Retrieving Protein Sequences

Protein structure and function

Isozymes and isoforms

Isozyme (isoenzyme): enzymes from different genes but catalyzes the same chemical reaction

Isoforms: any of several different forms of the same protein

(different proteins encoded by the same gene)

Structure

Monomer or polymer (hetero or homo)

Polypeptide size

Function

Catalytic function:

Physiological function: involved metabolism

Retrieving protein sequences

Navigate to NCBI http://www.ncbi.nlm.nih.gov/
Type protein name in the blank box
Click "search"
Click "protein: sequence database"
Display sequence information

<u>Retrieving protein sequences</u>

Navigate to Expasy (http://kr.expasy.org/)

Type in protein name in the Search Window
Change query to "UniProtKB"
Select human protein
Write down Primary Accession Number
Check important information on the protein
       FASTA format
       >definition line
       SEQUENCEINCAPITAL
       save in text file
       use Courier font for easy alignment

Assignment

1. Structure & function
2. Protein sequences (10 organisms) in FASTA format
   from human to genetically divergent eukaryotes