

# Molecular size scales in biology

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Submit this assignment as an electronic file (preferably PDF).

## 1 Measuring

Get the coordinates for the following molecules:

1. ATP
  2. Phosphatidylcholine
  3. Lac repressor complex with DNA
  4. Hemoglobin
  5. Myoglobin
  6. Green fluorescent protein (GFP)
  7. RNA polymerase
- Download a program that allows structure viewing such as RasMol (U. Massachusetts).
  - Use the measurement tools in these programs to measure the maximal length of these molecules (maximal diameters). Tabulate your results with molecule and dimensions in nm. Include a snapshot of the molecules as you plot them (1 per molecule) with the distance measure included in the snapshot.
  - Plot a graph of longest-dimension of the molecule as a function of number of atoms. Comment on the graph.

Data for the PDB files is [here](#). This PDB file can also be opened as a text file.

**Tutorial** on using RasMol [here](#)