

# Toyopearl GigaCap® CM-650M

For high capacity cation exchange chromatography of IgG

TOYOPEARL  
PRODUCT OVERVIEW

## Introduction

Toyopearl GigaCap CM-650M is the 2nd cation exchange resin\* in the Toyopearl GigaCap family, optimized for high throughput purification of IgG. Its base bead is Toyopearl HW-65C which has a particle size range of 50-100µm. This particle size range has outstanding pressure flow characteristics for high throughput IgG purification (figure 1).

\*specifically for packed bed use

## Product Highlights

### High Dynamic Binding Capacity Table 1 and Figure 2

- Typical dynamic binding capacity of 100mg/mL resin
- Minimum of 110mg/mL resin static capacity (CofA)

### Unique Selectivity Figure 3

- Weak cation exchange resin with different elution profile than Toyopearl GigaCap S-650M
- Can be useful for both mAb and traditional protein purification
- More tolerant of feedstock conductivities. May show better capacity than Toyopearl GigaCap S-650M in some cases even though absolute capacity is somewhat lower.

### Improved fluid dynamics over agarose materials

- Can be used at backpressures up to 3 bar
- Better kinetics and more theoretical plates with its slightly smaller particle size relative to traditional agarose products

Figure 1. Toyopearl GigaCap CM-650M has good pressure flow properties

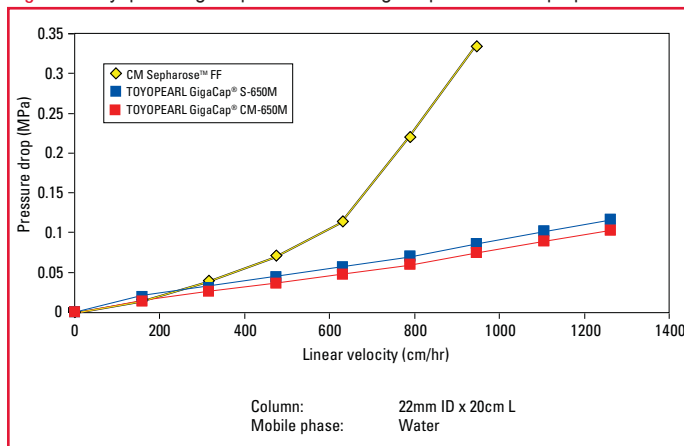


Figure 2. Toyopearl GigaCap CM-650M breakthrough curve

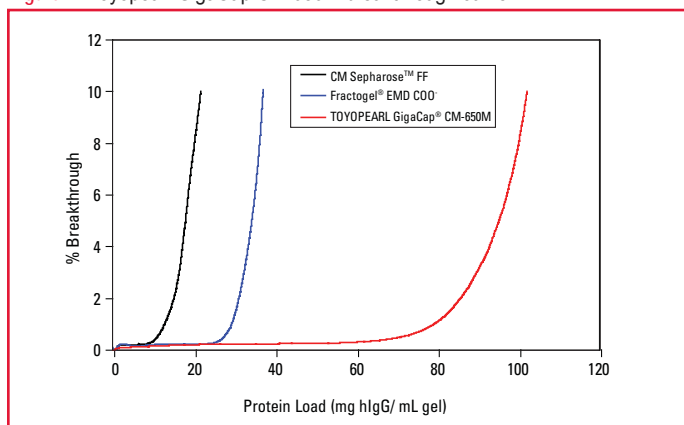


Table 1. Toyopearl GigaCap CM-650M properties

Ion exchanger	Particle size (µm)	Ion exchange capacity (meq/mL resin)	Dynamic binding capacity (mg/mL gel)	Recovery (%)
<b>TOYOPEARL GigaCap CM-650M</b>	50 - 100	0.17-0.28	100	98
CM Sepharose Fast Flow	45 - 165	0.09-0.13	22	93
Fractogel EMD C00 (M)	40 - 90	-	37	97
Toyopearl GigaCap S-650M	50 - 100	0.1-0.2	145	98

Conditions:

Dynamic binding capacities were determined at 10% breakthrough. Column size: 6 mm I.D. x 40mm height

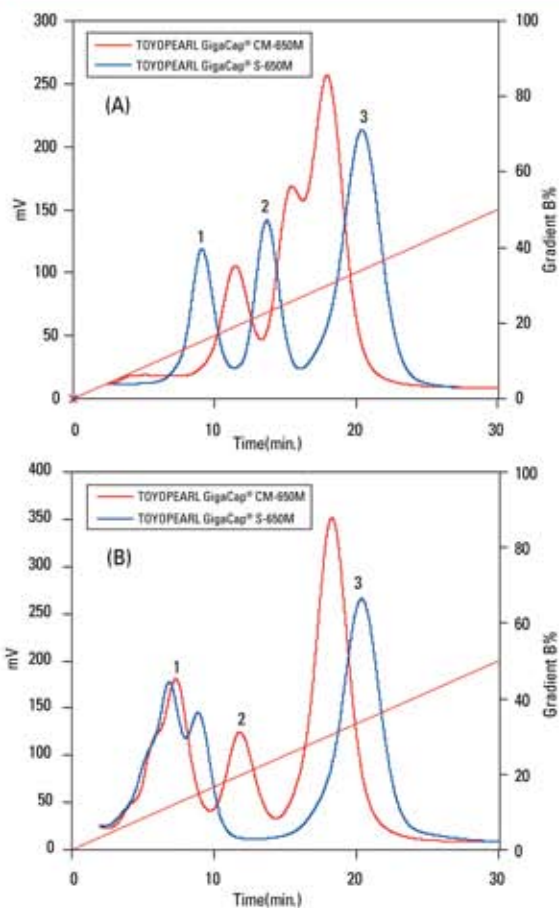
Sample: polyclonal human IgG (1mg/mL), Loading buffer 0.1mol/L acetate buffer (pH 4.7)

Elution buffer: 0.1mol/L acetate buffer (pH 4.7) + 1.0mol/L NaCl, Linear velocity: 212cm/hr. Detection: UV @ 280nm



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Figure 3. Toyopearl GigaCap CM-650M has unique selectivity



Column size: 6mm ID x 4cm, Flow rate; 1.0mL/min  
 Sample: (A) 1. ribonuclease A (5.0mg/mL),  
 2. cytochrome C (1.9mg/mL)  
 3. lysozyme (3.8mg/mL)  
 (B) 1. trypsinogen (3.8mg/mL),  
 2. ribonuclease A (5.0mg/mL)  
 3. lysozyme (3.8mg/mL)  
 Injection volume: 25µL  
 Buffer A: 20mmol/L Phosphate (pH 7.0)  
 Buffer B: 20mmol/L Phosphate + 1.0mol/L NaCl (pH 7.0)  
 Gradient: 60min linear gradient from buffer A to buffer B  
 Detection: UV @280nm

## Ordering Information

Part #	Description	Volume
21946	<b>Toyopearl GigaCap CM-650M</b>	100mL
21947	<b>Toyopearl GigaCap CM-650M</b>	250mL
21948	<b>Toyopearl GigaCap CM-650M</b>	1L
21949	<b>Toyopearl GigaCap CM-650M</b>	5L
21950	<b>Toyopearl GigaCap CM-650M</b>	50L
21951	<b>ToyoScreen GigaCap CM-650M</b>	1mL x 6
21952	<b>ToyoScreen GigaCap CM-650M</b>	5mL x 6

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