

Prerequisite Terminologies:

In order to have better understanding of the main topic, you should have the basic concept of the following term:

1. Protein conserved regions (i.e., Motifs and Domains).
2. Protein Families.
3. GO terms.

Introduction:

InterPro is a database of protein families, domains and the functional sites of proteins to functionally classify the proteins in various protein families, to predict their domains and to analyze important sites within the protein. To do so, InterPro utilizes various member databases that are integrated within InterPro. InterPro combines protein signatures from these member databases into a single searchable resource, capitalising on their individual strengths to produce a powerful integrated database and diagnostic tool.

Steps:

- Click on the link below to visit the InterPro webpage:
<http://www.ebi.ac.uk/interpro/>
- **Query search:**
 - **Search by sequence:** enter the FASTA sequence of any protein to analyze the results from the InterPro and other member databases that are integrated with InterPro.
 - **Search by text:** enter the protein family names, domain names, proteins names, keywords or any GO terms to search it against the InterPro database and its other member databases. For example, you can use accession numbers of various protein databases such as pfam, UniProt, GO, InterPro, etc.
 - **Search by Domain Architecture:** Domain architectures are derived from matches to Pfam models. You can select domains to either be included or excluded from your search results. The results will include all proteins which match the domain architecture selected below. Domains can be selected using either a Pfam accession, or an InterPro accession, where that InterPro entry includes a Pfam mode.
 - Once you've entered the search query, the results will be fetched from InterPro itself as well as other member databases that are integrated within the InterPro database, which includes CATH-Gene3D, CDD, HAMAP, PANTHER, Pfam, etc.
 - It also provides the list of 'Latest entries' from various member databases, on the homepage of InterPro so that you can analyze and work on the various databases.

Summary:

In this introductory video of InterPro, we came to know about the InterPro database which allows us to study a protein through various databases in a more efficient way rather than visiting various databases and getting the information from all those individual databases. We also got to know how to search a query in different ways and fetch the required results from InterPro.