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CSC 306

Mid-term Report of X73525 and salDNA Files

My team-mates and I set the numReps of longestORFNoncoding(DNA, numReps) to 1500 because that is what the midterm guidelines said to set it at. This gave us a minLen value between 300-400. We noticed that this may not be the best minLen value to find genes with because we found that genes are typically 700-800 amino acids long. We were unsure of what value to use for numReps to obtain a minLen value of 700-800. By having a minLen of 300-400, our geneFinder function gave us 9 genes whereas others only got 5.

**X73525**

**BLAST Results:**

1. 100% match with hypothetical protein L247\_22215 (Salmonella enterica subsp. enterica serovar Worthington)

This sequence did not match with an actual gene. This could be due to the gene having a short sequence compared to the other genes found.

1. 28% match with hypothetical protein ALP75\_200174 (Pseudomonas syringae pv. Actinidiae)

This sequence did not match with an actual gene. This could be due to the gene having a short sequence compared to the other genes found.

1. 100% match with Flil/YscN family ATPase (Salmonella enterica serovar Montevideo)
2. 99.32% match with SPI-1 type III secretion system protein SpaM (Salmonella enterica serovar Typhimurium)
3. 99.70% match with SPI-1 type III secretion system protein SpaN (Salmonella enterica serovar Typhimurium)
4. 98.84% match with uncharacterized protein (Salmonella enterica)

This gene found was much shorter than the others which could be the reason for the BLAST result.

1. 99.67% match with SPI-1 type III secretion system protein SpaO (Salmonella enterica serovar Alachua)
2. 100% match with SPI-1 type III secretion system export apparatus protein SpaP (Salmonella enterica Agona)
3. 99.62% match with SPI-1 type III secretion system export apparatus protein SpaR (Salmonella enterica Waycross)
4. 99.72% match with SPI-1 type III secretion system export apparatus protein SpaS (Salmonella enterica Muenchen)

**salDNA**

**BLAST Results:**

1. 100% match with SPI-1 type III secretion system effector GTPase-activating protein SptP (Salmonella enterica)

**Interesting Facts:**

* The first complete genome sequence of Salmonella enterica subspecies enterica Serovar Worthington

was isolated from pistachios in the United States.

* The first outbreak of food poisoning cause by Salmonella Alachua happened in Brazil from 2000-2013.