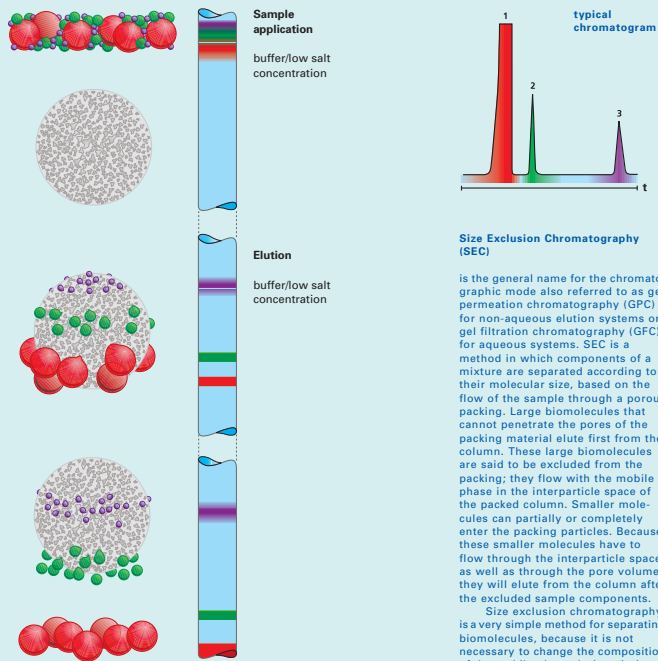


General Principles of Chromatography

Size Exclusion Chromatography

Toyopearl® Resins for SEC

Toyopearl HW 40
Toyopearl HW 50
Toyopearl HW 55
Toyopearl HW 65
Toyopearl HW 75



Adsorption Chromatography

Toyopearl® Resins for HIC

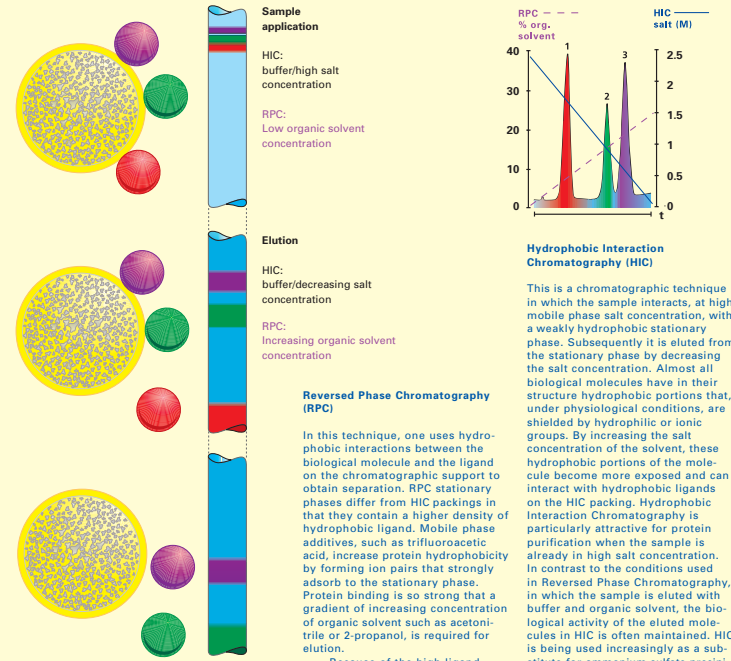
Toyopearl Hexyl-650
Toyopearl Butyl-650
Toyopearl Phenyl-650
Toyopearl Ether-650

TSK-GEL® 5-PW Bulk Resins for HIC

TSK-GEL® Phenyl-5PW
TSK-GEL® Ether-5PW

Amberchrom Resins for RPC

Amberchrom CG-71
Amberchrom CG-161
Amberchrom CG-300
Amberchrom CG-1000



Ion Exchange Chromatography

Toyopearl® Resins for IEC

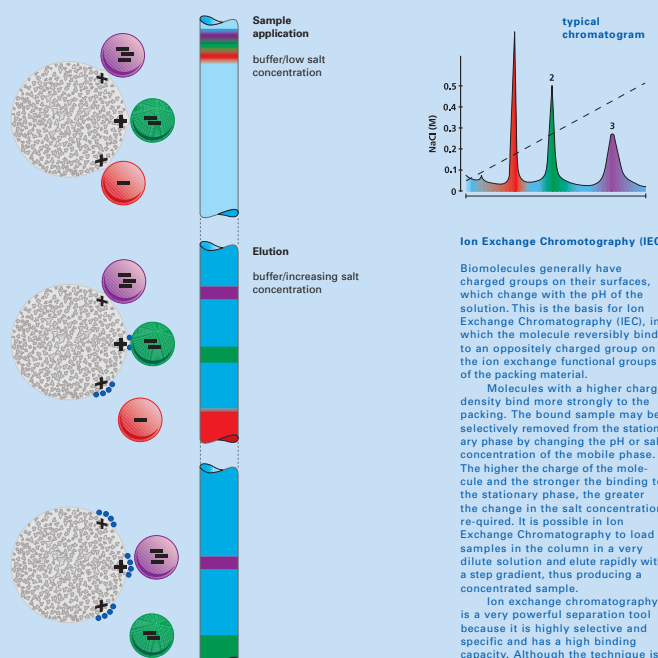
Anion Exchange Resins
Toyopearl DEAE-650
Toyopearl Super Q-650
Toyopearl QAE-550

Cation Exchange Resins
Toyopearl CM-650
Toyopearl SP-650
Toyopearl SP-550
Toyopearl MegaCap

TSK-GEL® 5PW Bulk Resins for IEC

Anion Exchange Resins
TSK-GEL® SuperQ-5PW
TSK-GEL® DEAE-5PW

Cation Exchange Resins
TSK-GEL® SP-5PW

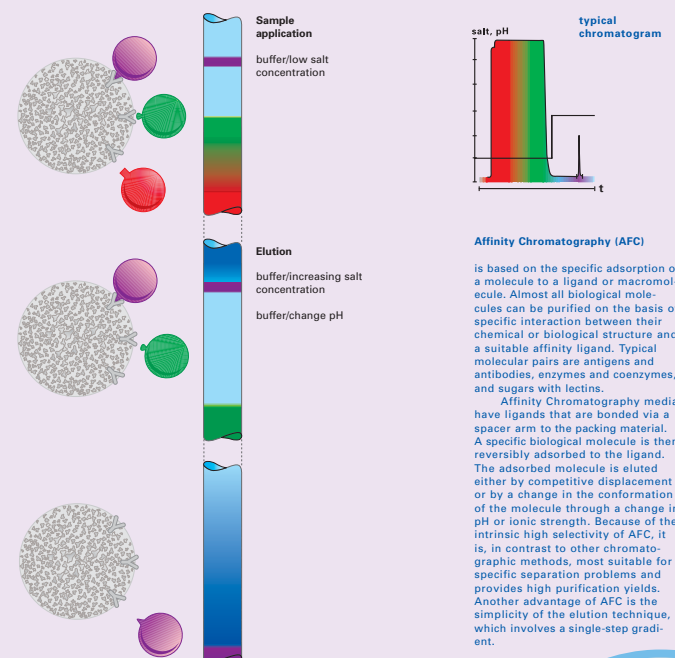


Affinity Chromatography

Toyopearl® Resins for AFC

Toyopearl® Reactive Resins
Toyopearl AF-Amino-650
Toyopearl AF-Carboxy-650
Toyopearl AF-Epoxy-650
Toyopearl AF-Formyl-650
Toyopearl AF-Tresyl-650

Toyopearl® Resins Ready to Use with Group Specific Ligands
Toyopearl AF-Blue-HC650
Toyopearl AF-Chelate-650
Toyopearl AF-Heparin-650
Toyopearl AF-Red-650



Bioseparation
Means purification of molecules retaining the biological function.

Depending on the characteristics of the target biomolecules, different chromatographic methods can be considered for purification. In most cases, it is necessary to use two or more chromatographic methods to purify a molecule to the desired purity.

When choosing the chromatographic separation mode, one must consider the sample solvent as well as the characteristics of the biomolecule. Since most biological molecules are stable only under certain conditions, they require chromatographic materials that don't denature the biomolecule during separation or purification steps.

Hence, the separation media or packing should be biocompatible, the material should allow for a wide range of chromatographic conditions, and should allow the separation to take place in a relatively short time.

The analysis, isolation, and purification of biomolecules can be accomplished by a number of chromatographic modes. Each mode is based on specific physical, chemical, or biological interactions between the sample biomolecules and the packing material.

The various modes of chromatography involve separations that are based on size, charge, hydrophobicity, function or specific content of the biomolecules. The general principles of the most commonly used modes are outlined here.

Explanations to these Products

TOSOH BIOSCIENCE offers a comprehensive line of media and pre-packed columns for all common modes of liquid chromatography including ion-exchange, hydrophobic-interaction, reversed-phase, size-exclusion and affinity.

TSK-GEL® is available as bulk polymeric resin or in silica or polymeric-based prepacked columns.

Toyopearl® chromatography resins are based on a semi-rigid, hydrophilic, macroporous backbone and are stable over the pH 2-13 range.