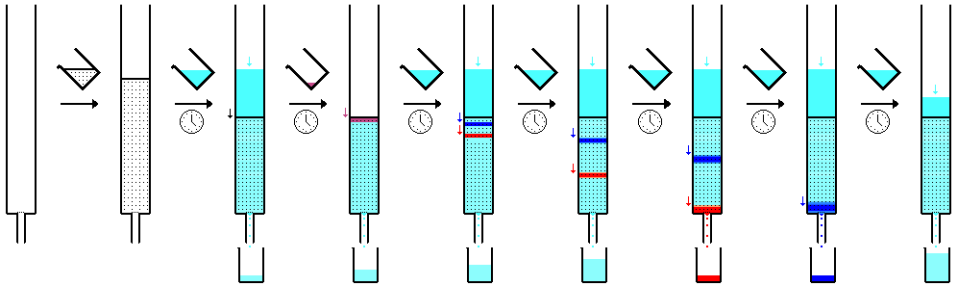
CONCEPT: ISOLATION AND PURFICATION OF PROTEINS

- There are a variety of techniques that scientists use to obtain _____ for research.
  - □ **Protein purification** allows for isolation of a single protein
    - Protein is grown in bacterial cultures and isolated
    - *Fractionalization* separates different proteins into individual fractions based on properties (size, charge)
    - Proteins can be tagged to give them a certain property that makes them easier to purify
  - □ **Chromatography** allows for separation of proteins via certain properties
    - *Column chromatography* separates mixture of proteins by running them through a porus mixture (Size)
    - *Affinity chromatography* sorts proteins based on interactions with other proteins
    - *Gel filtration* chromatography separates proteins based on size
  - □ **Gel electrophoresis** is used to separate proteins based on a charge to mass ratio
  - □ Once a purified protein is obtained, the proteins can be _____ in isolation

EXAMPLE: Column Chromatography



PRACTICE:

1. Which of the following methods allow for the isolation of a single protein?
    a. Protein purification
    b. Affinity chromatography
    c. Gel Electrophoresis
    d. Column chromatography

2. Which of the following methods separates proteins by a charge to mass ratio?
    a. Protein purification
    b. Affinity chromatography
    c. Gel Electrophoresis
    d. Column chromatography