

3.3: Cell Fractionation and Centrifugation

Fractionation of samples typically starts with centrifugation. Using a centrifuge, one can remove cell debris, and fractionate organelles, and cytoplasm. For example, nuclei, being relatively large, can be spun down at fairly low speeds. Once nuclei have been sedimented, the remaining solution, or supernatant, can be centrifuged at higher speeds to obtain the smaller organelles, like mitochondria. Each of these fractions will contain a subset of the molecules in the cell.

Cells are disrupted in a homogenizer and the resulting mixture, called the homogenate, is centrifuged in a step-by-step fashion of increasing centrifugal force. The denser material will form a pellet at lower centrifugal force than will the less-dense material. The isolated fractions can be used for further purification.

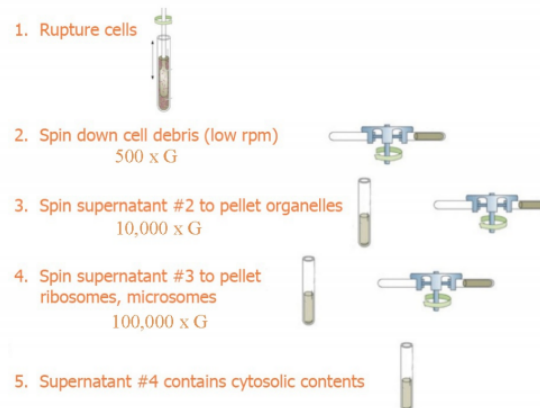


Figure 3.3.1: Fractionation of samples typically starts with centrifugation. Using a centrifuge, one can remove cell debris, and fractionate organelles, and cytoplasm.

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