

UniProt

THE UNIVERSAL PROTEIN RESOURCE

Proteins are vital to all living processes and are the functional units required to sustain life. Enzymes, hormones and antibodies are all proteins. Proteins are composed of 20 amino acids which can be arranged in millions of different ways (sequence) to create millions of different proteins, each one with a specific function.

UniProt is the comprehensive resource for proteins. It brings together all available information for a given protein, providing analysis, comparisons as well as a critical review of associated experimental and predicted data. It is the central hub for proteins, consolidating data from many sources, adding value and providing essential information for many other resources to use. It acts as a fundamental resource for research in biology and molecular medicine.

Collaborative Effort

UniProt is a collaboration between the **European Bioinformatics Institute (EMBL-EBI)**, the **SIB Swiss Institute of Bioinformatics** and the **Protein Information Resource (PIR)**. Across the three institutes, about 100 people are involved in different tasks such as database curation, software development and user support.



IMPACT

Information into Knowledge

By unifying the available data for a given protein and adding expert annotation, UniProt is a vital tool for researchers to turn information into knowledge and knowledge into the next research project.

Networked Discovery

UniProt is connected to **138** other well established biological data resources. By linking knowledge to a comprehensive and diverse set of biological databases, UniProt provides a networked resource for everything that is known about a protein and its wider context. It is known that a database linked to UniProt has increased web traffic which demonstrates that UniProt improves the discoverability of relevant information by scientists.

Fundamental to Research

UniProt is used by hundreds of thousands of researchers worldwide each month. UniProt is cited by scientists in thousands of patents and publications because the usage of UniProt identifiers is the de facto standard for proteins in the bioscience community worldwide. This standardisation provides a fundamental platform on which new research can base its knowledge, saving duplication and misinterpretation and ensuring successful outcomes in the essential research required to solve a wide variety of challenges facing human disease and industrial applications.

High Quality

UniProt is known worldwide for providing gold standard data of an exceptionally high quality which is essential for all the scientists and other resources using UniProt. *"The manually curated database UniProtKB/Swiss-Prot shows the lowest annotation error levels (close to 0% for most families)"*⁰⁰². This long term and ongoing high quality means that generations of scientists know they can trust the information provided.

SUPPORTING PUBLICATIONS

- 001 *UniProt consortium:*
UniProt: a hub for protein information
Nucleic Acids Research, 2015, 43(Database issue)
- 002 *Schnoes AM, Brown SD, Dodevski I, Babbitt PC.*
Annotation error in public databases: misannotation of molecular function in enzyme superfamilies.
PLoS Computational Biology [2009, 5(12):e1000605]
- 003 *Magrane M. and the UniProt consortium:*
UniProt Knowledgebase: a hub of integrated protein data
Database, 2011: bar009 (2011).
- 004 *Charles Beagrie Ltd: 2016*
The Value and Impact of The EMBL-EBI

RESEARCH EFFICIENCY

50%



50% time saving was reported from over 2,600 identified UniProt users in a recent EMBL-EBI Impact survey⁰⁰⁴ of over 4,000 respondents.

The calculated economic impact represents a direct worth of between £5,382 to £26,000 per respondent.

TRANSLATION

15,170



UniProtKB has been cited 15170 times in Class A & C IPCR patents published post 2000, where precise and authoritative molecular descriptions are required.

CITATIONS

10,369



UniProt is heavily cited in published scientific papers, covering a diverse range of topics, including human disease, demonstrating its importance as a knowledge database.

INFORMATION TO KNOWLEDGE



400,000 UNIQUE USERS MONTHLY

10,000,000 VISITS ANNUALLY

FROM 232 COUNTRIES AND TERRITORIES