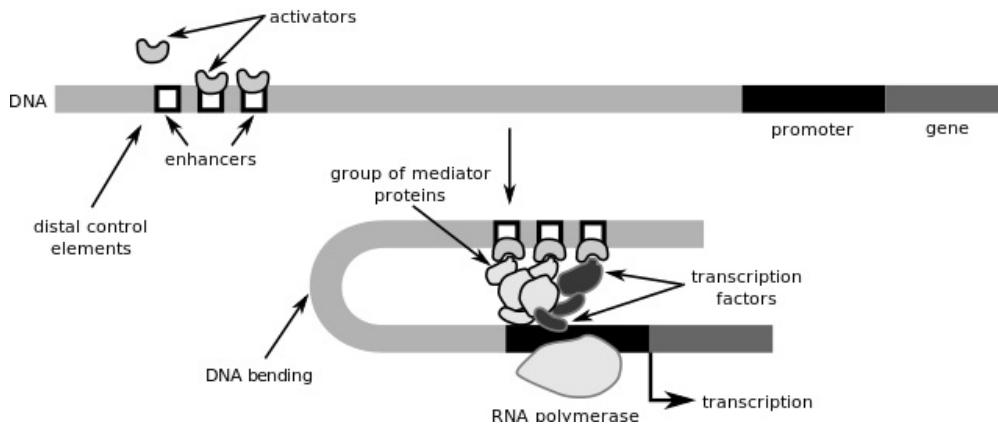


Scenario II: Gene Regulation

The Story



We know that the OPN1LW gene is associated with colorblindness. While this gene is present in all humans, colorblindness affects only a few. What is different about the gene in those affected by colorblindness? Perhaps the answer lies in the level of expression of the OPN1LW gene. A gene's expression is regulated by various elements in the human body. Let's see if we can bioinformatically identify the regulatory elements of our gene of interest.

Molecular Biology concepts

[StStructures and motifs](#)

Programming concepts

[Regular expressions](#)

Problem sets

1. Scan the genome upstream of the sequence looking for sequences that match criteria for regulatory sequence.
2. Find motifs in our sequence and compare them to motif databases.

Files required:

[OPN1LW_upstream20000.fasta](#)

Additional Resources