

NEXTPROT: THE NEW HUMAN PROTEIN KNOWLEDGE RESOURCE

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In September 2008, the UniProt/Swiss-Prot group achieved a major milestone: the first complete manual annotation of the full set of human proteins (derived from about 20'000 genes). This corpus of data which is quite rich in information pertinent to modern biomolecular medical research, clearly shows that there is a large gap in our knowledge of human proteins in terms of functional information as well as protein characterization (PTMs, protein/protein interactions, subcellular locations, etc). This gap resides not only in the available experimental information, but also in the way this information has been stored, which is far from being sufficient to help researchers making sense of what all these human proteins do in our bodies! Therefore, in the framework of CALIPHO, a new interdisciplinary group created jointly by the University of Geneva and the SIB, we are developing neXtProt, a new human-centric protein knowledge resource.

neXtProt is developed with the aim to help researchers answer pertinent questions relevant to human proteins. This requires answering 3 different challenges:

- 1) Add to the corpus of data on human proteins that is already in Swiss-Prot, a lot of additional information. We will import in neXtProt data originating from a variety of high-throughput approaches such as microarray, antibodies, proteomics, siRNAs, interactomics, etc. All of these data sets must be carefully selected so as to only provide high-quality data as we want to avoid creating a noisy and dirty compendium.
- 2) Organize the data in such a way that it is possible to make powerful queries in the most user-friendly environment.
- 3) Build a software platform that will allow tools ranging from sequence analysis to text and data mining to be integrated so as to answer specific needs of academic and industrial users.

neXtProt is a common development of the SIB and of GeneBio SA. It is available as a beta release at "beta.nextprot.org". We hope you will enjoy working with it and will help us making it evolve by telling us of your specific needs.