Bioinformatics (Homework 2)

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Part 1:

1. ((bacteria[MeSH Major Topic]) AND Pace[Author]) AND Lane[Author].
2. ATCC 35903, ATCC 33463, ATCC 35904, ATCC 35905, ATCC 29047.
3. (progesterone[MeSH Terms]) AND ("san diego state university").
4. 28503372, and 29224074
5. Potential Effect of Statins on Mycobacterium tuberculosis Infection.

Part 2:

1. AH005568.2 Homo sapiens dUTPase (DUT) gene, complete cds, alternatively spliced.
2. Human Estrogen Receptor
    a. RNA splicing is a process in molecular biology in which a new pre-mRNA is transformed into a mature mRNA.
    b. AATAAA or ATTAAA
    c. NM_000125.2 Homo sapiens estrogen receptor 1 (ESR1), mRNA.
    d. It is a tail added to an RNA at the end of transcription. It protects the molecule from enzymatic degradation and aids in transcription termination, export and translation.

Part 3:

1. Sulfolobus solfataricus P2
    a. Cernarchaeota.
    b. Sulphur.
    c. 85°C
    d. pH 2 to 4.5.
    e. 2,944 proteins.
    f. WP_009991275.1 30S ribosomal protein S3 [Sulfolobus solfataricus]
2. CFTR Gene
    a. NC_000007.14
    b. It plays an important role in regulating an ion channel for Chloride ions, water, and other fluids across the cell membrane. It helps regulate the pH and ion content of the airway surface fluid layer and so helps protect against pathogens.
    c. It is expressed in the bronchial epithelium in the respiratory airway, and in the oviduct in the female reproductive tract. It is also detected in the pancreatic intercalated ducts, on epithelial cells in the intralobular ducts in sublingual salivary glands, on membrane of crypt cells in the intestines, and on the reabsorptive duct in sweat glands.