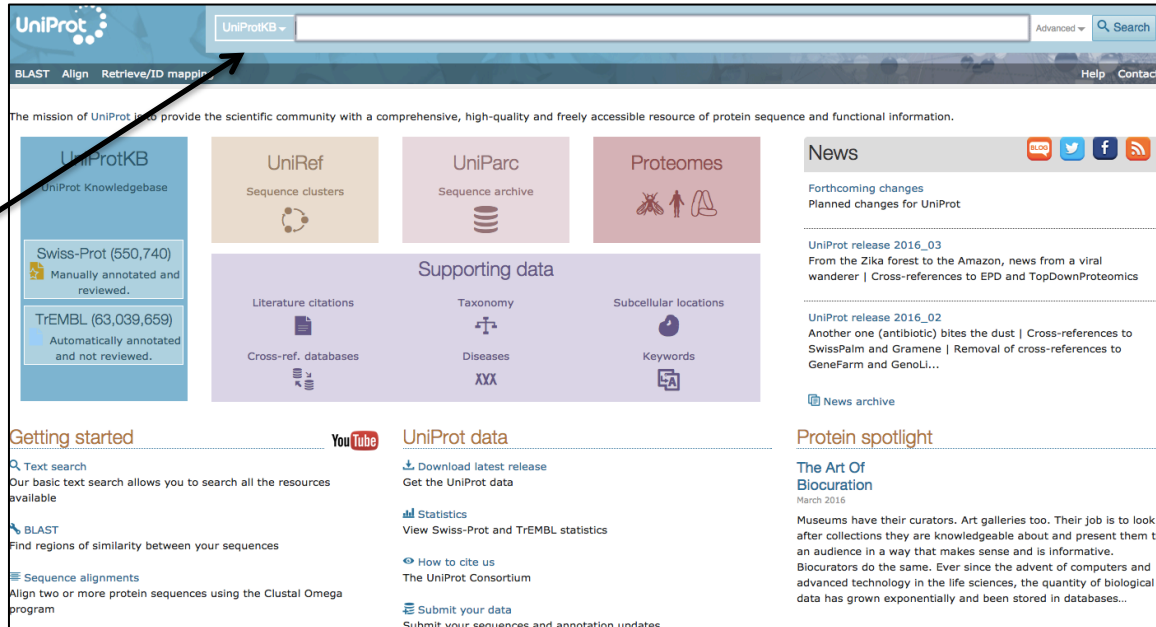


New Direction for using UniProt:

Go to <http://www.uniprot.org/>

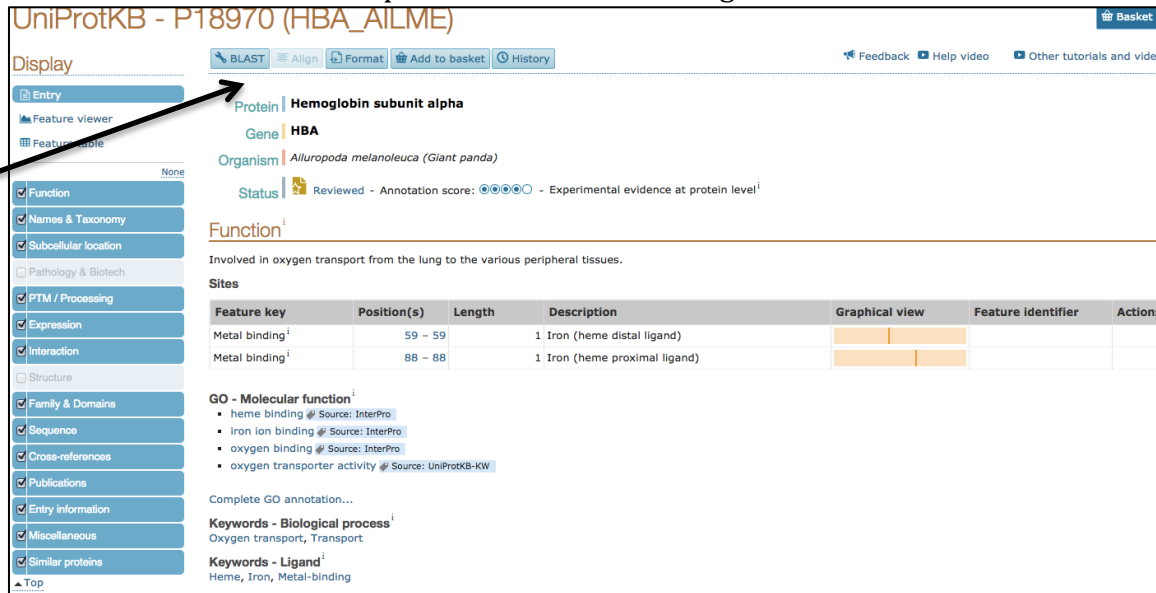
On the top bar, you can type in: “giant panda, hemoglobin” and press Search



The screenshot shows the UniProt homepage. At the top, there is a search bar with the text "UniProtKB" and a search button. Below the search bar, there are several navigation links: BLAST, Align, Retrieve/ID mapping, Help, and Contact. The main content area is divided into several sections: UniProtKB (UniProt Knowledgebase), UniRef (Sequence clusters), UniParc (Sequence archive), and Proteomes. There is also a "Supporting data" section with links to Literature citations, Taxonomy, Subcellular locations, Cross-ref. databases, Diseases, and Keywords. A "News" section on the right lists upcoming and planned changes. At the bottom, there are sections for "Getting started", "UniProt data", and "Protein spotlight". An arrow points to the search bar at the top.

Find the HBA AILME (P18970) and click on the blue code letters to see a full description for the protein and the particular amino acid sequence.

Press BLAST to find similar protein chain to other organisms.



The screenshot shows the UniProtKB entry for P18970 (HBA_AILME). The entry is for the protein Hemoglobin subunit alpha from the organism *Ailuropoda melanoleuca* (Giant panda). The entry is reviewed and has an annotation score of 100. The function is described as "Involved in oxygen transport from the lung to the various peripheral tissues." The entry includes a table of sites, a list of GO molecular functions, and keywords for biological process and ligand. An arrow points to the BLAST button in the top navigation bar.

Feature key	Position(s)	Length	Description	Graphical view	Feature identifier	Actions
Metal binding ¹	59 – 59	1	Iron (heme distal ligand)			
Metal binding ¹	88 – 88	1	Iron (heme proximal ligand)			

GO - Molecular function¹

- heme binding ¹ Source: InterPro
- iron ion binding ¹ Source: InterPro
- oxygen binding ¹ Source: InterPro
- oxygen transporter activity ¹ Source: UniProtKB-KW

Keywords - Biological process¹

Oxygen transport, Transport

Keywords - Ligand¹

Heme, Iron, Metal-binding

The BLAST result shows you're the top matches first, which lists the scientific names of the organisms. Follow the rest of the lab instruction from Step 10-12

BLAST

How to use this tool

The Basic Local Alignment Search Tool (BLAST) finds regions of local similarity between sequences, which can be used to infer functional and evolutionary relationships between sequences as well as help identify members of gene families.

1. Enter either a protein or nucleotide sequence or a UniProt identifier (e.g.P00750 or A4_HUMAN or UP10000000001) into the form field.
2. Optionally, change the program parameters with the dropdown menus under the form.
3. Click the *Run BLAST* button.

[Help](#) [Blast help video](#) [Other tutorials and videos](#) [Downloads](#)

100806040200

Identity %

Filter by

Reviewed (96)

Unreviewed (1,204)

With 3D structure (11)

Proteomes (29)

Popular organisms

Human (4)

Mouse (8)

AILME (2)

AILFU (1)

URSTH (1)

Edit and resubmit

Order by: Score

Overview

Show all 250

Entry	Protein names	Match hit	Identity
D2HDV4	Hemoglobin subunit alpha (Ailuropoda melanoleuca)	<div><div></div></div>	100.0%
P18970	Hemoglobin subunit alpha (Ailuropoda melanoleuca)	<div><div></div></div>	100.0%
P18969	Hemoglobin subunit alpha (Ailurus fulgens)	<div><div></div></div>	97.2%
P68236	Hemoglobin subunit alpha (Ursus thibetanus)	<div><div></div></div>	97.2%
P68235	Hemoglobin subunit alpha (Ursus maritimus)	<div><div></div></div>	97.2%

Alignments

1 to 25 of 250

Show (25)