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**Preparation of high performance membrane for biomolecules separation**  
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#### **Abstract**

The most important advantages of the affinity and ionexchange membrane chromatography are the high volumetric throughput that results in extremely short process times. A chitosan glutamate/cellulose composite membrane is reported here, providing a large liquid flow rate through the membrane and good mechanical properties. This membrane was prepared by coating chitosan glutamate to cellulosic filter paper in presence and absence of glutaraldehyde. Factors affecting membrane formation such as chitosan glutamate/PEG ratio, evaporation time, gelling bath temperature and the concentration of the cross linking agent were studied. The effect of the coating parameters on the physico-chemical properties of the composite membrane, such as pore size of the prepared membrane, the bursting strength, the air permeability and nitrogen percent of the composite membrane were evaluated. The binding and eluting patterns of these composite membranes are tested with bovine serum albumin and water melon urease. In conclusion, this work is the first study used composite membrane containing chitostan as ionexchange material for adsorption and separation of proteins and isoenzymes. © 2010, INSInet Publication.

#### **Author Keywords**

Cellulose; Chitosan; Composite; Glutamate; Membrane; Protein; Urease