LEK_9_Structure

April 7, 2022

1 Structural Bioinformatics

1.1 Protein Structures

Name three structural planes of protein structures.

1. Primary structure (amino acid sequence)
2. Secondary structure (α-helix, β-sheet, turn)
3. Tertiary structure (three-dimentional structure formed by assembly of secondary structure)

1.2 PyMol

Give an example for the syntax in PyMol for creating the three selections below:

1. Select Chain A of your structure.

select ChA, chain A

2. Select all Amino Acids in Helices in your structure.

select Helices, ss h

3. Select all prolines in your structure

select PRO, resn Pro

1.3 Modelling

Name the three methods you could use to generate protein structure models in silico.

1. Homology or comparative modelling
2. Threding (fold recognition) modelling
3. *Ab initio* (*de novo*, new folds) modelling (*ab initio*: "from the beginning")