



interchim®

INTERFINE CHEMICALS

ANALYTICAL SCIENCES

BIOCHROMATOGRAPHY

LIFE SCIENCES

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Bio-Works RANGE

- Products
- Columns characteristics



Bio-Works Products

Technic	WorkBeads™	BabyBio™ Columns
 Exclusion	WorkBeads™ 40 SEC WorkBeads™ 40/100 SEC WorkBeads™ 40/10000 SEC	BabyBio™ D-Salt
 Ion Exchange	WorkBeads™ 40 Q WorkBeads™ 40 S WorkBeads™ 40 DEAE	BabyBio™ Q BabyBio™ S Baby Bio™ DEAE
 RecProtein Affinity	WorkBeads™ 40 Ni WorkBeads™ 40 IDA WorkBeads™ 40 TREN	BabyBio™ NiNTA
 Antibody Affinity	WorkBeads™ Protein A	BabyBio™ Protein A
 Affinity Antigen - Antibody	WorkBeads™ 40 ACT WorkBeads™ 40/10 000 ACT	

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ITM-20160929-P/E



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Exclusion

- **WorkBeads™ 40 SEC**
- **WorkBeads™ 40/10 000 SEC**

High Performance Size Exclusion Chromatography Media for laboratory and process scale separation of proteins and molecules. Made from agarose, well established and well known in the biotech industry

- Excellent resolution
- Robust separation across a wide range of proteins and molecules
- Chemically stable media



Separation Ranges

Product	Separation Range kDalton	Exclusion Limit kDalton
WorkBeads™ 40/100 SEC	10 - 150	150
WorkBeads™ 40 SEC	50-1200	1200
WorkBeads™ 40/10000 SEC	Very large molecules and particles	> 10 000

Media description

	WorkBeads™ 40 SEC	WorkBeads™ 40/100 SEC	WorkBeads™ 40/10 000 SEC
Agarose content %	7	9	5
Exclusion limit	1200kDa	150kDa	10 000kDa
Flow rate (cm/h)	600	600	600
Average particle size (µm)	45	45	45
pH stability	2-13	2-13	2-13

The media are preserved in 20% ethanol.

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BabyBio™ Dsalt

BabyBio™ Dsalt ready to use mini column available in 1mL and 5mL which allows quick, easy and convenient group separation of high and low molecular weight substances

- Designed for swifter and efficient desalting and buffer exchange applications
- Stronger, reproducible and easy to use column
- Easy scaling-up, columns can be coupled in series



Column characteristics

Target substance	Proteins and other biomolecules of similar size
Medium	Highly cross-linked dextran
Column volumes	1mL 5mL
Column dimensions	7 × 28mm (1mL) 13 × 38mm (5mL)
Recommended flow rate	1 ml/min (BabyBio Dsalt 1mL) 5 ml/min (BabyBio Dsalt 5mL)
Max flow rate (conditions see Data sheet)	5 ml/min (BabyBio Dsalt 1mL) 12 ml/min (BabyBio Dsalt 5mL)
Maximum back pressure	0.3MPa, 3bar, 43psi
Chemical stability	Compatible with all standard aqueous buffers used for Protein purification.
Recommended working range pH Stability	2-12
Storage	+2°C to +25°C in 20% ethanol



Ion Exchange

- WorkBeads™ 40 Q
- WorkBeads™ 40 S
- WorkBeads™ 40 DEAE

Ion exchange media (IEX) for laboratory and production purification of proteins.
Made from agarose, well established and well known in the biotech industry

- High throughput and resolution
- Reliable and reproducible
- High chemical stability for easy cleaning in place

Media description

	WorkBeads™ 40 Q	WorkBeads™ 40 S	WorkBeads™ 40 DEAE
Agarose content	7%	7%	7%
Protein capacity	BSA, 130mg/mL	IgG, 70mg/mL	BSA, 85mg/ml
Ionic group	Quaternary amine	Sulphonic acid	Di-ethylaminoethyl
Ionic capacity (mmol/mL)	0.18-0.25	0.18-0.25	0.11-0.16
Max flow rate (20cm bed height; 5 Bar) (cm/hr)	600	600	600

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BabyBio™ Q

BabyBio™ Q is a pre-packed, ready to use strong anion exchange column for easy and convenient purification of proteins.

- Rapid method screening and separations
- High binding capacity and purity
- Easy ready to use columns



BabyBio™ S

BabyBio™ S is a pre-packed, ready to use strong cation exchange column for easy and convenient purification of proteins.

- Rapid method screening and separations
- High binding capacity and purity
- Easy ready to use columns



BabyBio™ DEAE

BabyBio™ DEAE is a pre-packed, ready to use strong cation exchange column for easy and convenient purification of proteins.

- Rapid method screening and separations
- High binding capacity and purity
- Easy ready to use columns



Column characteristics

	BabyBio™ Q	BabyBio™ S	BabyBio™ DEAE
Medium	WorkBeads™ 40 Q	WorkBeads™ 40 S	WorkBeads™ 40 DEAE
Matrix	Rigid, highly cross-linked agarose		
Average particle size	45 µm		
Ligand	Quaternary Amine	Sulfonate	Diethylaminoethyl
Ionic capacity (mmol/mL)	0.18-0.25	0.18-0.25	0.11-0.16
Dynamic binding capacity¹ (mg BSA/mL medium)	50	130	40
Column volumes		1mL 5mL	
Column dimensions		7×28mm (1mL) 13×38mm (5ml)	
Recommended flow rate			
BabyBio 1mL		1mL/min	
BabyBio 5mL		5mL/min	
Max flow rates			
BabyBio 1mL		5mL/min	
BabyBio 5mL		20mL/min	
Maximum back pressure		0.3 MPa, 3 bar, 43 psi	
Chemical stability	Compatible with all standard aqueous buffers used for protein purification. 70% ethanol. Should not be stored at low pH for prolonged time.		
pH Stability	3-13 working range 2-13 cleaning		
Storage	+2°C to +25°C in 20% ethanol		

RecProtein Affinity

• WorkBeads™ 40 Ni

High throughput agarose media for capture of His-tagged proteins

- High dynamic capacity
- High purity
- Excellent flow properties



Media description

	WorkBeads™ 40 Ni
Agarose content	7%
Metal Ion capacity (µmol Ni ²⁺ /mL)	50-60
Average particle Size (µm)	45
Protein capacity (mg/mL)	>60
Max flow rate (20cm bed height; 5 Bar) (cm/hr)	600
pH stability	2-13

• WorkBeads™ 40 IDA • WorkBeads™ 40 TREN

High Throughput Agarose Media for Immobilised Metal Affinity Chromatography (IMAC)

- Made from agarose, well established and well-known in the Biotechnology Industry
- Choice of IMAC chemistry to fit a large variety of proteins
- High flow characteristics

WorkBeads™ 40 IDA and WorkBeads™ 40 TREN immobilised metal affinity chromatography (IMAC) have optimal length spacer arm between the agarose backbone and the attached chelator.

The agarose beads are supplied in aqueous suspensions with 20 % ethanol as preservative and are immediate ready for use after washing.

WorkBeads 40™ IDA and WorkBeads™ 40 TREN media for selecting optimal IMAC conditions.

Media description

	WorkBeads 40 IDA	WorkBeads 40 TREN
Agarose content	7%	7%
Chelating group	Iminodiacetic acid (IDA)	Tris(2-ethylaminoethyl) amine (TREN)
Metal Ion capacity (µmol Cu ²⁺ /ml)	10-20 IDAlow 50-60 IDAhigh	10-20 TRENlow 50-60 TRENhigh
Average particle size (µm)	45	45
Protein capacity (mg/mL)	>60	>60
Max flow rate (20cm bed height; 5 Bar) (cm/hr)	600	600
pH stability	2-13	2-13

BabyBio™ Ni-NTA

BabyBio™ Ni-NTA ready to use mini column available in 1mL and 5mL for quick, easy and convenient affinity purification of proteins carrying a polyhistidine tag (His)

- Swifter purification of His-tagged proteins
- Higher binding capacity and purity in one step
- Simple and easy method giving reproducible results



Column characteristics

BabyBio™ Ni-NTA	
Target substance	His-tagged proteins
Medium	WorkBeads™ Ni-NTA
Ligand	Nitrilotriacetic acid (NTA) charged with Nickel ions
Static binding capacity	70 mg His-tagged protein/ml medium
Dynamic binding capacity (conditions see Data sheet)	50 mg His-tagged protein/ml medium
Column volumes	1mL 5mL
Column dimensions	7×28mm (1mL) 13×38mm (5 ml)
Recommended flow rate	
BabyBio™ 1mL	1mL/min
BabyBio™ 5mL	5mL/min
Max flow rates	
BabyBio™ 1mL	5mL/min
BabyBio™ 5mL	20mL/min
Maximum back pressure	0.3 MPa, 3 bar, 43 psi
Chemical stability	Compatible with all standard aqueous buffers used for protein purification. 20% ethanol. Chelating substances (e.g, EDTA will strip off the Ni ²⁺ ions) Stripped column: 10mM HCl (pH2), 10mM NaOH (pH12), 0.1M sodium citrate-HCl (pH3), 6M guanidine-HCl. Should not be stored at low pH for prolonged time.
Recommended working range	7-9 short term
pH Stability	2-12 cleaning (stripped column)
Storage	+2°C to +25°C in 20% ethanol

Antibody Affinity

• WorkBeads™ Protein A

WorkBeads™ Protein A is a new affinity resin designed for the purification of monoclonal and polyclonal antibodies.

- Higher dynamic binding capacity for monoclonal antibodies; excellent recovery & high purity
- Stronger coupling chemistry; high pH stability and low leakage
- Reliable, reproducible and efficient



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BabyBio A

BabyBio A™ ready to use mini columns available in 1 ml and 5 ml. Products allow quick, easy and convenient purification of monoclonal and polyclonal antibodies.

- Swifter purification of polyclonal and monoclonal antibodies
- Higher binding capacity and purity in one step
- Simple and easy method giving reproducible results



Column characteristics

BabyBio A	
Medium	WorkBeads Protein A
Matrix	Rigid, highly cross-linked agarose
Ligand	Recombinant protein A expressed in E. coli using animal-free medium
Coupling chemistry	Bromohydrin
Dynamic binding capacity	>40 mg human IgG/ml medium
Column volumes	1mL 5mL
Column dimensions	7×28mm (1mL) 13×38mm (5 ml)
Recommended flow rate	
BabyBio 1mL	0.5-1mL/min
BabyBio 5mL	1-4mL/min
Max flow rates	
BabyBio 1mL	5mL/min
BabyBio 5mL	15mL/min
Maximum back pressure	0.3 MPa, 3 bar, 43 psi
Chemical stability	Compatible with all standard aqueous buffers used for protein purification
Recommended working range	7-9 short term
pH Stability	3-10 short term 2-10 cleaning
Storage	+4°C to +8°C in 20% ethanol

Affinity Antigen - Antibody

- WorkBeads™ 40 ACT
- WorkBeads™ 40/10 000 ACT

Activated Media for laboratory and process scale Affinity chromatography with User's choice of ligand.

- Faster to results; simple coupling procedure
- Stable at ambient temperature, aqueous coupling solution and neutral pH
- Suitable for coupling ligands containing Sulphydryl-, Amino- or Hydroxyl groups

Media description

- WorkBeads™ 40 ACT for coupling small molecules and peptides
- WorkBeads™ 40/10 000 ACT for coupling immunoglobulins and other large entities

	WorkBeads 40 ACT	WorkBeads 40/10 000 ACT
Agarose content	7%	5%
Flow rate (cm/h) (20cm bed height; 5 Bar) (cm/hr)	600	600
Average particle size (µm)	45	45
Degree of substitution approx (µmol/ml)	250	150
Activated groups	Bromide	Bromide

Buffer selection for WorkBeads™ ACT

Coupling conditions and selection of coupling buffers	Type of ligand Functional group of ligand	Coupling buffers
Organic molecules, peptides	Sulphydryl (-SH)	<ul style="list-style-type: none">• pH7 and higher.• Sensitive ligands can be coupled at pH7.• Better yield will be obtained at a higher pH.
Organic molecules, peptides	Amino (-NH ₂) R2-NH R3-N	<ul style="list-style-type: none">• When the ligand is used in excess, dissolve the ligand in distilled water and let the basicity of the ligand determine the coupling pH.
Proteins polypeptides	Sulphydryl (-SH)	<ul style="list-style-type: none">• pH7 and higher.• Sensitive ligands can be coupled at pH7 but a better yield will be obtained at a higher pH.
Proteins polypeptides	Primary amino (-NH ₂)	<ul style="list-style-type: none">• Coupling yield will increase at higher pH.• A carbonate buffer of pH 8-8.5 gives often sufficient coupling without denaturation of sensitive polypeptides and proteins.• Another possibility is to run the coupling reaction at lower temperature
All types	Hydroxyl (-OH)	<ul style="list-style-type: none">• The low nucleophilicity of the hydroxyl group demands coupling condition at very high pH (pH>12).• At a pH>12 cross-linking and hydrolysis will compete with the coupling procedure.

BabyBio Columns characteristics

- Longer and thinner than competition : More efficient
- Slight funnel shape : sample is re-concentrate at the bottom of the column : thick peaks
- Plug in one peace : robustness
- Dispenser : design optimized. The sample distribution is perfect



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