



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Coimbatore – 35

DEPARTMENT OF BIOMEDICAL ENGINEERING



De-proteinization of blood is a process that involves the removal or separation of proteins from blood samples, typically for analytical or diagnostic purposes in clinical chemistry. This is often necessary when the analysis of specific blood components requires a protein-free or protein-reduced environment.

Centrifugation:

Centrifugation is a widely used technique to separate blood components based on their density. High-speed centrifugation can be employed to separate plasma or serum from cellular components, effectively removing a significant portion of proteins.

Ultrafiltration:

Ultrafiltration involves passing a blood sample through a semipermeable membrane that allows water and small molecules to pass through while retaining larger proteins. This method is effective for reducing the protein content in a sample.

Protein Precipitation:

Chemical agents can be added to blood samples to induce the precipitation of proteins. Common precipitating agents include organic solvents such as acetone or trichloroacetic acid. After precipitation, the mixture is centrifuged, and the supernatant (protein-free or reduced) is collected.

Dialysis:

Dialysis involves placing a blood sample in a semipermeable membrane or tubing that allows the exchange of small molecules (including ions and water) but retains larger proteins. This process is slower than other methods but can effectively reduce protein concentrations.



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Filtration:

Filtration techniques use membranes with specific pore sizes to selectively remove proteins from a blood sample while allowing smaller molecules to pass through. Filtration can be performed using various materials, including cellulose acetate or nylon membranes.

Immunoprecipitation:

Immunoprecipitation involves using antibodies to selectively remove specific proteins from a blood sample. This technique is highly specific and can target individual proteins of interest.