

UNIT 3

UNDERSTANDING TERMINOLOGY

1. MICROPIPETTES:

Standard laboratory equipment used to measure and transfer small volumes of liquids. You will use them throughout this course and in advanced courses in the future. It is essential that you master their use if you are to be successful in your experiments.

2. SPECTROPHOTOMETER:

A spectrophotometer is a device used to measure light intensity. A spectrophotometer can measure either absorbance or transmittance of light. A small beam of light is emitted from the spectrophotometer, which goes through the sample in a small glass container called a cuvette. The spectrophotometer measures how much light is absorbed by the sample or how much light passes through it, which is called transmittance. In this activity, you will be using the spectrophotometer to measure the amount of light that is absorbed when various dilutions of food coloring are used. The light goes through a slit that sets the wavelength, then the small beam of light with a specific wavelength passes through the sample in a cuvette. Some of the light is absorbed and some of the light passes through. The amount of light that passes through is detected and a value is given by the spectrophotometer.

3. PRECIPITATION:

Converting desired proteins from a dissolved phase to a solid phase for separation.

4. FRACTIONATION:

The process of separating, purifying, and recovering specific “fractions” or proteins from human blood plasma.

5. CENTRIFUGATION:

Separating solids from liquids, based on molecular weight and using centrifugal force.

6. FILTRATION:

Removing precipitated proteins not removed during centrifugation to ensure complete separation.

7. CHROMATOGRAPHY:

A process in which a chemical mixture carried by a liquid or gas is separated into components as a result of differential distribution of the solutes as they flow around or over a stationary liquid or a solid phase.

8. LYOPHILIZATION:

A dehydration process used to preserve a perishable product. It is also used to make materials more convenient for transport. The fundamental principle in freeze-drying is sublimation: the shift from a solid directly into a gas. Water will sublime from a solid to a gas when the molecules have enough energy to break free but the conditions aren't right for a liquid to form. Biological materials are often dried to stabilize them for storage or distribution. Lyophilization, also called freeze-drying, is one method of drying biological materials that minimizes damage to their internal structure.