routinely used in many practical applications. Homology (or comparative) modeling methods make use of experimental protein structures (“templates”) to build models for evolutionary related proteins (“targets”). SWISS-MODEL is one of the most widely used web-based modeling servers with nearly one million model requests annually.

The SWISS-MODEL Workspace provides a personal working environment where the user can carry out several modeling projects in parallel. The necessary resources, i.e. up-to-date protein sequence and structure databases and specialized tools for template selection, model building and structure quality evaluation are accessible using a web interface.ă Currently, the system supports more than 250’000 registered users.

The SWISS-MODEL Repository is a database of 3D protein structure models generated by the SWISS-MODEL homology-modeling pipeline. The aim of the SWISS-MODEL Repository is to provide access to an up-to-date collection of annotated 3D protein models for human proteins and a set of relevant models organisms. The Repository allows the users to assess the quality of the models in the database, search for alternative template structures, and to build models interactively via SWISS-MODEL Workspace. The SWISS-MODEL Repository is tightly integrated with external resources such as UniProt, InterPro and STRING databases. The services of the SWISS-MODEL expert system are available at http://swissmodel.expasy.org/

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Add publication

Published results

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Specify cooperation partners

ID	Kreditinhaber	Kooperationspartner	Institution	Laufzeit - von	Laufzeit - bis
105150	Schwede, Torsten	von Mering, Christian	University of Zürich	01.01.2009	31.12.2011