# HUPHO: the human phosphatase portal

**S. Liberti[1] ✉, A. Calderone[1], F. Sacco[1], L. Perfetto[1], M. Iannuccelli[1], S. Panni[2], E. Santonico[1], A. Palma[1], A.P. Nardozza[1], L. Castagnoli[1], G. Cesareni[3]**

[1]Department of Biology, University of Rome Tor Vergata, Rome, Itlay
[2]Department of Biology, University of Rome Tor Vergata, Rome, Department of Cell Biology, University of Calabria, Rende, Italy
[3]Department of Biology, University of Rome Tor Vergata, Rome, Research Institute Fondazione Santa Lucia, Rome, Italy

## Motivations

Phosphatases, together with kinases, contribute to the regulation of protein phosphorylation homeostasis in the cell. Phosphorylation is a key post translational modification underlying the regulation of many cellular processes. Thus a comprehensive picture of phosphatase function and the identification of their target substrates would aid a systematic approach to a mechanistic and holistic description of cell signalling. In this paper we report a web site designed to facilitate the retrieval of information about human protein phosphatases.

## Methods

We developed a web server, named HuPho (Human Phosphatases), and a search engine to recover information that has been annotated in several publicly available web resources. From the web site interface, scientists can dynamically access a number to different repositories where public data about protein domain composition, aminoacidic sequence, 3D structure, protein-protein interactions, pathways annotation, annotation for disease and more are stored. The protein-protein interaction data have been further explored and integrated to identify phosphoproteins enzymatic substrates. The utilization of a programmatic access to the data sources avoid updating issues on data, that as a result are always aligned to the latest release.

## Results

We provided the scientific community with a resource that can be easily interrogated to obtain structural and functional information about human protein phosphatases. Much of the information is retrieved by interrogating the web services of publicly available repositories. This information is integrated with data specifically curated by our group and stored in our internal database. Finally the information is organized to allow the user to browse the knowledge through a single pane of glass.

## Availability

http://hupho.uniroma2.it/