



BabyBio™ NTA His-tag Screening kit BabyBio™ IDA His-tag Screening kit



The BabyBio His-tag Screening kits contain pre-packed BabyBio columns for Immobilized Metal ion Affinity Chromatography (IMAC) for a quick and convenient screening process for purification of polyhistidine-tagged (His-tagged) proteins. The kits enable optimization of the purification with the screening of metal ion and chelating ligand. The BabyBio His-tag Screening kits are available in two column sizes and each with two different chelating ligands.

- Easy ready to use columns
- Rapid method for screening of metal ion and chelating ligand
- High binding capacity and purities

BabyBio NTA His-tag Screening kit 1 mL

1 pcs BabyBio Ni-NTA 1 mL
1 pcs BabyBio Co-NTA 1 mL
1 pcs BabyBio Cu-NTA 1 mL
1 pcs BabyBio Zn-NTA 1 mL
4 pcs Column Cap Female 1/16"

BabyBio IDA His-tag Screening kit 1 mL

1 pcs BabyBio Ni-IDA 1 mL
1 pcs BabyBio Co-IDA 1 mL
1 pcs BabyBio Cu-IDA 1 mL
1 pcs BabyBio Zn-IDA 1 mL
4 pcs Column Cap Female 1/16"

BabyBio NTA His-tag Screening kit 5 mL

1 pcs BabyBio Ni-NTA 5 mL
1 pcs BabyBio Co-NTA 5 mL
1 pcs BabyBio Cu-NTA 5 mL
1 pcs BabyBio Zn-NTA 5 mL
4 pcs Column Cap Female 1/16"

BabyBio IDA His-tag Screening kit 5 mL

1 pcs BabyBio Ni-IDA 5 mL
1 pcs BabyBio Co-IDA 5 mL
1 pcs BabyBio Cu-IDA 5 mL
1 pcs BabyBio Zn-IDA 5 mL
4 pcs Column Cap Female 1/16"

Media Description

BabyBio columns provided in the screening kits are pre-packed with cross-linked agarose based media and can successfully be used in the purification of proteins in biotechnology research and method development. The base matrix is WorkBeads™ which is highly porous to enable optimal protein interaction. The metal ion is immobilized on the media via a chelating ligand based on nitrilotriacetic acid (NTA) or iminodiacetic acid (IDA).

The ready to use BabyBio NTA and BabyBio IDA columns are packed with the WorkBeads NTA and WorkBeads IDA, respectively, and are pre-charged with Ni²⁺, Co²⁺, Cu²⁺ or Zn²⁺ ions for quick and convenient purification of His-tagged proteins. The screening kits can be used for screening combinations of metal ions and chelating ligand (NTA or IDA) to optimize purity and yield in the purification of His-tagged proteins. Some native proteins containing histidine, cysteine and tryptophan residues may also bind and can therefore be purified using the columns.

Column description

The column is made from biocompatible polypropylene which does not significantly interact with biomolecules. The top and bottom filters are made from polyethylene. The ready to use BabyBio columns are delivered with a plug in the inlet, a cut-off outlet and a cap for storage. The columns can be connected to a syringe, pump or chromatography system using fingertight fittings (coned 10–32) for 1/16" o.d. tubing (standard HPLC PEEK tubing).

Short instructions

1. Connect the column to the chromatography system, syringe or pump
2. Equilibrate with binding buffer
3. Apply the sample
4. Wash with washing buffer
5. Elute with elution buffer containing a competing ligand or a decreasing pH

Scale-up

Scale-up can conveniently be carried out from a 1 ml column to a 5 ml column. Columns can be coupled in series (note that the back pressure will increase). Further scale-up can be done with bulk packs of WorkBeads IMAC media packed in larger columns. For more detailed description, please see instruction IN45700010.

Cleaning and recharging with metal ions

Samples containing small amounts of impurities tend to adsorb to the column by unspecific interactions. This may reduce the column performance over time. It is therefore common to perform regular cleaning of the column. This must be done by first stripping off the metal ions, cleaning, and then recharging with fresh metal ions.

Equipment

BabyBio pre-packed ready to use columns can be used with most standard liquid chromatography equipment. Purification can also be done using a syringe connected to the column by a luer/std HPLC connector.

	BabyBio Ni-NTA, Co-NTA, Cu-NTA, Zn-NTA BabyBio Ni-IDA, Co-IDA, Cu-IDA, Zn-IDA	
Target substance	His-tagged proteins, proteins containing histidine cysteine and/or tryptophan amino acid	
Medium	WorkBeads 40 Ni-NTA WorkBeads 40 Co-NTA WorkBeads 40 Cu-NTA WorkBeads 40 Zn-NTA	WorkBeads 40 Ni-IDA WorkBeads 40 Co-IDA WorkBeads 40 Cu-IDA WorkBeads 40 Zn-IDA
Matrix	Rigid, highly cross-linked agarose	
Average particle size	45µm	
Ligand	Nitrilotriacetic acid (NTA) Iminodiacetic acid (IDA)	
Coupling chemistry	Bromohydrin	
Static binding capacity¹	70mg His-tagged protein/ml medium	
Dynamic binding capacity¹	50mg His-tagged protein/ml medium	
Column volumes	1mL 5mL	
Column dimensions	7x28mm (1mL) 13x38mm (5mL)	
Recommended flow rate	BabyBio 1mL 1mL/min BabyBio 5mL 5mL/min	
Maximum flow rate²	BabyBio 1mL 5mL/min BabyBio 5mL 20mL/min	
Maximum back pressure	0.3MPa, 3bar, 43psi	
Chemical stability	Compatible with all standard aqueous buffers used for protein purification 20% ethanol Chelating substances (e.g., EDTA) will strip off the metal ions Stripped column: 10 mM HCl (pH 2), 10 mM NaOH (pH 12), 100 mM sodium citrate-HCl (pH 3), 6 M guanidine-HCl <i>Do not keep the column at low pH for prolonged time.</i>	
pH Stability	7-9 short term 2-12 cleaning (stripped column)	
Storage	+2 to +25°C in 20% ethanol	

¹ The binding capacity is determined for BabyBio Ni-NTA 1 ml. The binding capacity is dependent on the size of the target protein, and on the competition from impurities.

² Aqueous buffers at 20°C. Decrease the maximum flow rate if the liquid has a higher viscosity. Higher viscosities can be caused by low temperature (use half of the maximum flow rate at 4 °C), or by additives (e.g., use half of the maximum flow rate for 20% ethanol).

Ordering Information

Product name	Pack size	Article number
BabyBio NTA His-tag Screening kit 1mL	1	45700101
BabyBio NTA His-tag Screening kit 5mL	1	45700102
BabyBio IDA His-tag Screening kit 1ml	1	45700001
BabyBio IDA His-tag Screening kit 5mL	1	45700002