

2.3: Centrifugation

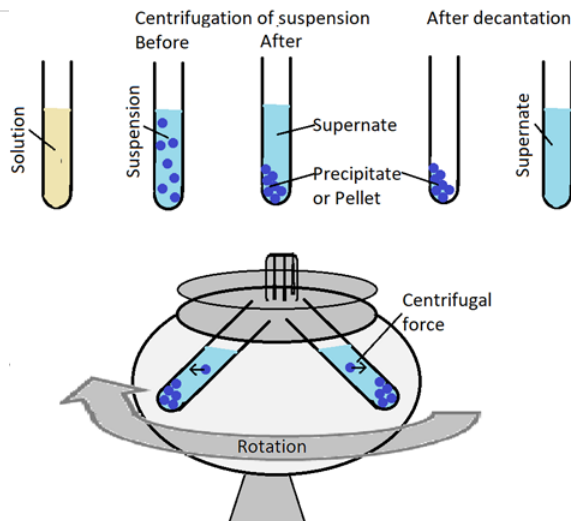


Figure 2.3.1: Illustration of separation of supernatant from the precipitate by centrifugation process.

The solid product, i.e., the precipitate is forced to form sediment or pellet at the bottom of the test tube under the action of centrifugal force as illustrated in Figure 2.3.1. A laboratory centrifuge machine contains a fast router with compartments to house the test tube as shown in Figure 2.3.2. The test tube compartments are arranged in a circle.

- Always place two test tubes across the diagonal, one containing the solution of interest and the other similar test tube containing an equal volume of water to counterbalance the weight.

Three similar test tubes with the same volume of liquid can also be placed at the corner of a triangle around the axis of the router to balance the weight. Close the lid and start the machine. If the weight is not balanced, the centrifuge machine will vibrate, shake, and may start moving or fly off causing damage when switched on.

Caution

- Always keep eye on the centrifuge when it starts -if there is any abnormal sound, shaking, or vibration, immediately switch off or unplug the centrifuge machine. When the centrifuge machine is unplugged or switched off, the router keeps running for a while before coming to stop. Never open the lid until the router comes to a complete stop.



Figure 2.3.2: A laboratory centrifuge machine with the lid open (left), router compartment showing test tubes placed across to balance the weight (middle), centrifuge ready to start with a sample loaded, and the lid closed.

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