

Protein purification products from MACHEREY-NAGEL

GST- and His-Tag purification

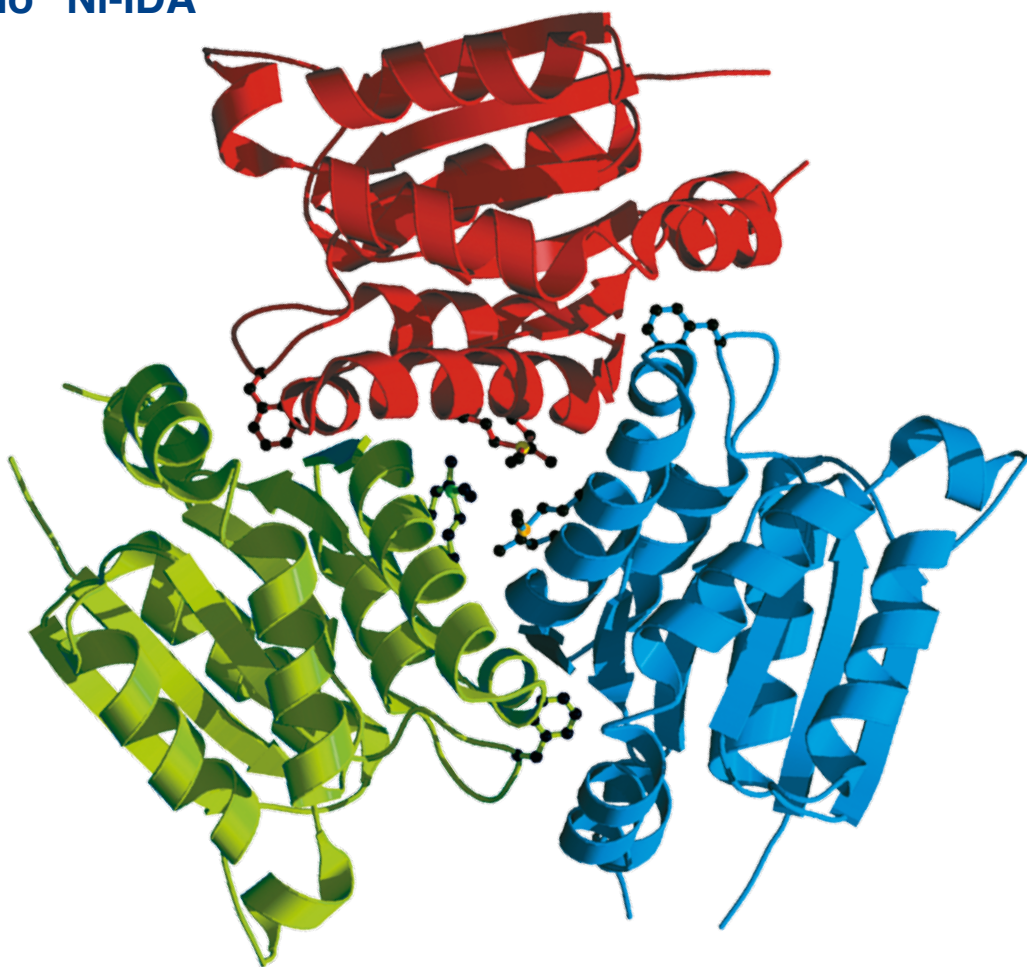
Save money without making compromises

Protino[®] Glutathione Agarose 4B

Protino[®] Ni-NTA

Protino[®] Ni-TED

Protino[®] Ni-IDA



... market-leading performance for individual needs

MACHEREY-NAGEL

www.mn-net.com



Since 1911

His-tag purification

Agarose based – Protino® Ni-NTA

► **Save money without making compromises**

► **Highest performance equivalent to market-leading Ni-NTA products**

Simply replace your current Ni-NTA agarose, neither optimization nor protocol change

► **High capacity and high affinity**

Up to 50 mg/mL binding capacity*

► **Ready-to-use resin/columns for any application**

Protino® Ni-NTA Agarose – bulk resin for batch purification, gravity flow columns and FPLC™

Protino® Ni-NTA Columns – prepacked ready-to-use FPLC™ columns

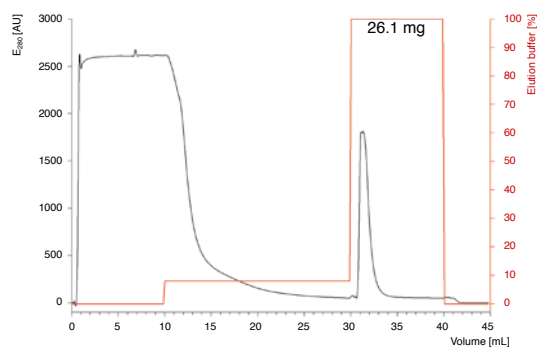
Specifications

Matrix	6 % beaded agarose (cross linked), precharged with Ni ²⁺
Chelating ligand	NTA (nitrilotriacetic acid)
Bead size	45–165 µm
Binding capacity*	50 mg/mL
Max linear flow rate	300 cm/h
Format	Bulk resin (50 % aqueous solution in 30 % ethanol), ready-to-use 1 mL and 5 mL FPLC™ columns, 96-well plate

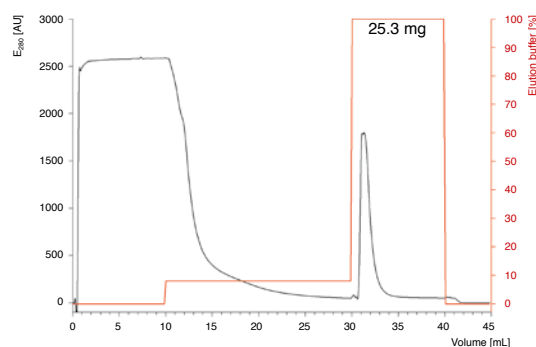
Protino® Ni-NTA Agarose

Application data

Protino® Ni-NTA Agarose (MN)



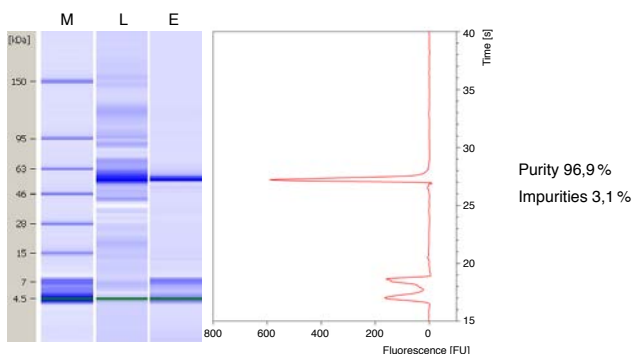
Ni-NTA Agarose (Q)



Protino® Ni-NTA Agarose shows high performance and similar yield comparable to competitor Q's Ni-NTA Agarose

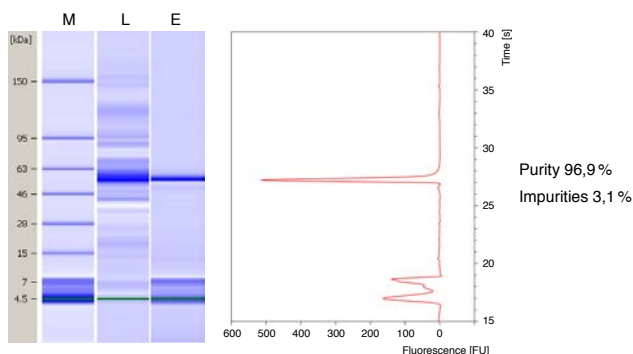
Equivalent amounts of clarified *E. coli* lysate containing His-tagged green fluorescent protein (GFP) were used for the comparison.

Protino® Ni-NTA Agarose (MN)



Simulated gel image (left panel): M = standard, L = lysate, E = Eluate

Ni-NTA Agarose (Q)



Electropherogram (right panel): Analysis of eluted purified target protein

Electropherograms of purified His-tagged aspartase show that Protino® Ni-NTA Agarose provides comparable purity as Q's Ni-NTA Agarose

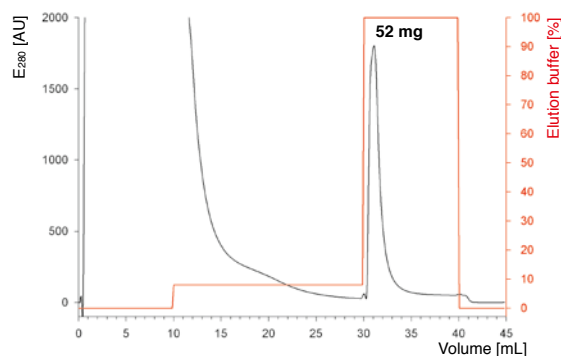
Bioanalyzer automated electrophoresis purity analysis of His-tagged aspartase (tetramer 208 kDa, subunit 52 kDa) purified from *E. coli* with Protino® Ni-NTA Agarose (MN) and Ni-NTA Agarose (Q) by Agilent Protein 230 Assay.

*Binding capacity will vary for each His-tagged protein

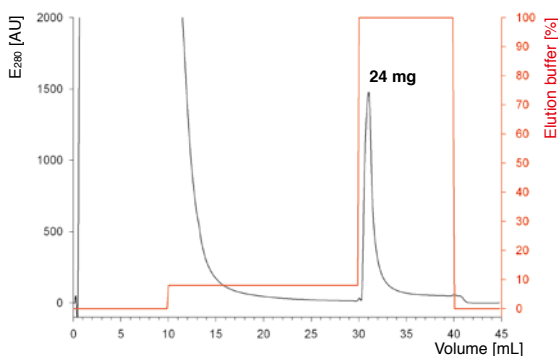
Protino® Ni-NTA Columns

Application data

Protino® Ni-NTA Columns 1 mL (MN)



Ni-NTA Superflow Cartridges 1 mL (Q)



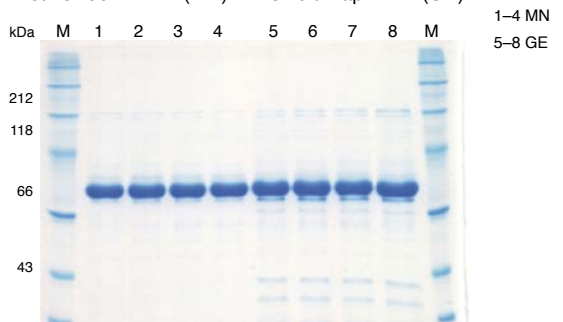
Higher yields for large proteins

Equivalent amounts of clarified *E. coli* lysate containing His-tagged aspartase protein were used for comparison. Superior yield of aspartase protein (208 kDa tetramer) was obtained with crosslinked agarose (Protino® Ni-NTA Columns) in comparison with highly crosslinked Superflow matrix (Q's Ni-NTA Superflow Cartridges).

Protino® 96 Ni-NTA

Application data

Protino® 96 Ni-NTA (MN) HisMultiTrap™ HP (GE)

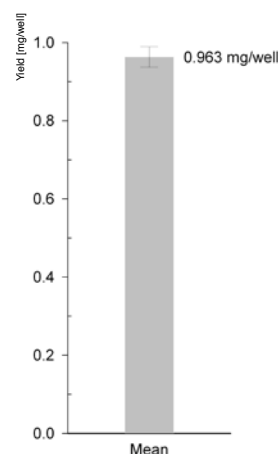
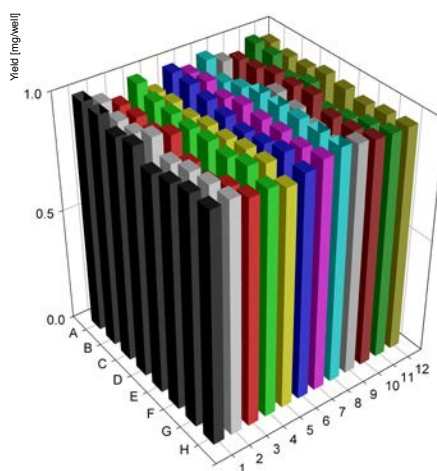


High-throughput purification of His-tagged green fluorescent protein (GFP) using Protino® 96 Ni-NTA

For the comparison, clarified *E. coli* lysate containing 0.5 mg His-tagged GFP was used. For binding, suspensions have been shaken for 60 min at room temperature. Pooled elution fractions were subjected to SDS-PAGE.

Well-to-well reliability

Protino® 96 Ni-NTA was loaded with *E. coli* lysate containing His-tagged GFP. For protein binding, suspensions were shaken for 20 min at RT. After batch binding, the yield of eluted target protein was determined. The results show that all 96 samples are consistent from well to well. Yield per well differs by just 2.7% (relative standard deviation) indicating high well-to-well reproducibility.



Ordering information

Product

Protino® Ni-NTA Agarose

Protino® Ni-NTA Columns 1 mL

Protino® Ni-NTA Columns 5 mL

Protino® 96 Ni-NTA

Pack of

25 mL / 100 mL / 500 mL

5 x 1 mL

1 x 5 mL / 5 x 5 mL

1 x 96 / 4 x 96

REF

745400.25 / .100 / .500

745410.5

745415.1 / .5

745425.1 / .4

His-tag purification

Silica based – Protino® Ni-TED/Protino® Ni-IDA

► **Unique silica concept enables to apply highest pressure for purification**

► **High binding specificity, high protein purity**

Protino® Ni-TED: Highest binding specificity – highest purity

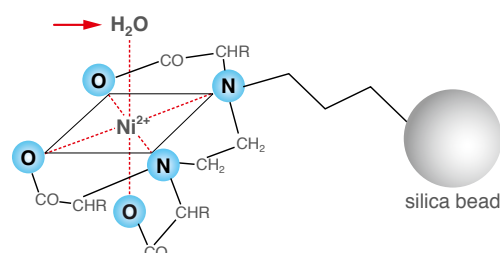
Protino® Ni-IDA: Fair balance of yield and purity

► **Available in different formats: Bulk resin, gravity flow columns, 96-well plate (Protino® Ni-IDA)**

Protino® Ni-TED

Specifications

Chelating ligand	TED (tris-carboxymethyl ethylene diamine)
Ligand density	High
Binding capacity*	10 mg/g
Format	Dry bulk resin, gravity-flow columns



Scheme of a Protino® Ni-TED silica bead

5 out of 6 binding sites of Ni^{2+} -ion for complexing with TED, one for selective His-tag binding (→).

→ Highest specificity of Ni^{2+} to His-tagged proteins

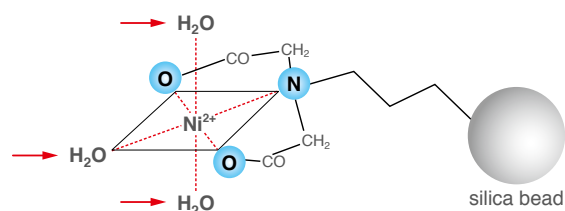
→ Minimum metal-ion leaching

→ Highest purity

Protino® Ni-IDA

Specifications

Chelating ligand	IDA (iminodiacetic acid)
Ligand density	Low
Binding capacity*	20 mg/g
Format	Dry bulk resin, gravity-flow columns, 96-well plate



Scheme of a Protino® Ni-IDA silica bead

3 out of 6 binding sites of Ni^{2+} -ion for complexing with IDA, 3 for selective His-tag binding (→).

→ Good protein yield and purity

Ordering information

Product	Pack of	REF
Protino® Ni-TED Resin	5/30/120/600 g	745200.5/.30/.120/.600
Protino® Ni-TED 150 Packed Columns	10/50	745100.10/.50
Protino® Ni-TED 1000 Packed Columns	5/50	745110.5/.50
Protino® Ni-TED 2000 Packed Columns	5/25	745120.5/.25
Protino® Ni-IDA Resin	5/30/120/600 g	745210.5/.30/.120/.600
Protino® Ni-IDA 150 Packed Columns	10/50	745150.10/.50
Protino® Ni-IDA 1000 Packed Columns	5/50	745160.5/.50
Protino® Ni-IDA 2000 Packed Columns	5/25	745170.5/.25
Protino® 96 Ni-IDA	1 x 96 / 4 x 96	745300.1/.4

*Binding capacity will vary for each His-tagged protein

GST-tag purification

Agarose based - Protino® Glutathione Agarose 4B

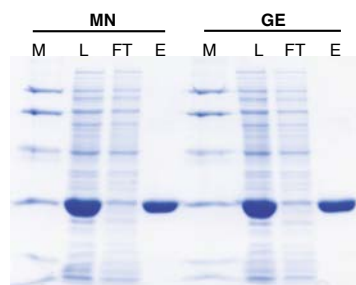
- ▶ **Market-leading performance for an unbeatable price**
- ▶ **Just copy and paste your procedure – no protocol change**
Protino® Glutathione Agarose 4B – equal to Glutathione Sepharose 4B
Protino® GST/4B Columns – equal to GSTrap™ 4B columns
- ▶ **Universal usage – suitable for small, large proteins, and even low expressed proteins**
4 % beaded agarose (non cross-linked) allows purification of any protein size
- ▶ **Any application possible**
Protino® Glutathione Agarose 4B – bulk resin for batch purification, gravity flow columns, and FPLC™
Protino® GST/4B Columns – prepacked ready-to-use FPLC™ columns

Specifications

Matrix	4 % beaded agarose
Ligand	Glutathione
Bead size	90 µm
Binding capacity*	8 mg/mL
Max linear flow rate	250 cm/h
Format	Bulk resin (75 % aqueous suspension in 20 % ethanol), ready-to-use 1 mL and 5 mL FPLC™ columns

Protino® Glutathione Agarose 4B

Application data



Protino® Glutathione Agarose 4B (MN) shows high performance and similar yield and purity comparable to Glutathione Sepharose™ 4B (GE)

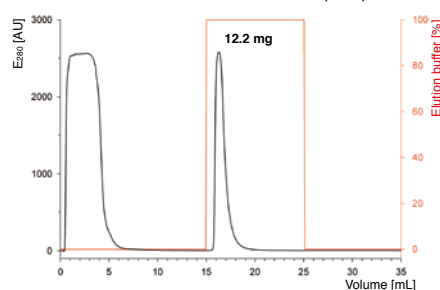
Equivalent amounts of clarified *E. coli* lysate containing GST-tagged recombinant Glutathione-S-transferase were used for the comparison.

M Marker
L Clarified *E. coli* lysate
FT Flow through
E Eluted purified Glutathione-S-transferase
MN Protino® Glutathione Agarose 4B
GE Glutathione Sepharose™ 4B

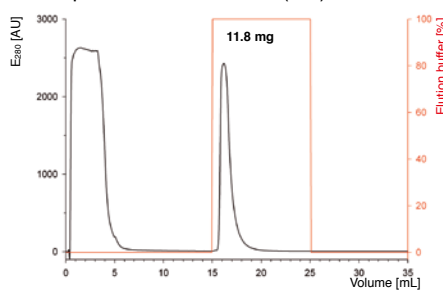
Protino® GST/4B Columns 1mL/5mL

Application data

Protino® GST/4B Columns 1 mL (MN)



GSTrap™ 4B 1 mL columns (GE)



Realizing highest standards

Protino® GST/4B Columns 1 mL show high performance for purification of recombinant Glutathione-S-Transferase on ÄKTAprime™ plus. Yield and purity are comparable to GSTrap™ 4B 1 mL columns.

Ordering information

Product	Pack of	REF
Protino® Glutathione Agarose 4B	10 mL / 100 mL	745500.10 / .100
Protino® GST/4B Columns 1 mL	5 x 1 mL	745510.5
Protino® GST/4B Columns 5 mL	1 x 5 mL / 5 x 5 mL	745515.1 / .5

*Binding capacity will vary for each GST-tagged protein

Ordering information

His-Tag purification-agarose based	Pack of	REF
Protino® Ni-NTA Agarose	25 mL / 100 mL / 500 mL	745400.25 / .100 / .500
Protino® Ni-NTA Columns 1 mL	5 x 1 mL	745410.5
Protino® Ni-NTA Columns 5 mL	1 x 5 mL / 5 x 5 mL	745415.1 / .5
Protino® 96 Ni-NTA	1 x 96 / 4 x 96	745425.1 / .4
His-Tag purification-silica based	Pack of	REF
Protino® Ni-TED Resin	5 / 30 / 120 / 600 g	745200.5 / .30 / .120 / .600
Protino® Ni-TED 150 Packed Columns	10 / 50	745100.10 / .50
Protino® Ni-TED 1000 Packed Columns	5 / 50	745110.5 / .50
Protino® Ni-TED 2000 Packed Columns	5 / 25	745120.5 / .25
Protino® Ni-IDA Resin	5 / 30 / 120 / 600 g	745210.5 / .30 / .120 / .600
Protino® Ni-IDA 150 Packed Columns	10 / 50	745150.10 / .50
Protino® Ni-IDA 1000 Packed Columns	5 / 50	745160.5 / .50
Protino® Ni-IDA 2000 Packed Columns	5 / 25	745170.5 / .25
Protino® 96 Ni-IDA	1 x 96 / 4 x 96	745300.1 / .4
GST-Tag purification	Pack of	REF
Protino® Glutathione Agarose 4B	10 mL / 100 mL	745500.10 / .100
Protino® GST/4B Columns 1 mL	5 x 1 mL	745510.5
Protino® GST/4B Columns 5 mL	1 x 5 mL / 5 x 5 mL	745515.1 / .5
Product accessories	Pack of	REF
Receiver Columns 20 µm	10 / 50 / 250	740522.10 / .50 / .250
Protino® Columns 14 mL	10	745250.10
Protino® Columns 35 mL	10	745255.10
Protino® Purification Plate	1 / 4	745426.1 / .4
Receiver Plate 10 µm	4	740989.4
NucleoVac 96 Vacuum Manifold	1	740681
NucleoVac Vacuum Regulator	1	740641
MN Shaker Frame	1	740489

Your local distributor

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