

## AFFINITY PURIFICATION

# Premade Buffer Kits, Media, and Prepacked Cartridges for Affinity Purification

- Premade buffers for easy purification of His- and GST-tagged proteins
- Prepacked cartridges for convenient purification of proteins and antibodies
- Variety of ready-to-use and activated resins for protein purification and immobilization
- Consumables applicable for instrumentation, gravity flow, syringe, and spin column purification

## Premade Consumables to Make Affinity Purification Easy

Affinity-tagged protein purification is the most common practice in any molecular biology and biochemistry lab. To achieve reproducible results with fast and easy purification procedures is a fundamental goal for researchers. Optimized buffer kits and prepacked cartridges for general recombinant protein and antibody purification can save researchers a significant amount of time and can increase experimental reproducibility due to the strict quality control they allow.

### Buffer Kits

Premade affinity buffer kits (Figure 1) are designed for affinity purification of polyhistidine (His)-tagged and GST-tagged recombinant proteins. With optional desalting and cartridge cleaning and storage buffers, these kits facilitate affinity purification using a variety of instruments, including our most recently developed Profinia™ protein purification system. These buffer kits can also be used



Fig. 1. Profinia native IMAC starter kit.

for affinity protein purification with spin columns, gravity flow columns, and syringe purification with prepacked cartridges. Table 1 lists the buffer kits available for the Profinia system and other instruments or columns (general affinity purification).

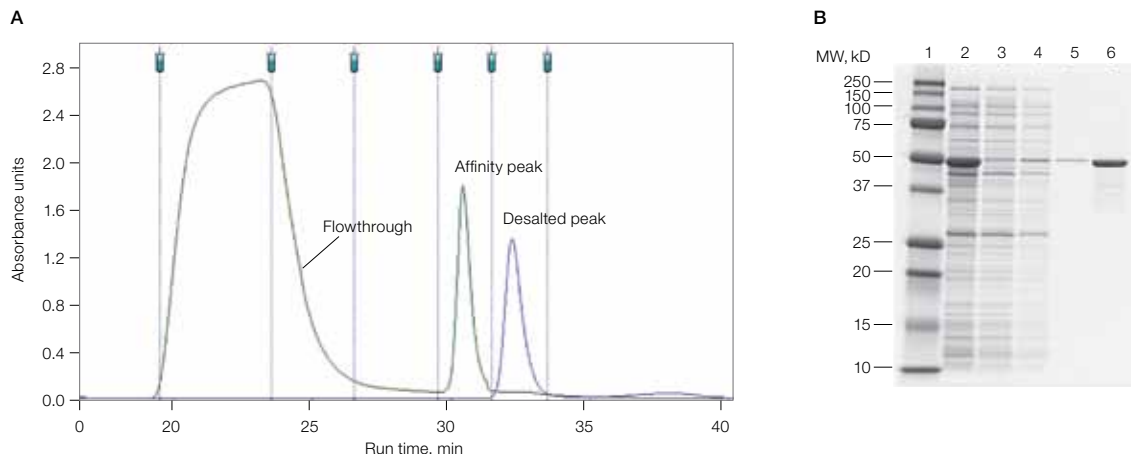
Table 1. Affinity purification kits for different applications.

General Affinity Purification	Application	Affinity Purification on the Profinia System
620-0239	IMAC with no cartridges	620-0221
620-0241 and 620-0242	IMAC with cartridges	620-0225 and 620-0235
620-0240	GST with no cartridges	620-0223
620-0243 and 620-0244	GST with cartridges	620-0226 and 620-0236
620-0224	Desalting with no cartridges	620-0224
620-0228 and 620-0238	Desalting with cartridges	620-0228 and 620-0238

Desalting and cartridge cleaning kits not included

Desalting and cartridge cleaning kits included

**BIO-RAD**



**Fig. 2. His-tagged protein purification and desalting on the Profinia protein purification system using 1 ml Bio-Scale™ Mini Profinity™ IMAC cartridge and 10 ml Bio-Scale Mini desalting cartridge. A,** chromatogram showing different fractions; **B,** SDS-PAGE analysis of different chromatographic fractions. Lane 1, Precision Plus Protein™ standards; lane 2, lysate; lane 3, flow-through fraction; lanes 4, 5, wash fractions; lane 6, elution fraction.

Three basic buffer kits are available: native IMAC buffer kit, GST buffer kit, and desalting and cartridge cleaning kit. All the other kits are configured based on these three basic kits and are available with the optional affinity and/or desalting cartridges and desalting and cartridge cleaning buffers. Figure 2 shows the results of a typical His-tagged protein purification and desalting using the Profinia native IMAC kit (with 1 ml IMAC cartridge).

### Cartridges/Columns

For economical and convenient affinity purification, prepacked IMAC, GST, and desalting cartridges are offered in the kits or for individual purchase. In addition, prepacked Affi-Gel® Blue and protein A cartridges for antibody purification are available for individual experimental design. Empty columns for custom packing of the desired resin are also offered for researchers using spin columns and gravity flow columns. All the cartridges and columns are listed in Table 2.

**Table 2. Cartridges/columns available for affinity purification.**

Description	Catalog Number	Application	For more information*
Bio-Scale Mini Profinity IMAC cartridges	732-4610 (1 ml), 732-4612 (5 ml), and 732-4614 (5 ml)	His-tagged protein purification	Manual 10005455 Bulletins 5444, 5501, and 5574
Bio-Scale Mini Profinity GST cartridges	732-4622 (5 ml) and 732-4624 (5 ml)	GST-tagged protein purification	Manual 10007406 Bulletin 5574
Bio-Scale Mini Bio-Gel® P-6 desalting cartridges	732-5304 (10 ml), 732-5312, and 732-5314 (50 ml)	Protein desalting	Manual 10006995, LIT174 Bulletin 5539
Bio-Scale Mini Affi-Gel Blue cartridges	732-4642 and 732-4644 (5 ml)	Low-cost antibody purification and removal of albumin	LIT590 Bulletin 1107
Bio-Scale Mini Affi-Prep® protein A cartridges	732-4600 (1 ml) 732-4602 (5 ml)	Antibody IgG purification	Manual 10006546, LIT79 LIT230
Bio-Scale Mini UNOsphere™ SUPra™ cartridges	732-4200 (1 ml) 732-4201 (5 ml) 732-4202 (5 ml)	High-binding capacity antibody IgG purification	Manual 10014997 Bulletin 5729
Spin columns	732-6008, 732-6025, 732-6204, and 732-6207	Spin column protein purification	LIT507 Bulletin 2289 Manual 4006051
Gravity flow columns	732-1010 (20 ml) 732-1011 (20 ml) 731-1550 (2 ml) 731-1553 (2 ml)	Gravity flow protein purification	Bulletin 2289

## Affinity Media

In addition to affinity media packed in the prepacked cartridges, different types of batch affinity media are available for spin column and gravity column packing. Tables 3–5 list the available affinity media that can be used for different aspects of affinity purification.

**Table 3. Affinity resins for IMAC and antibody purification.**

Description	Catalog Number	Application	For more information*
Profinity IMAC uncharged resins	156-0121, 156-0123, and 156-0125	His-tagged protein purification or phosphoprotein purification when charged with Ni, Co, Cu, or Ga	Manual 10001677 Bulletins 3193, 5456, 5251, and 5283
Profinity IMAC Ni-charged resins	156-0131, 156-0133, 156-0135, and 156-0137	His-tagged protein purification, ready to use	Manual 10001677 Bulletin 3193 Bulletin 5283 Bulletin 5456
Affi-Gel protein A media	153-6153, 153-6154, and 153-6161**	Antibody IgG purification with capacity of 6 to 10 mg/ml	LIT379 LIT88
Affi-Prep protein A media	156-0005 and 156-0006	Antibody IgG purification with capacity of 7 to 9 mg/ml	LIT79 LIT230
UNOsphere SUPrA media	156-0220, 156-0218, and 156-0219	Antibody purification with higher capacity of 20 to 30 mg/ml	Manual 10014430 Bulletin 5729
Affi-Gel Blue media	153-7301 and 153-7302	Albumin removal and cost-effective IgG purification	LIT590 Bulletin 1107

**Table 4. Other affinity media for purification.**

Description	Catalog Number	Application	For more information*
DEAE Affi-Gel Blue gel	153-7307	IgG purification from serum as an economic alternative to protein A	Manual 4006049
CM Affi-Gel Blue gel	153-7304	Separation of globulin from albumin	LIT308
Affi-Gel heparin gel	153-6173	Purification of nucleases, proteases, polymerase, DNA-binding proteins	LIT301
Affi-Prep polymyxin support	156-0010	Endotoxin removal	LIT280 and Bulletin 1429
Affi-Gel boronate gel	153-6103 and 153-6104	Efficient separation of small molecules such as nucleotides and nucleosides (ATP from cAMP, for instance)	Bulletin 1066

**Table 5. Affinity media for protein conjugation and affinity purification.**

Description	Catalog Number	Application	For more information*
Profinity epoxide resin	156-0200 and 156-0201	Immobilization of ligands containing nucleophiles such as amino, thiol, or hydroxyl groups	Manual 10003245
Affi-Gel 10 gel and Affi-Gel 15 media	153-6099, 153-6046, 153-1000, 153-6051, 153-6052, 153-1500, and 153-6098	Conjugation of proteins via amine groups. Affi-Gel 10 is for neutral or basic proteins while Affi-Gel 15 is for acidic proteins (pI < 6.5)	Bulletin 1085 LIT156
Affi-Gel Hz hydrazide gel	153-6047	Conjugation of IgG via the carbohydrate moieties in the Fc region	LIT101 LIT164 Bulletin 1424

\* These manuals or bulletins can be downloaded free at [www.bio-rad.com](http://www.bio-rad.com) by searching the document numbers.

\*\*Antibody purification kit that contains protein A cartridge.

## Ordering Information

Catalog #	Description	Catalog #	Description
<b>Cartridges and Columns</b>		<b>Affinity Buffers</b>	
732-4610	<b>Prepacked Bio-Scale Mini Cartridges</b> , Profinity IMAC Ni-charged resin, 5 x 1 ml	620-0239	<b>Native IMAC Buffer Kit</b> , includes native IMAC lysis, wash, and elution buffers
732-4612	<b>Prepacked Bio-Scale Mini Cartridges</b> , Profinity IMAC Ni-charged resin, 1 x 5 ml	620-0241	<b>Native IMAC Purification Kit</b> , 1 ml, includes IMAC purification buffer kit and 2 x 1 ml IMAC cartridges
732-4614	<b>Prepacked Bio-Scale Mini Cartridges</b> , Profinity IMAC Ni-charged resin, 5 x 5 ml	620-0242	<b>Native IMAC Purification Kit</b> , 5 ml, includes 2 IMAC purification buffer kits and 1 x 5 ml IMAC cartridge
732-4620	<b>Prepacked Bio-Scale Mini Cartridges</b> , Profinity GST resin, 5 x 1 ml	620-0240	<b>GST Buffer Kit</b> , includes GST lysis, wash, and elution buffers
732-4622	<b>Prepacked Bio-Scale Mini Cartridge</b> , Profinity GST resin, 1 x 5 ml	620-0243	<b>GST Purification Kit</b> , 1 ml, includes GST purification buffer kit and 2 x 1 ml GST cartridges
732-4624	<b>Prepacked Bio-Scale Mini Cartridge</b> , Profinity GST resin, 5 x 5 ml	620-0244	<b>GST Purification Kit</b> , 5 ml, includes 2 GST purification buffer kits and 1 x 5 ml GST cartridge
732-5304	<b>Bio-Gel P-6 Media</b> , 10 ml, pack of 5	620-0224	<b>Desalting and Cartridge Cleaning Buffer Kit</b> , includes desalting buffer, cleaning buffers, and cartridge storage buffer
732-5312	<b>Bio-Gel P-6 Media</b> , 50 ml	620-0228	<b>Profinia Desalting Purification Kit</b> , 10 ml, includes desalting and cartridge cleaning buffer kit, 2 x 10 ml desalting cartridges
732-5314	<b>Bio-Gel P-6 Media</b> , 50 ml, pack of 5	620-0238	<b>Profinia Desalting Purification Kit</b> , 50 ml, includes 2 desalting and cartridge cleaning buffer kits, 1 x 50 ml desalting cartridge
732-4642	<b>Prepacked Bio-Scale Mini Cartridge</b> , Affi-Gel Blue media, 1 x 5 ml	620-0221	<b>Profinia Native IMAC Buffer Kit</b> , includes lysis, wash, and elution buffers, cleaning and storage solutions; sufficient for 10 applications
732-4644	<b>Prepacked Bio-Scale Mini Cartridges</b> , Affi-Gel Blue media, 5 x 5 ml	620-0225	<b>Profinia Native IMAC Purification Kit</b> , 1 ml, includes Profinia native IMAC buffer kit, 2 x 1 ml IMAC and 2 x 10 ml desalting cartridges
732-4600	<b>Prepacked Bio-Scale Mini Cartridges</b> , Affi-Prep protein A media, 5 x 1 ml	620-0235	<b>Profinia Native IMAC Purification Kit</b> , 5 ml, includes 2 Profinia native IMAC buffer kits, 1 x 5 ml IMAC and 1 x 50 ml desalting cartridge
732-4602	<b>Prepacked Bio-Scale Mini Cartridge</b> , Affi-Prep protein A media, 1 x 5 ml	620-0223	<b>Profinia GST Buffer Kit</b> , includes lysis, wash, and elution buffers, cleaning and storage solutions, glutathione reagent; sufficient for 10 applications
732-4200	<b>Prepacked Bio-Scale Mini Cartridge</b> , UNOsphere SUPrA affinity media, 1 x 1 ml	620-0226	<b>Profinia GST Purification Kit</b> , 1 ml, includes Profinia GST buffer kit, 2 x 1 ml GST and 2 x 10 ml desalting cartridges
732-4201	<b>Prepacked Bio-Scale Mini Cartridge</b> , UNOsphere SUPrA affinity media, 5 x 1 ml	620-0236	<b>Profinia GST Purification Kit</b> , 5 ml, includes 2 Profinia GST buffer kits, 1 x 5 ml GST and 1 x 50 ml desalting cartridge
732-4202	<b>Prepacked Bio-Scale Mini Cartridge</b> , UNOsphere SUPrA affinity media, 1 x 5 ml	<b>Other Affinity Media</b>	
732-6008	<b>Bio-Spin Chromatography Columns</b> , empty, 100	153-1000	<b>Affi-Gel 10 Media</b> , 1 L
732-6025	<b>Bio-Spin Chromatography Columns</b> , empty, 1,000	153-1500	<b>Affi-Gel 15 Media</b> , 1 L
732-6204	<b>Micro Bio-Spin Chromatography Columns</b> , empty, 100	153-6099	<b>Affi-Gel 10 Media</b> , 25 ml
732-6207	<b>Mini Micro Bio-Spin Chromatography Columns</b> , empty, 100	153-6046	<b>Affi-Gel 10 Media</b> , 4 x 25 ml
732-1010	<b>Econo-Pac Chromatography Columns</b> , empty, includes upper bed supports, end caps, tip closures, 50	153-6047	<b>Affi-Gel Hz Hydrazide Media</b> , 25 ml
732-1011	<b>Econo-Pac Chromatography Columns</b> , empty, includes upper bed supports, end caps, tip closures, 500	153-6051	<b>Affi-Gel 15 Media</b> , 25 ml
732-1550	<b>Poly-Prep Chromatography Columns</b> , empty, includes end caps and tip closures, 50	153-6052	<b>Affi-Gel 15 Media</b> , 4 x 25 ml
732-1553	<b>Poly-Prep Chromatography Columns</b> , empty, includes end caps and tip closures, 1,000	153-6098	<b>Affi-Gel 10/15 Combination</b> , includes 2 x 25 ml Affi-Gel 10 media and 2 x 25 ml Affi-Gel 15 media
<b>Affinity Media</b>		153-6103	<b>Affi-Gel Boronate Media</b> , 5 g
156-0121	<b>Profinity IMAC Uncharged Resin</b> , 10 ml	153-6104	<b>Affi-Gel Boronate Media</b> , 50 g
156-0123	<b>Profinity IMAC Uncharged Resin</b> , 50 ml	153-6173	<b>Affi-Gel Heparin Media</b> , 40 ml
156-0125	<b>Profinity IMAC Uncharged Resin</b> , 500 ml	156-0010	<b>Affi-Prep Polymyxin Media</b> , 25 ml
156-0131	<b>Profinity IMAC Ni-Charged Resin</b> , 10 ml	156-0200	<b>Profinity Epoxide Media</b> , 5 g
156-0133	<b>Profinity IMAC Ni-Charged Resin</b> , 25 ml	156-0201	<b>Profinity Epoxide Media</b> , 25 g
156-0135	<b>Profinity IMAC Ni-Charged Resin</b> , 100 ml	153-7304	<b>CM Affi-Gel Blue Media</b> , 100 ml
156-0137	<b>Profinity IMAC Ni-Charged Resin</b> , 500 ml	153-7307	<b>DEAE Affi-Gel Blue Media</b> , 100 ml
153-6153	<b>Affi-Gel Protein A Media</b> , 5 ml	Expression and purification of GST fusion proteins may require a license under U.S. Patent Number 5,654,176 (assignee: Chemicon International).	
153-6154	<b>Affi-Gel Protein A Media</b> , 50 ml		
153-6161	<b>Protein A MAPS II Binding Buffer</b> , makes 5 L		
156-0005	<b>Affi-Prep Protein A Media</b> , 25 ml		
156-0006	<b>Affi-Prep Protein A Media</b> , 5 ml		
156-0220	<b>UNOsphere SUPrA Affinity Media</b> , 500 ml		
156-0218	<b>UNOsphere SUPrA Affinity Media</b> , 25 ml		
156-0219	<b>UNOsphere SUPrA Affinity Media</b> , 100 ml		
153-7301	<b>Affi-Gel Blue Media</b> , 100 ml, 50–100 mesh		
153-7302	<b>Affi-Gel Blue Media</b> , 100 ml, 100–200 mesh		



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