Lab sheet#2

Nucleotide database, Gene Databases and Gene/phenotype interaction database (OMIM)

Objectives:

- Searching for sequences in nucleotide database.
- To be familiar with Gene database.
- Searching for human genes, genetic disorders and phenotypes using OMIM.

Use Nucleotide database to answer the following questions:

1. Retrieve the mRNA transcript sequence for the human **Factor IX** gene**.**
2. How many base pair does it contain?
3. What are the main functions of this gene?
4. What is the accession number for the human **Factor IX** mRNA sequence?
5. How many times was the record updated?
6. What is the location of the CDS?
7. Get the amino acid sequence.
8. Display the FASTA format and graphical view of the sequence.
9. Search for **Factor IX** (Factor 9) mRNA in **Bos taurus** using RefSeq database.
10. Using the GeneBank accession number "**NM_000133**", Get the mRNA transcript sequence of the **Factor IX gene**.

Use Gene and OMIM databases to answer the following questions:

1. What is the official gene symbol of human **telomeric repeat binding factor 2** gene?
2. What is the **type of the gene**?
3. What is the **function** of the gene?
4. what **other names** used for this gene?
5. What is the **genomic location** of the gene?
6. Get the **FASTA format** of the gene and mRNA sequence.
7. Find a **citation** focusing on the human TRF2
8. Using the **OMIM Website**, can you find any **disease** associated with **ATM**?
9. Give a brief **description** of the disease.
10. Using the **OMIM Website**, can you find any records associated with ataxia telangiectasia? Make sure your strategy does not result in a number greater than 300 hits.
11. What is the other name for this syndrome?
12. Using the **OMIM Website**, find the gene that associated with **fanconi-bickel syndrome**.
13. What is the **function** of the gene?