

Metabolism and Bioinformatics Supplemental Problems

Who am I?

I use a "hook" to grab onto my prey, bacteria. Then I pull myself through the broken bacterial membrane and eat it from the inside out.

One of my amino acid sequences for metabolism is:

VNSFAGDIAKGGKLFKKVNCALCHNADGMGKAKNGKIALLLKGPQIAGLDAAAYIVEQVT
AIQGKKRRTKNTSMMMAKVKKLKP AEIKDIAAYVNSLSKTRFVGMLQKK

Use BLAST, the above sequence and information provided in lab to obtain data to answer the following:

1. What does the first "V" stand for in the sequence? (1 pt)
2. What protein does this amino acid sequence code for? (1 pt)
3. What species does this amino acid sequence belong to? (1 pt)
4. Do you think this species needs to transfer electrons for energy? Yes or No (1 pt)
5. For fun, and an extra point, use your first and last name as an amino acid sequence. Enter it into BLAST. Is there a species that matches your name? If so, what is it?

For example, if I enter "ANGELAGEE" into BLAST for proteins I get that I am *Streptomyces ochraceiscleroticus*, a newly discovered bacteria!

TOOLKIT CREDITS:

Developed by Angela Gee, (Los Angeles Trade Tech Community College, CA) and Marissa Pantastico-Caldas, Los Angeles Trade Tech Community College (CA) with data and guidance by John Kirkpatrick (University of Rhode Island, RI) with and support by the rest of the C-DEBI Collaborative Toolkit Team.

WEBSITE:

http://www.coexploration.org/C-DEBI/toolkits_biology.html