

TOYOPEARL GigaCap[®] Q-650M

The newly developed Toyopearl GigaCap[®] Q-650M is a high capacity anion exchange resin especially designed for:

- ◆ The purification of both high and low molecular weight proteins
- ◆ Capture and intermediate purification steps in high throughput process chromatography
- ◆ High binding capacities for a wide range of bio-molecules

Toyopearl is a methacrylic polymer incorporating high mechanical stability. Resins are available as non functionalized resins for SEC or derivatised with surface chemistries for alternative modes of chromatography such as IEC, HIC and AFC.

Toyopearl GigaCap[®] Q-650M highlights

- ◆ Strong anion exchange resin
- ◆ Excellent pressure flow characteristics
- ◆ Superior dynamic binding capacities even for large proteins
- ◆ High protein recoveries

Ion exchange chromatography in downstream processing

Ion exchange chromatography is often used as capture or intermediate step in purification of recombinant proteins. The development of cell lines with high expression levels has triggered the demand for high throughput in downstream processing.

Increasing throughput requires rigid resins with high binding capacities and recoveries at high flow rates.

Toyopearl GigaCap Q-650M is the second resin in a family of ion exchange resins optimized for high throughput process chromatography. It is a strong anion exchange resin, developed to meet the actual needs in high throughput purification of biopharmaceuticals by packed bed chromatography at process scale.

High capacity anion exchange resin

Based on the well proven methacrylic polymer backbone of Toyopearl and TSK-GEL media GigaCap Q-650M combines excellent pressure flow characteristics (Figure 1) with high dynamic binding capacities and high recoveries for a broad range of proteins.

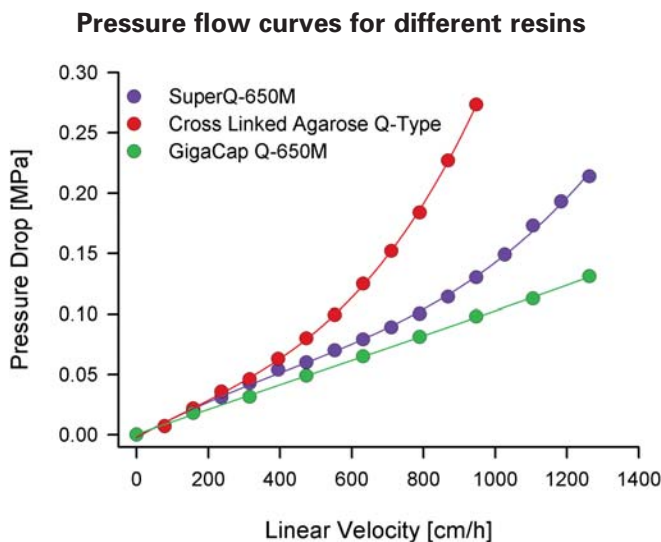


Figure 1: Column: 2.2 cm ID x 20 cm L; Eluent: Water

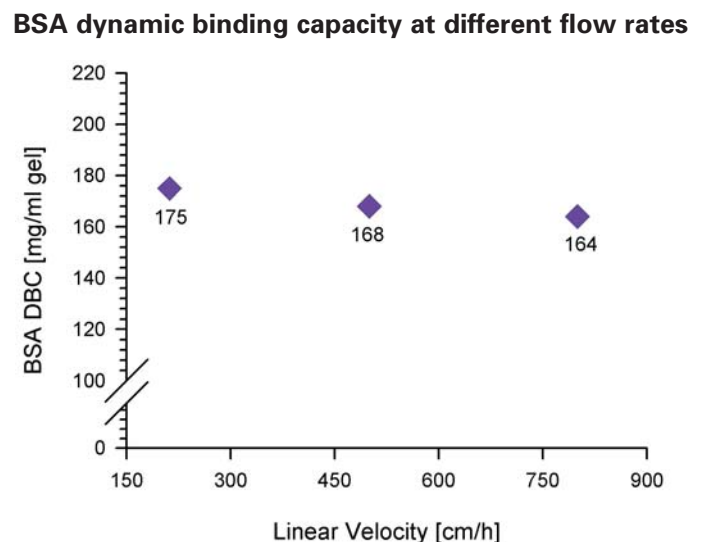


Figure 2: 1 g/L BSA in 50 mmol/L Tris-HCl (pH 8.5)
 DBC measured at 10% breakthrough

Latest surface modification technology was applied to increase the content of functional groups at the particle surface thus reaching dynamic binding capacities up to 175 mg BSA per ml resin at 212 cm/hr and still 164 mg BSA per ml resin at a linear flow of 800 cm/hr (Figure 2).

High dynamic binding capacities can be achieved for much larger proteins as well (Figure 3). Even for a very large protein like thyroglobulin a dynamic binding capacity of 49 mg/mL gel can be achieved. As usual the difference between static (SBC) and dynamic binding capacity (DBC) is increasing with the increase in molecular weight.

Toyopearl GigaCap Q-650M shows excellent pressure flow characteristics and high dynamic binding capacities for a wide range of proteins at high flow rates. This makes it an ideal anion exchange resin for large scale process steps designed for high throughput purification of biomolecules.

Molecular weight dependence of binding capacity

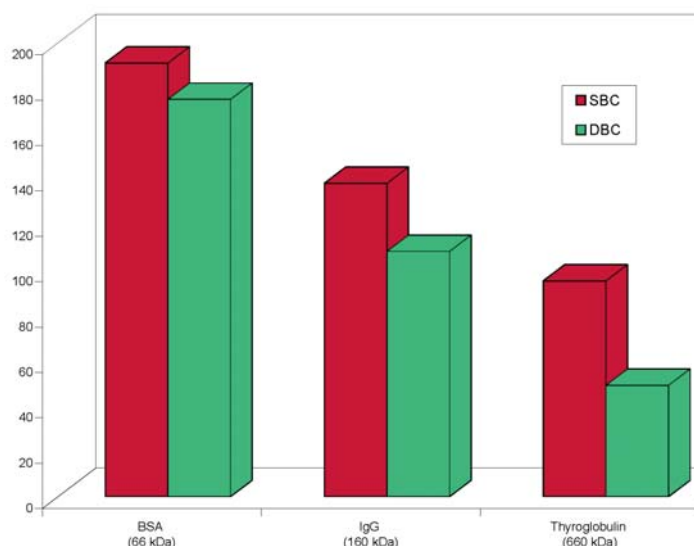


Figure 3: DBC measured at 10% breakthrough, Flow rate: 212 cm/h

For further details of choice and selection of the Toyopearl® resin that best suits your particular process purification needs, please contact us:

Tel. + 49 (0) 711 13257 0

or

info.sep.eu@tosoh.com

or

www.toyopearl.com

Ordering information

Toyopearl GigaCap® Q-650M

Particle Size: 50 - 100 µm
 Ion Exchange Capacity: 0.1 - 0.2 meq/ml resin

Part-No	Description	Resin Volume
21854	Toyopearl GigaCap® Q-650M	100 ml
21855	Toyopearl GigaCap® Q-650M	250 ml
21856	Toyopearl GigaCap® Q-650M	1 l
21857	Toyopearl GigaCap® Q-650M	5 l
21858	Toyopearl GigaCap® Q-650M	50 l
21859	ToyoScreen GigaCap Q-650M	1 ml x 6 ea.
21860	ToyoScreen GigaCap Q-650M	5 ml x 6 ea.