

Instructions for accessing the NIH GenBank and EMBL database - January 13, 2010

(Note: These web pages change frequently. Some exploration may be needed to find the desired web pages and tools.)

Nucleic Acids:

Goto <http://nih.gov/>
Click on RESEARCH tab
Click on [Molecular Biology tools and information](#)
Click on **Databases** -for molecular biology
Click on [Entrez - The Life Sciences Search Engine, at NCBI](#)
Click on **Nucleotide:** Core subset of nucleotide sequence records
Select Preview/Index Tab
Select Fields from drop down menu (e.g., Organism)
Type Keywords from journal articles (e.g., pigeon)
Click on "And" button and add more terms
Click on Preview button
Click on "Result" number on far right side of Most Recent Queries results
Click on Result (....., [complete cds](#))

Proteins (search):

Goto <http://nih.gov/>
Click on RESEARCH tab
Click on [Molecular Biology tools and information](#)
Click on **Databases** -for molecular biology
Scroll down to **Proteins** section
Click on Swiss Prot – at [ExpASY.org](#)
Current Web Page: "ExpASY Proteomics Server" <http://us.expasy.org/sprot/sprot-top.html>
Click on "Databases" (right side of the header near the top of the page)
Click on [UniProt Knowledgebase \(Swiss-Prot and TrEMBL\)](#) - Protein knowledgebase
Type Desired Genbank Accession Number into the "Query" box (e.g., M21197)
Make sure the "Search In" box displays: "Protein Knowledgebase (UniProtKB)"
Click on New Swiss Prot Accession number (blue number; e.g., [P00889](#))
Scroll down to "Sequences" section and see the sequence of the protein
Click Menu arrow Under "Tools" box
Select the tool you want (e.g., "Compute pI/MW")
Click on "Go" (just to the right of the tool box)
Click on FT CHAIN fragment (e.g., [28-464](#) ← the entire peptide chain)
Return to Protein Sequence Page
Select Different Tools (e.g., Peptide Cutter)
Click on "Go" (just to the right of the tool box)
Type in Swiss Prot Accession number (if software doesn't automatically do it for you)
Click on "Perform" button (select default: "all available enzymes and chemicals")
Continue Selecting tools and exploring your protein sequence(s)

Proteins (unknown sequences):

Goto <http://nih.gov/>
Click on RESEARCH tab
Click on [Molecular Biology tools and information](#)
Click on **Databases** -for molecular biology
Scroll down to **Proteins** section
Click on Swiss Prot – at [ExpASY.org](#)
Current Web Page: "ExpASY Proteomics Server" <http://us.expasy.org/sprot/sprot-top.html>
Click on "Tools" (right side of the header near the top of the page)
Scroll down to "Pattern and profile searches" section
Click on "ScanProsite"
Type Your unknown sequence into the box on the right under "Motif(s) to scan for:"
Note: check both defaults : UniProtKB/Swiss-Port & including splice variants
Click on "Start the Scan" button at lower left of page

There are many more tools and options on these web pages. Explore them to find the rest of the tools and links to complete the laboratory assignment.

Good luck.