TOYOPEARL GigaCap® Q-650S

High Capacity/High Resolution Anion Exchange Resin for Oligonucleotides and Proteins

Introduction

Tosoh Bioscience has fused high binding capacity with high resolution to bring you TOYOPEARL GigaCap Q-650S anion exchange resin. This resin is ideal for process scale applications from the capture of oligonucleotides to the polishing of monoclonal antibodies. A TOYOPEARL® HW-65 polymeric bead has been chemically modified to provide a greater number of anionic binding sites, resulting in increased binding capacity. This capacity, combined with a 35 μm mean particle size, makes TOYOPEARL GigaCap Q-650S ideal for high resolution applications.

TOYOPEARL GigaCap Q-650S maintains high capacity (dynamic binding capacities approaching 190 g/L for bovine serum albumin) across a range of linear velocities, exhibits excellent pressure-flow characteristics (*Figure 1*) and the 20-50 µm particle size is stable up to 0.3 MPa.

STRUCTURE:

(HW-65)-0-R'-N⁺- $(CH_3)_3$ strong anion exchanger

(Note: R'= proprietary)

Product Attributes

Pore size (mean):	100 nm
Particle size (mean):	35 μm
Pressure rating:	0.3 MPa
Shipping buffer:	20% ethanol
pH stability:	2-13
Shelf life (estimated):	10 years

Good mass transfer kinetics enable the resin to maintain its dynamic binding capacity (DBC) at higher linear velocities (*Figure 2*). This fast uptake ability, when coupled with the narrow elution peak typical of TOYOPEARL GigaCap resins, results in smaller and more concentrated in-process pool volumes, thus reducing the amount of water for injection needed and increasing process throughput downstream.

TOYOPEARL GigaCap Q-650S is base stable for a minimum of 100 Clean in Place (CIP) cycles with 0.5 mol/L NaOH, making multiple uses of the resin possible (*Figure 3*).

Figure 1. Flow rate vs. pressure drop

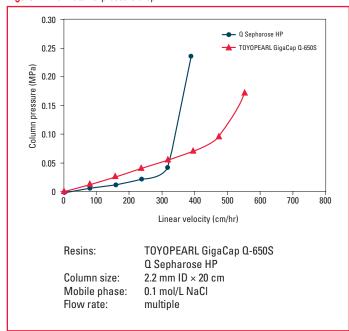


Figure 2. DBC at higher linear velocities

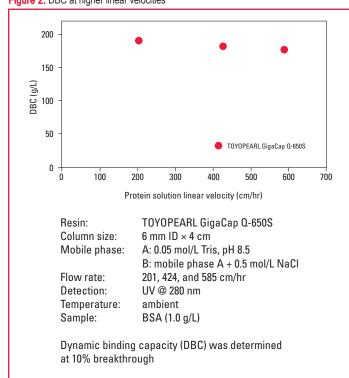
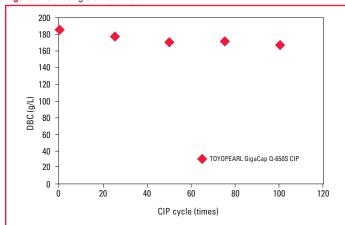


Figure 3. CIP using 0.5 mol/L NaOH



CIP conditions:

Alkaline washing solution: 0.5 mol/L NaOH

Buffer washing solution: 50 mmol/L Tris-HCl, 0.5 mol/L NaCl, pH 8.5

Flow rate: 106 cm/hr (0.5 mL/min)

Alkaline wash volume: 27 CV/cycle
Contact time: 1 hr
Buffer wash volume: 10 CV/cycle

DBC conditions:

Column size: $6 \text{ mm ID} \times 4 \text{ cm}$

Mobile phase: A: 50 mmol/L Tris-HCl, pH 8.5

B: mobile phase A + 1.0 mol/L NaCl

 Flow rate:
 212 cm/hr (1 mL/min)

 Detection:
 UV @ 280 nm

 Sample:
 BSA (1.0 g/L)

Ordering Information

Part#	Description	Resin Volume
22881	TOYOPEARL GigaCap Q-650S, 35 μm	25 mL
22882	TOYOPEARL GigaCap Q-650S, 35 μm	250 mL
22883	TOYOPEARL GigaCap Q-650S, 35 μm	1 L
22884	TOYOPEARL GigaCap Q-650S, 35 μm	5 L
22885	TOYOPEARL GigaCap Q-650S, 35 μm	50 L

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