

Practical 4

26 Feb 2024

Questions

- Write a program to construct a dot plot for the alignment of human and chicken hemoglobin β chain. Identify the segments, which are same in both sequences.
 - Construct the dot plot manually for the residues 1-20 and verify with the plot obtained using program
- Calculate the score for the following alignments **using code**:

AATCTATA
AAG--ATA

Assume that the match score is 1, mismatch score is 0, origination penalty is -2, and length penalty is -1.

- Verify the Q2 **manually**
- Using the Needleman and Wunsch dynamic programming method, construct the partial alignment score table and align the following two sequences (**using code**):

ACAGTCGAACG and ACCGTCCG

use the scoring parameters: match score: +2; mismatch score: -1 and gap penalty: -2

- Verify Q4 **manually**
- Using the Smith-Waterman method, construct the partial alignment scoring table and align the following two sequences (**using code**):

ACGTATCGCGTATA and GATGCGTATCG

scoring parameters: match score: +2; mismatch score: -1 and gap penalty: -2

Deadline: 10 Mar 2024