

TSK-GEL Q-STAT and TSK-GEL DNA-STAT columns

Non-Porous Anion Exchange Columns for High Speed and High Resolution Analysis of Biomolecules

TSK-GEL
PRODUCT OVERVIEW

Introduction

TSK-GEL Q-STAT and TSK-GEL DNA-STAT anion exchange columns allow fast equilibration and analysis, as well as isolation, of complex biomolecules. Both TSK-GEL columns are packed with mono-disperse, non-porous resin particles of which the surface consists of an open access network of multi-layered anion exchange groups (see Figure 1). The TSK-GEL Q-STAT columns are packed with 7 or 10µm particles, the TSK-GEL DNA-STAT column with 5µm particles. The innovative bonding chemistry combined with a relatively large particle size result in a respectable loading capacity and a low operating pressure, attributes not found in traditional mono-disperse, non-porous resins.

Table 1 illustrates that despite the fact that surface area decreases with increasing particle size, the larger TSK-GEL Q-STAT and TSK-GEL DNA-STAT particles have higher binding capacities than the smaller particles used in TSK-GEL NPR columns. The novel bonding chemistry used in the preparation of the TSK-GEL STAT resin resulted in a dramatic increase in static binding capacity, more than compensating for the loss in external surface area of the larger particles.

Figure 1.

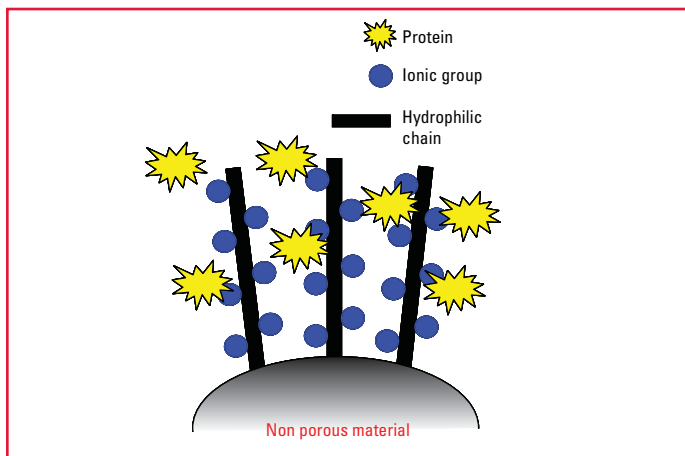


Table 1.

Property	TSK-GEL NPR Column	TSK-GEL DNA-STAT	TSK-GEL Q-STAT	
Particle size (µm)	2.5µm	5µm	7µm	10µm
Capacity*	9.1	38.6	27.0	20.9

* Static binding capacity, in mg BSA/g dry gel.

Product Highlights

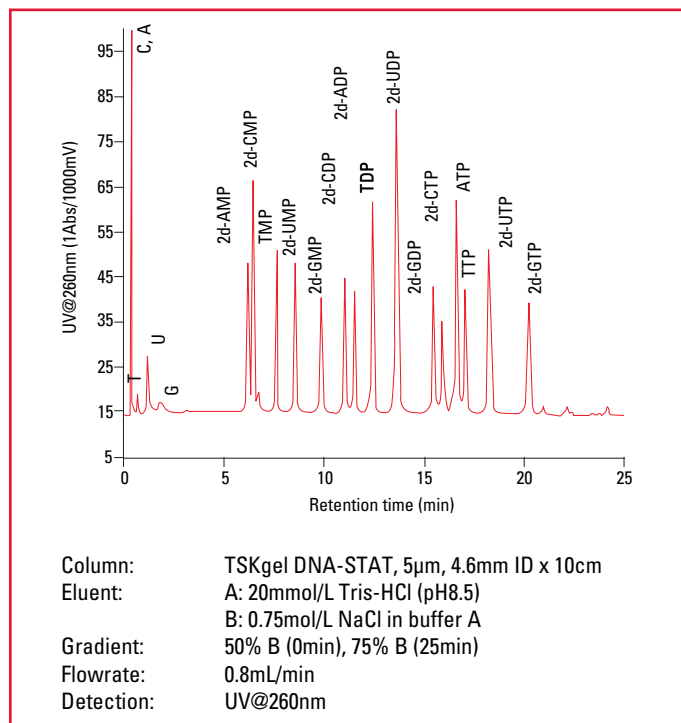
- Very efficient chromatography for high as well as low MW solutes made possible by novel bonding chemistry and the absence of micro-pores
- High speed and high resolution analysis of biomolecules
- Higher adsorption capacities and lower pressures compared with smaller particle sized TSK-GEL NPR columns
- 7 or 10µm particles (TSK-GEL Q-STAT) and 5µm particles (TSK-GEL DNA-STAT)

Applications

Nucleotides

Mono-, di-, and tri-nucleotides were separated with excellent peak shape on a TSKgel DNA-STAT column. The narrow, symmetrical peaks, as shown in Figure 2, demonstrate the absence of micro-pores on this new generation of non-porous resin columns. TSK-GEL DNA-STAT columns are also, as the name implies, first choice for large nucleic acid fragments.

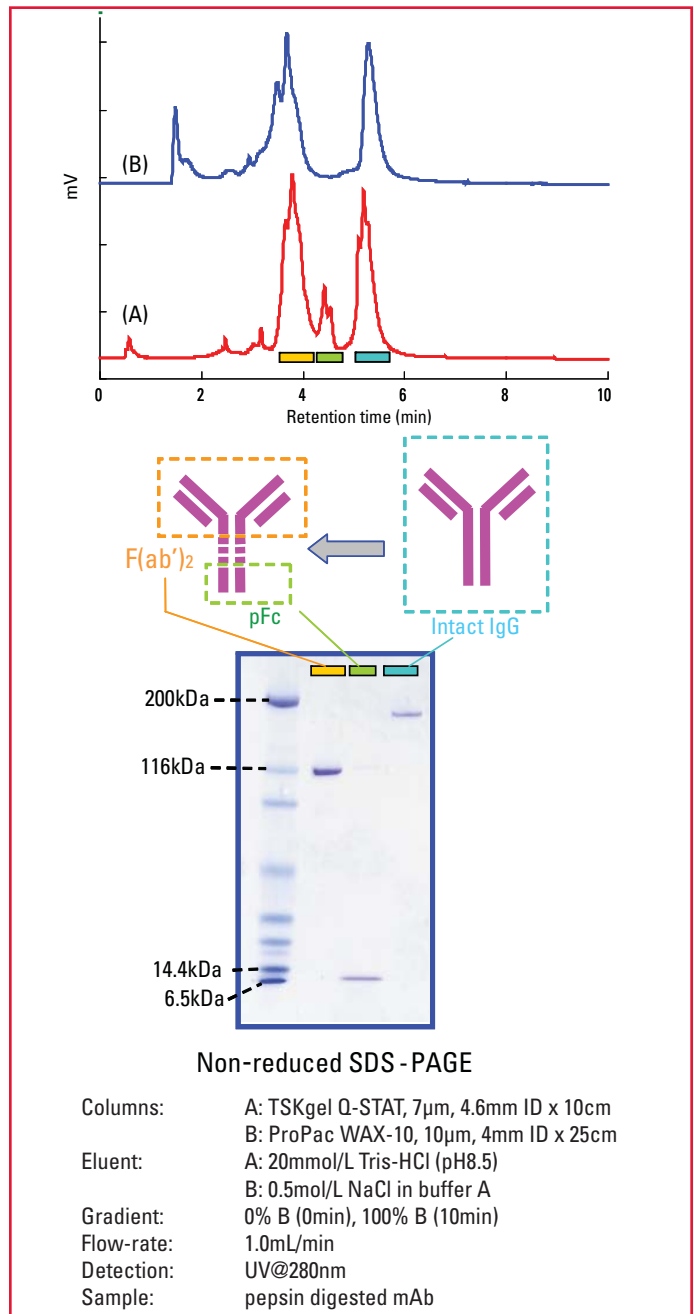
Figure 2.



Monoclonal Antibodies

The monoclonal antibody, IgG, was digested using pepsin and separated on a TSKgel Q-STAT column and a competitive non-porous WAX-10 column. As shown in *Figure 3*, three peaks were isolated from the TSKgel Q-STAT column and assigned as F(ab')₂, pFc and intact IgG by SDS-PAGE. There wasn't any correlation between the peaks obtained on the WAX-10 column and SDS-PAGE.

Figure 3.



Ordering Information

Part #	Description	Matrix	Housing	ID (mm)	Length (cm)
21960	TSKgel Q-STAT, 10μm	Polymer	Stainless Steel	3	3.5
21961	TSKgel Q-STAT, 7μm	Polymer	Stainless Steel	4.6	10
21962	TSKgel DNA-STAT, 5μm	Polymer	Stainless Steel	4.6	10



TOSOH BIOSCIENCE

TOSOH Bioscience LLC
3604 Horizon Drive, Suite 100
King of Prussia, PA 19406
Orders & Service: (800) 366-4875
Fax: (610) 272-3028
www.separations.us.tosohbioscience.com
email: info.tbi@tosoh.com



authorized distributor in Denmark
www.md-scientific.dk
Tlf. 70 27 8565