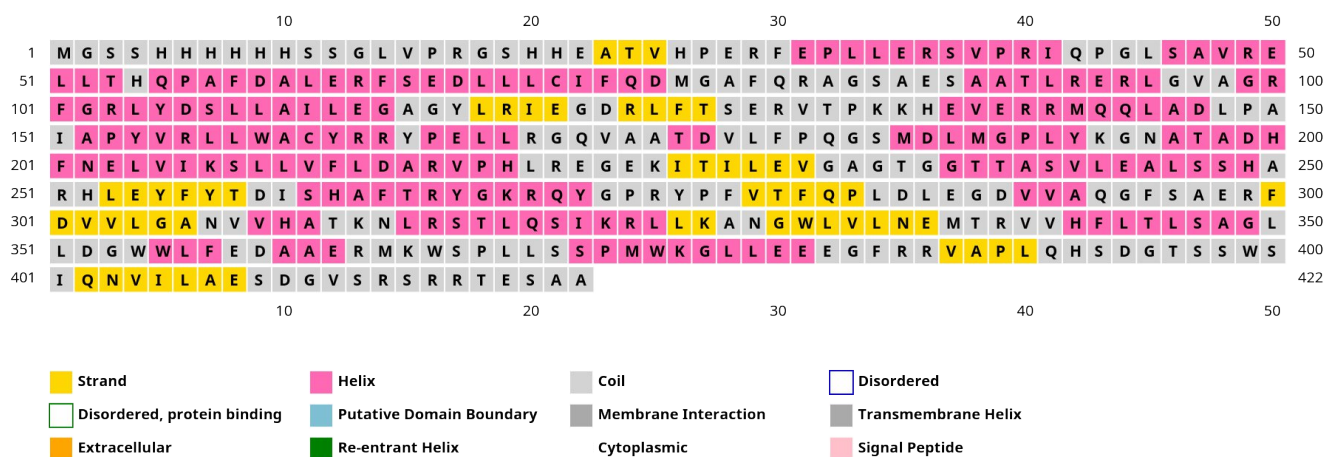


BI Assignment

Name: Rahul Katinni

Roll: S20200010091

Protein Secondary Structure:



As there are no turns present in the protein the propensity value is not being calculated for turns.

Propensity of N in alpha helix $P(N)$:

N in protein : 7

N in alpha helix: 1

Residues in protein : 422

Residues in alpha helix: 190

$$P(N) = (1/7)/(190/422) = 0.317$$

Propensity of E in beta sheets P(E):

E in protein : 31

E in beta sheets: 5

Residues in protein : 422

Residues in beta sheets: 55

$$P(N) = (5/31)/(55/422) = 1.237$$

Propensity of P in coils P(P):

P in protein : 19

P in coils: 9

Residues in protein : 422

Residues in coils : 177

$$P(N) = (9/19)/(177/422) = 1.13$$

The Propensity of

- N in alpha helix is : 0.317
- E in beta sheets is : 1.237
- P in coils is : 1.13

BI-Assign

K. Rahul

S20200010091

Asparagine (N) in α Helix:

$$N \text{ in protein} = 7$$

$$\text{residues in protein} = 422$$

$$N \text{ in } \alpha\text{-Helix} = 1$$

$$\text{residues in } \alpha\text{-helix} = 190$$

$$P_{\alpha}(N) = \frac{1/7}{190/422} = 0.317$$

Glutamic Acid (E) in β sheets:

$$E \text{ in protein} = 31$$

$$\text{residues in proteins} = 422$$

$$E \text{ in } \beta \text{ sheets} = 5$$

$$\text{residues in } \beta\text{-sheets} = 55$$

$$P_{\beta}(E) = \frac{5/31}{55/422} = 1.237$$

Proline (P) in coils:

$$P \text{ in protein} = 19$$

$$\text{residues in proteins} = 422$$

$$P \text{ in coils} = 9$$

$$\text{residues in coils} = 177$$

$$P_{\text{coils}}(P) = \frac{9/19}{177/422} = 1.13$$