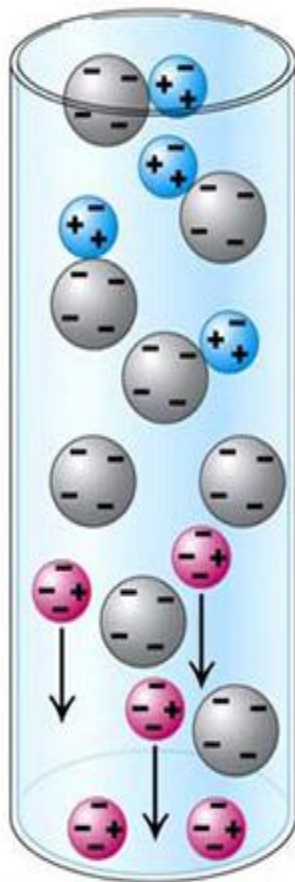
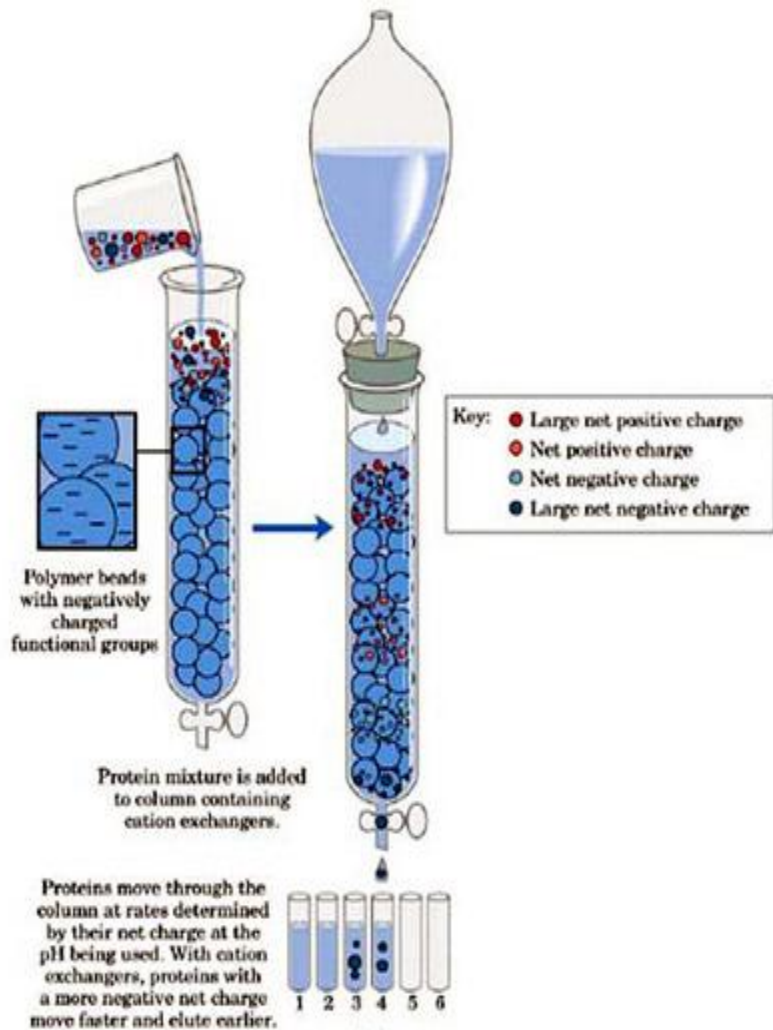


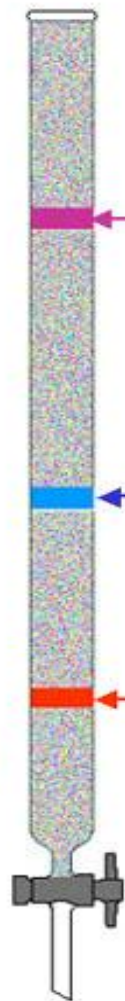
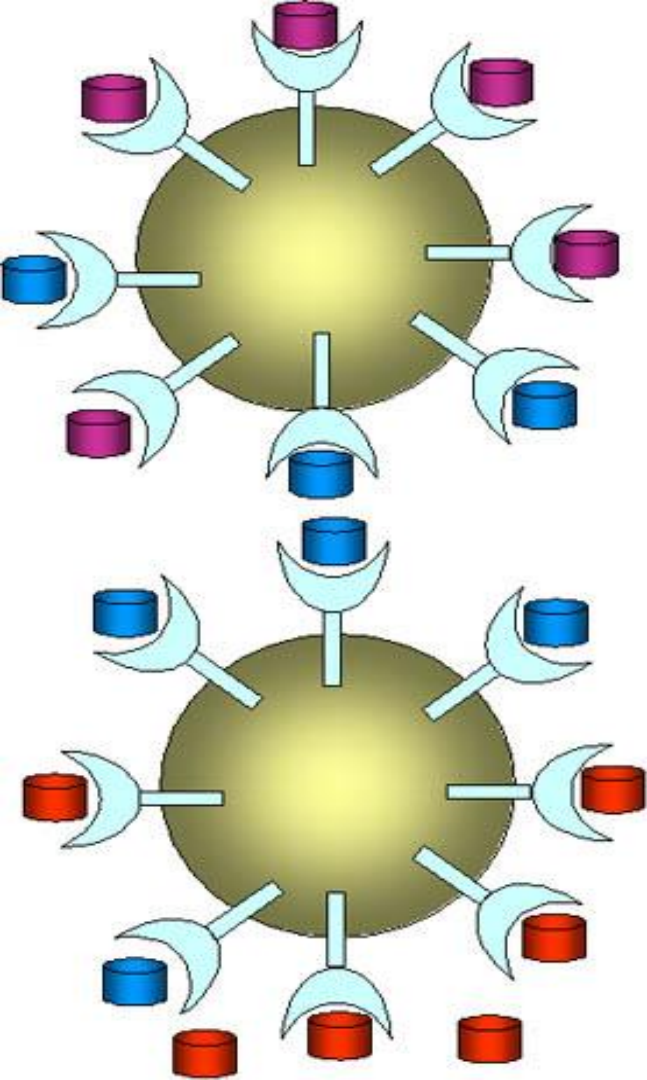
Introduction

- “Ion exchange chromatography may be defined as the reversible exchange of ions in the solution with ions electrostatically bound to some sort of insoluble matrix or a stationary phase.”
- This technique is extremely useful in the separation of charge compounds like proteins differing by only one charged amino acid.
- In ion exchange chromatography technique one can choose whether to bind the substance of interest and allow the contamination to pass through the column and vice versa.
- This technique has been developing since 19th century which was firstly used for purifying the drinking water.
- Ion exchange chromatography is a distinct principle of chromatography performed in the column.



Positively charged protein binds to negatively charged bead

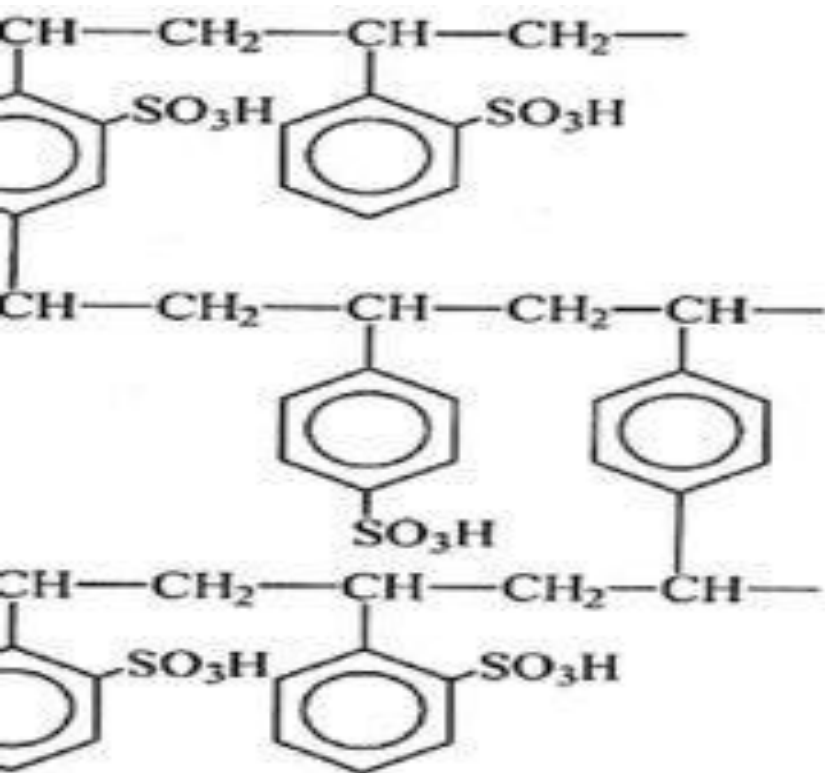
Negatively charged protein flows through



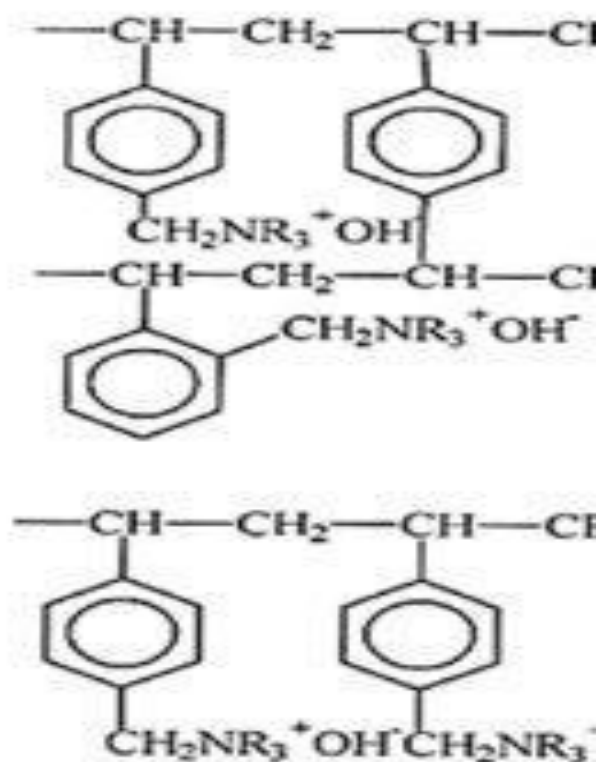
more highly charged molecules are more tightly bound to the resin, and so travel slowly and are eluted later

moderately charged molecules equilibrating between the resin and the moving buffer more readily

Less charged molecules bind less strongly to the resin, equilibrate with the moving buffer more readily, and so travel rapidly and are eluted sooner

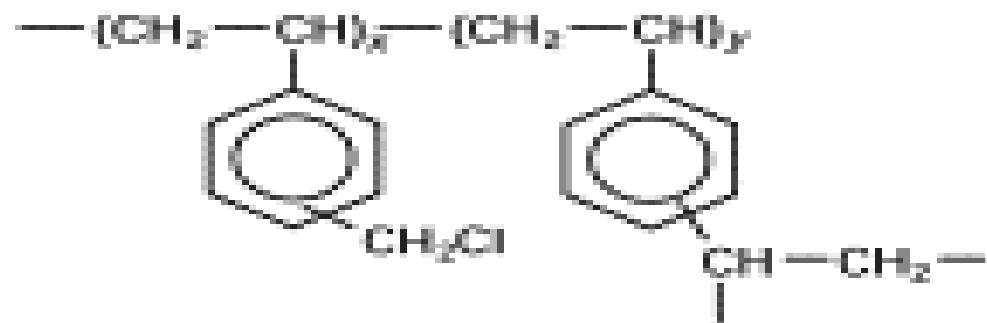


T-DVB copolymer
(strong acid cation exchange resin)



Quaternary ammoniated S
(strong base anion exchange resin)
R = CH₃ is known as Type I

(A)



(B)

