

WorkBeads™ 40 SEC

High Performance Size Exclusion Chromatography Media for Preparative and Process Scale Separation of Proteins

- Made from agarose, well established and well-known in the biotech industry
- Excellent resolution
- Robust separation results can be achieved across a wide range of proteins and separation conditions
- Chemically stable for cleaning in place

Media Description

WorkBeads™40 SEC media are produced from agarose using a proprietary cross linking method that results in a highly porous and physically stable agarose matrix. Agarose based matrices have been successfully used over decades in biotechnology research and in the industrial purification of proteins. Agarose is proven to be exceptionally compatible with natural bio-molecules like proteins, DNA carbohydrates etc. The material shows minimal non specific interaction due to the hydrophilic nature of agarose. Unlike matrices made from synthetic polymers, agarose does not have micro pores that can contribute to local pH variations in the micro-environment in the column and distorted separations

WorkBeads™40 SEC media for Size Exclusion Chromatography or Gel Filtration has a high selectivity which means the protein peaks are well separated with greater distance from each other than comparable products made from synthetic polymers. This means that the media has capacity to separate proteins well even when using high protein loadings.

Figure 1. shows the K_{av} curve for some common proteins. The dimer of thyroglobulin elutes in V_0 and the other proteins nicely follow the theoretical K_{av} -curve.

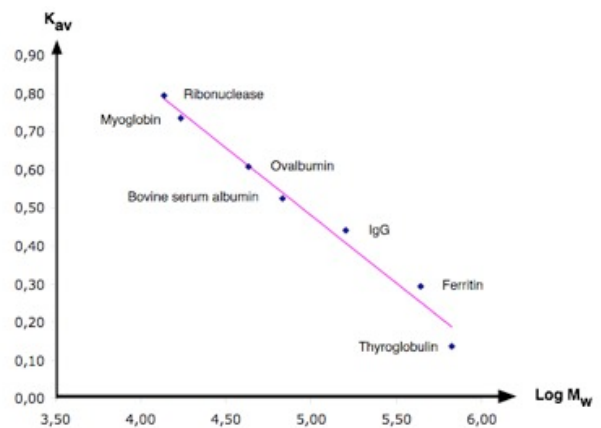


Fig 1

Resolution is the combined effect of selectivity (distance between peaks) and efficiency (peak width, depending on particle size). Separation media based on agarose are well known for excellent selectivity. The narrow particle size distribution around 40 microns in combination with the proprietary cross linking results a media that is easy to pack in columns with very high efficiency and good flow characteristics.

WorkBeads™40 SEC Gel Filtration Media is designed for high performance protein separations under a variety of conditions. The high resolution that can be obtained makes it ideal for both preparative work and process scale separation of proteins.

Separation Media Characteristics

WorkBeads™40 SEC

Agarose Content %	7.4-7.8
Exclusion Limit	1200 kD
Max flow rate at 20 cm bed height and 5 bar, cm/h	> 500
Particle Size (microns)	35 - 45
pH Stability	pH 1-14
Solvent Stability	100% methanol, 100% ethanol, 8 M urea, 6 M guanidine hydrochloride, 30% acetonitril, 70% formic acid, 30% trifluoroacetic acid

Column Sizes

WorkBeads™ 40 SEC is supplied in bulk or as pre-packed in analytical grade column with the following dimensions:

Media Volume (ml)	Internal Diameter (mm)	Bed Height (mm)
15	8	300

The columns are preserved with 22% ethanol

Column Specifications

Maximum Operating Flow Rate	6 ml/min
Optimal Operating Flow Rate	0.5-2.0 ml/min
Operating Temperature	4-40 °C
pH Stability	1-14
Plates/m	8,000 - 11,000
Asymmetry	0.85-1.15
Cleaning	Columns can be sanitized with 1 M NaOH or 70% ethanol.
Materials in Contact with Eluent	Borosilicate glass (chromatographic tube), titanium (filter), PEEK (polyetheretherketone) (tubing), EPDM (O-ring), PVDF (polyvinylidifluoride) (adaptor).
Solvent Resistance	Methanol, ethanol, 8 M urea, 6 M guanidinium hydrochloride, 30% acetonitrile, 70% formic acid, 1 M sodium hydroxide, 0.1 M hydrochloride acid, 5% sodium do-decyl sulphate, 5% 2-mercaptoethanol, 30% acetic acid, 0.1% trifluoroacetic acid.
Mesh Size of the Net	10 microns

ORDERING

Product Name	Column Size / Volume	Article Number
WorkBeads™40 SEC	Pre-Packed Column - 15 ml (8 x 300mm)	40 300 100
WorkBeads™40 SEC	Bulk Media – 300 ml	40 300 003
WorkBeads™40 SEC	Bulk Media – 1 L	40 300 010
WorkBeads™40 SEC	Bulk Media – 5 L	40 300 050

To purchase Bio-Works separation media contact your local distributor. You may also email, fax or phone Bio-Works directly at:

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