BioWorks by Watrex

Watrex Praha is the official distributor of Bio-Works, a leading global manufacturer of chromatographic resins designed for the purification of biopharmaceuticals. This partnership brings high-quality products to the Czech market, widely used in biotechnology and the pharmaceutical industry.

The main product of Bio-Works is WorkBeads resins, manufactured using a patented agarose-based method. These resins are characterized by excellent mechanical stability, uniform bead size distribution, and high separation efficiency. They are available both as loose resins and in prepacked columns, making them easy to use in various applications.

For efficient small-scale purification and process development screening, GoBio Mini columns are the ideal solution. These prepacked columns are available in 1 ml and 5 ml sizes, facilitating quick and effective biomolecule separations.

Bio-Works products are used in bioprocess solutions focused on the purification and analysis of biomolecules, including monoclonal antibodies, proteins, peptides, oligonucleotides, viruses, and vaccines. These technologies offer top-tier quality and precision, ensuring optimal capacity and product purity.

Types of sorbents:

1. Affinity chromatography resins

WorkBeads™ affimAb is an optimized alkali-stable protein A resin designed for purification of monoclonal- and polyclonal antibodies in laboratory to process scale. This resin has a superior base matrix combined with a patented, alkali-stable protein A ligand, which results in high dynamic binding capacity at short residence times. This resin binds over 40 mg IgG/mL resin also at as short residence time as 2.5 min. Available also in prepacked 1 mL and 5 mL GoBio™ Mini columns.

2. Ion exchange chromatography (IEX) resins

WorkBeads™ resins for ion exchange chromatography are designed for research and industrial scale purification of proteins, peptides and oligonucleotides by utilizing the difference in their surface charge. These resins demonstrate high-resolution separation while giving low back-pressure to facilitate both capture and polishing purification applications in standard bioprocess columns.

WorkBeads 100S is a strong cation exchanger and will bind positively charged substances. WorkBeads 100Q is a strong anion exchanger and will bind negatively charged substances. WorkBeads 40S is a strong cation exchanger with sulfonate ligands and will bind positively charged substances. WorkBeads 40Q is a strong anion exchanger with quaternary amine and will bind negatively charged substances. WorkBeads 40 DEAE is a weak anion exchanger with tertiary amine ligands (diethylaminoethyl) and is an alternative to WorkBeads 40Q when looking for alternative selectivities.

Also available in pre-filled GoBio™ Mini.

3. Size exclusion chromatography (SEC) resins

WorkBeads™ 40/100 SEC, WorkBeads 40/1000 SEC, WorkBeads 40/10 000 SEC, and WorkBeads Macro SEC resins are used for preparative size exclusion chromatography (SEC) in laboratory and process scale purification of proteins, viruses, and other biomolecules by utilizing the differences in their size. These resins are based on agarose, which is a biopolymer suitable for

separation of biomolecules. WorkBeads resins are cross-linked using a proprietary method that results in a very rigid structure. Although the general recommendation for SEC is to use a low flow rate for best purification, the rigidity and tight particle size distribution allow for the purification of viruses and other large substances at a high flow rate for fast processing and high yields.

Produced using a proprietary cross-linking method that results in highly porous and physically stable matrices

We have recently added two new Size Exclusion Chromatography (SEC) products that expand the range for more choice and flexibility in separating large particles. WorkBeads 200 SEC, with 180 µm beads, is suitable for viscous samples like serum and whole blood. WorkBeads Macro SEC resins extend the range of several resins with a bead size of 45 µm but different porosities, making it easy to change between them when different fractionation ranges are desired.

WorkBeads Dsalt resin is designed to enable quick and easy separations of high- and low-molecular-weight substances. This resin is pre-swollen and enables efficient desalting and buffer exchange of proteins, large peptides, and nucleic acids.

Also available in pre-filled GoBio™ Mini.

4. Hydrophobic interaction chromatography (HIC) resins

WorkBeads™ 40 Butyl SH is a resin for hydrophobic interaction chromatography (HIC) designed for research and industrial scale purification of proteins, peptides, plasmids, and oligonucleotides by utilizing the difference in their surface hydrophobicity. It's often used to complement other techniques that separate according to either charge or size.

The functional ligand of WorkBeads 40 Butyl SH is n-butyl thioether. Since butyl is a very hydrophobic linear chain, minimal mixed-mode interactions are expected. The resin is optimized to offer reliable binding performance. The property of high-resolution separation, in combination with low backpressure, allows both capture and polishing purification applications in standard bioprocess columns. The resin is also available in several different ready-to-use prepacked column sizes, such as GoBio™ Mini 1 mL and 5 mL, **GoBio Screen** 7 x 100 (3.8 mL), **GoBio Prep** 16 x 100 (20 mL) and 26 x 100 (53 mL) as well as **GoBio Prod** columns starting at 1 L.

5. Immobilized metal-ion affinity chromatography (IMAC) resins

There are three different chelating ligands that WorkBeads IMAC resins are based on. First are WorkBeads IDA (iminodiacetic acid) and WorkBeads NTA (nitrilotriacetic acid), which can be charged or are pre-charged with four different metals (Ni2+, Co2+, Cu2+, and Zn2+). Different combinations of ligands and metals give unique selectivities. Pre-charged IDA and NTA-based IMAC resins can be stripped, cleaned, and recharged with fresh metal ions.

The third resin is WorkBeads NiMAC, a nickel pre-charged resin with very low nickel leakage and tolerant against chelating agents (EDTA) and reducing substances (DTT). This resin is optimal for the purification of, e.g. eukarytic cell feeds, which often containing these substances.

For optimization, an initial screening is recommended with the different WorkBeads IMAC resins to identify the optimal combination of ligand and metal ion.

Also available in pre-filled GoBio™ Mini.

6. Activated resins

Pre-activated resin enables successful, convenient immobilization of ligands without the need for complex syntheses or special equipment. We have developed two different pre-activated resins where the bromohydrin active group reacts with thiol, amino and hydroxyl groups of the substance to be coupled. Two different resin porosities are available to facilitate optimized coupling of ligands of different sizes, or to optimize the prepared affinity resin for target molecules of different sizes.

Resin for coupling your own ligands:

- Made from agarose, well established and well-known in the Biotechnology industry
- Simple coupling procedures at ambient temperature
- Stable at ambient temperature in aqueous solution and at neutral pH
- Suitable for coupling of ligands containing sulphydryl, amino- or hydroxy group

Available as **WorkBeadsTM sorbents** or in pre-filled **GoBio™ Mini**.

For more information or a non-binding quote regarding BioWorks products, please contact us at **watrex@watrex.com** or visit our website **www.watrex.com**