Class Exercise 2 – Understanding PDB

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Hexokinase

1) Overall Search Results Summary
    1. How many results for Mus Musculus can be found in the results?
        a. **18**

    2. How many proteins are in the search results?
        a. **810**

    3. How many of them are produced through “Solution NMR”?
        a. **19**

2) Summary of the Selected Protein Structure
Select “**1HKC**”
1. What is the PDB ID of this protein?
    a. **pdb_00001hkc**

2. What is the name of the protein?
    a. **Recombinant human hexokinase type i complexed with glucose and phosphate**

3. State the Digital Object Identifier of the relevant publication?
    a. **https://doi.org/10.2210/pdb1HKC/pdb**

4. Which organism this protein has been produced?
    a. **Homo sapiens (Human)**

5. What is the length of the protein (amino acid sequence) (Chain A)?
    a. **917**

3) Annotation Tab
1. Find the class of the Chain A of this protein based on Scope Classification
    a. **Alpha and beta proteins (a/b)**

2. Find the fold of the Chain A of this protein based on Scope Classification
    a. **Ribonuclease H-like motif**

4) Experiment Tab

1. What is the experimental method used?
    a. **X-ray diffraction**

2. What is the highest and lowest overall resolution of this structure?
    a. **High : 2.8 | Low :99**

5) Genome Tab

1. Which Chromosome gene of this protein is located?
    a. **Homo sapiens isolate CHM13 chromosome 10**

2. Find the nucleotide Length of the sequence.
    a. **70138041 – 70250410 = 112369**

3. Find the genome assembly of the protein (location).
    a. **T2T-CHM13v2.0**