You and your oral microflora BLAST assignment

Follow the instructions in your Oral microflora handout to complete this assignment.

Please provide the following information about your sequence:

1. The name of your sequence (e.g. SC): _____
2. The amount of DNA you used when you set up your sequencing reaction: _____ (i.e. which recipe did you follow?)
3. The length of the sequence you pasted into the BLAST algorithm: _____
4. Identify the top hit for your sequence using the BLAST algorithm (note, if your top hit is an "uncultured bacterium, indicate that here, and refer to the "Uncultured bacterium instructions" below to answer question 5).
    a. Accession number: _____
    b. Description: _____
    c. E-value:_____
    d. Query coverage: _____
    e. Max identity: _____

    The following information can be found by clicking on the hyperlink for your top hit's "Max Score", which will take you to the actual alignment of your "query" sequence to the "subject" sequence that it matched in the database.
    f. Identities: _____
    g. Gaps: _____
    h. Were all of the nucleotides that you submitted used to find a match in the database? In other words, if your query sequence was 245 nucleotides, were all 245 nucleotides accounted for in the identities equation, or for example, were only 150 nucleotides used? _____
    i. If only a portion of your query sequence was used, what could that mean about the strength of your match? _____
    _____
5. Now that you know the identity of one of the organisms in your mouth, you need to find a little bit more information about this organism. Use the websites listed below to help

you find information about your newly identified oral microflora. (NOTE: if your top hits are "uncultured bacterium", see number 6 below)

a. Is it gram positive or gram negative? _____

b. Is it typically found in the human mouth? (If not, please indicate where it is normally found, and why you think you might have found it in your sample).

_____

c. Can it be found elsewhere on the human body? If so, where else can it be found?

_____

d. Find one other interesting fact about this organism, and indicate where you found this information.

_____

_____

_____

_____

6. **"Uncultured bacterium" instructions.** If your top hit is an uncultured bacterium, repeat your BLAST search with the following changes: In the "Choose Search Set" section, be sure that you have checked the box marked "Uncultured/environmental sample sequences" next to "Exclude". This will exclude unknown species from the database search and should provide you with the information to answer question 5 above.

Some useful websites for finding information about microorganisms.

NCBI PubMed, a resource for scientific literature (experimental research and scientific reviews): http://www.ncbi.nlm.nih.gov/pubmed/

NCBI Bookshelf, a resource of scientific textbooks: http://www.ncbi.nlm.nih.gov/books

Microbeworld, a website sponsored by the American Society for Microbiology (www.asm.org) to enhance the understanding of microbiology, and to provide access to the latest in microbial research: http://www.microbeworld.org/

Centers for Disease Control and Prevention, a division of the federal Department of Health and Human Services: www.cdc.gov