SMART LIFESCIENCES

PRODUCT BROCHURE

Professional Manufacturer
of Chromatography Resins

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2026.02

COMPANY PROFILE

Changzhou Smart-Lifesciences Biotechnology Co., Ltd., established in 2013 and affiliated with Changzhou Boyi Bio Group, is a high-tech enterprise focusing on the development and production of high-quality biological purification products. Our main offerings include chromatography resins, automated purification instruments, and supporting consumables. Adhering to the "Quality First" principle, the company has passed ISO9001 quality management system certification. Its mature production processes and standardized quality inspection systems ensure data reliability and stable quality, providing a guarantee for the safety and stability of product applications, and meeting the batch and quality requirements of industrial customers. The company's advanced technology also enables us to provide customers with professional technical support and process development services.

3,000+(L)
Maximum Single Batch

34+(PEC)
Patents

2,500+(CNT)
Partner Biopharmaceutical Enterprises

20+(YRS)
Development Experience

Our products have been widely used in the following fields:

- Antibody Drugs
- Polypeptide
- Recombinant Protein
- Gene Therapy
- Blood Products
- Vaccine
- API

STABLE SUPPLY

Single-batch capacity up to ton-scale ensures continuous and reliable supply chain operations.

QUALITY ASSURANCE

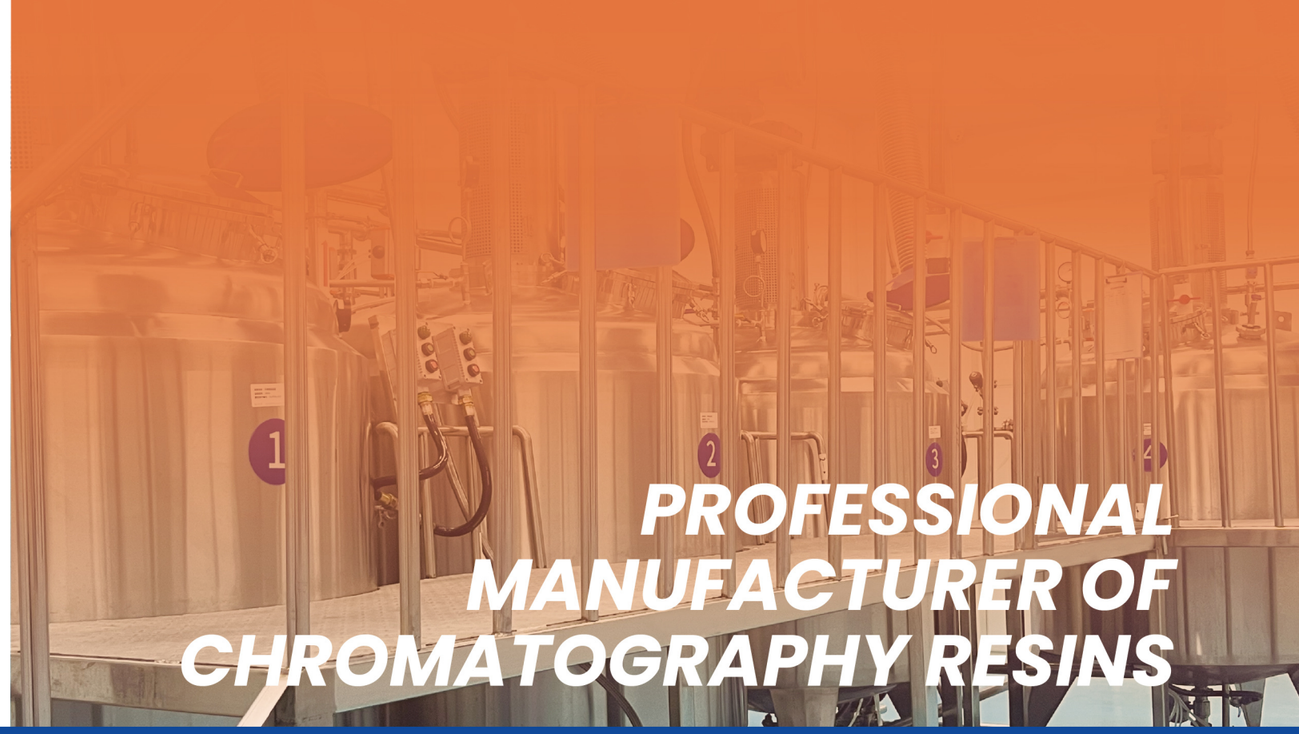
Certified under ISO9001:2015 quality management system, ensuring process safety and regulatory compliance.

EXPERT TEAM

Capable of meeting diverse microsphere customization needs, providing technical support for process development and validation.

PROCESS SUPPORT

Dedicated after-sales service team committed to safeguarding your production processes.



PROFESSIONAL MANUFACTURER OF CHROMATOGRAPHY RESINS

QUALITY SYSTEM CERTIFICATE

BTCC-QMS

Beijing Tianyizheng Certification Center Limited Company

(Room 506, Floor 5, Building1, No. 98 and No. 98, Beilishi Road, Xicheng District, Beijing city)

CERTIFICATE OF CONFORMITY OF QUALITY MANAGEMENT SYSTEM CERTIFICATION

Certificate No. 02622Q31108R1M

Unified Social Credit Code: 91320411072778 17X6

This is to certify that the quality management system of

CHANG ZHOU SMART-LIFESCIENCES BIOTECHNOLOGY CO., LTD.

Registered Address:No.4, Research and Development Workshop, No.8, Lanxiang Road, West Taihu Science and Technology Industrial Park, Changzhou City, Jiangsu Province

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is in conformity with

GB/T 19001-2016 / ISO 9001:2015 standard

This certificate is valid to the following scope:

The R&D, Production of Protein Purification Medium and Reagent.

General manager:

Issue Date: Sep.19,2022
Expiry Date: Sep.26,2025
First Issue Date: Sep. 27, 2016

BTCC

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国际互认
管理体系
MANAGEMENT SYSTEM
CNAS C026-M

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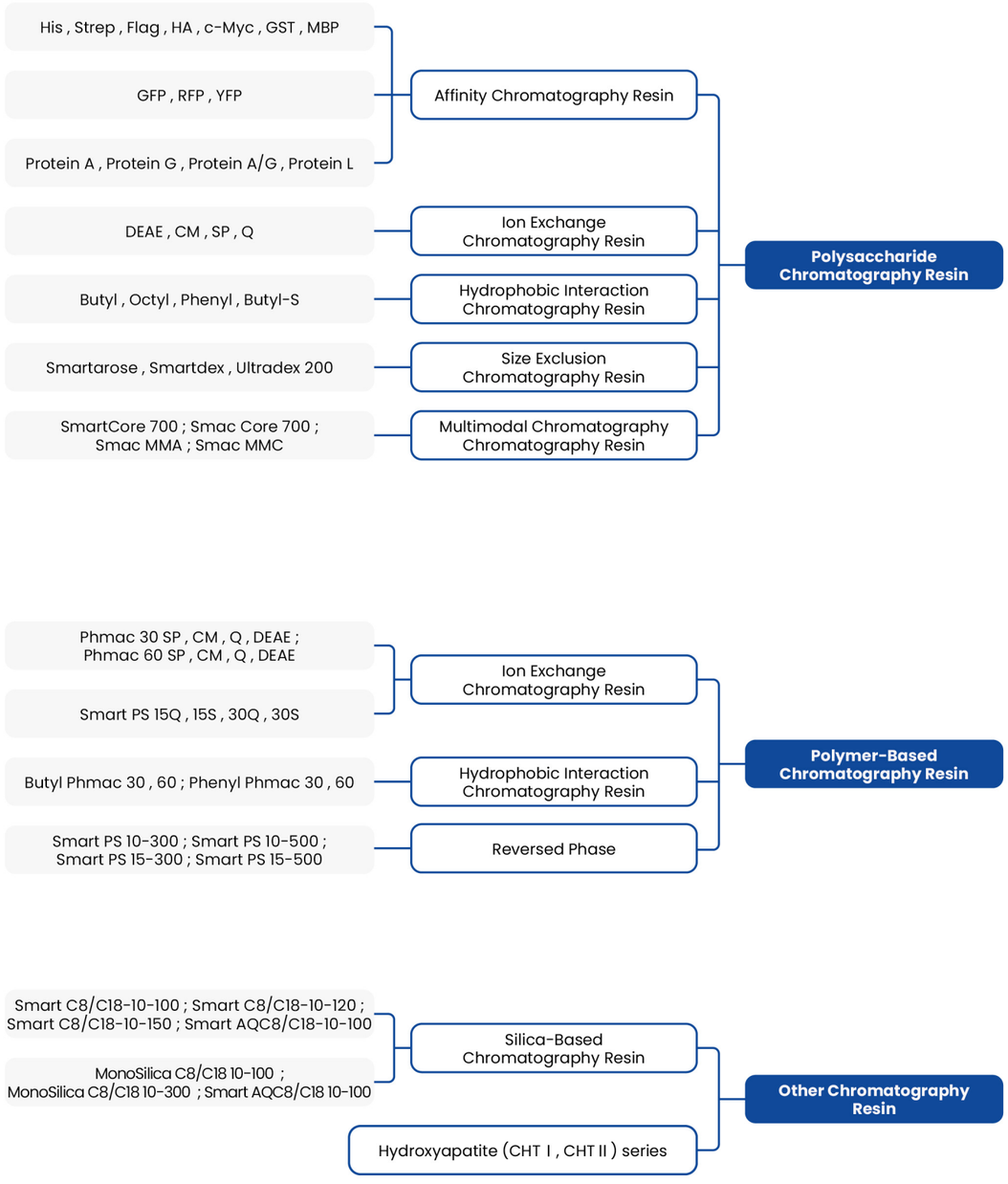
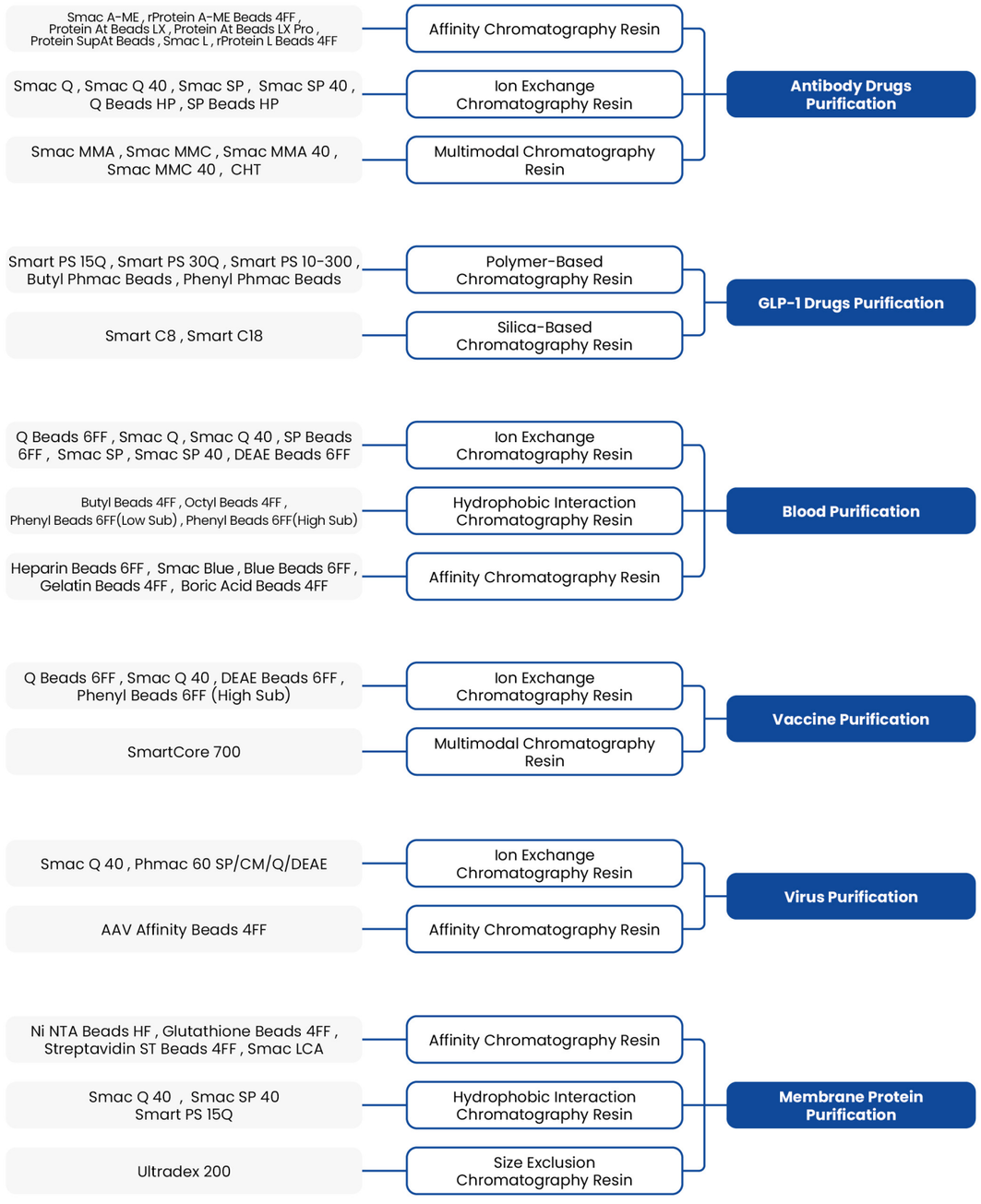


Chromatography Resin Selection Guide



Polysaccharide Chromatography Resin

Affinity Chromatography Resin

Ion Exchange Chromatography Resin

Hydrophobic Interaction Chromatography Resin

Size Exclusion Chromatography Resin

Multimodal Chromatography purification resin

01

1.1 Affinity Chromatography Resin

Histidine-tagged protein affinity purification resin

Immobilized metal ion affinity chromatography (IMAC) is widely used in the purification of proteins and peptides. This technique relies on the specific interaction between transition metal ions and certain amino acid chains, such as histidine, tryptophan, and L-cysteine, that are exposed on the protein surface. IMAC media are particularly effective in separating proteins containing histidine residues. Key features of IMAC include high binding capacity, excellent stability, mild separation conditions, and the ability to quickly and reliably scale up the purification of His-tagged proteins. In recent years, IMAC has gained popularity for purifying histidine-tagged proteins expressed in various systems, including E. coli., yeast, insect cells, and mammalian cells.

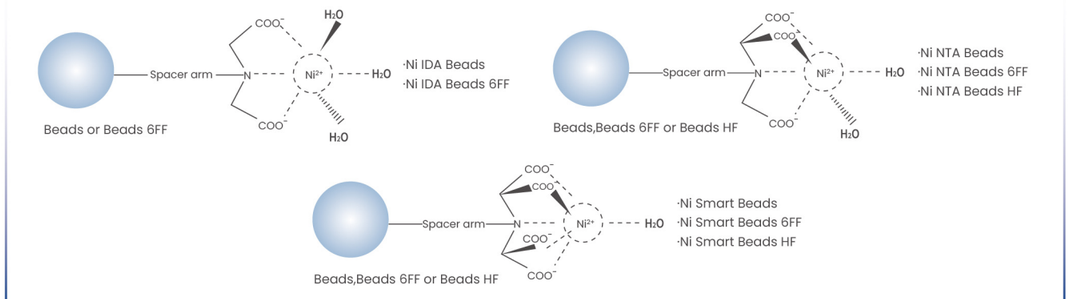


Fig. 1-1 Schematic diagram of ligand of IMAC medium.

IDA

Ni IDA Beads and Ni IDA Beads 6FF are coupled with iminodiacetic acid (IDA), forming a stable planar quadrilateral structure after chelating with precharged nickel ions; this structure can be easily disrupted by competitive small molecules. The Ni-IDA structure provides multiple binding sites for histidine-tagged proteins. Ni IDA Beads 6FF offers advantages in terms of higher binding capacity and cost-effectiveness, along with excellent flow properties that facilitate scaling up.

Product Information

Products	Cat.No.	Size	Applications
Ni IDA Beads	SA003005	5ml	Ni IDA Beads and 6FF are cost-effective products for purifying polyhistidine-tagged proteins and are recommended for the purification of soluble protein extracts.
	SA003025	25ml	
	SA003100	100ml	
	SA003500	500ml	
	SA00301L	1L	
	SA00310L	10L	
Ni IDA Beads 6FF	SA052005	5ml	
	SA052025	25ml	
	SA052100	100ml	
	SA052500	500ml	
	SA05201L	1L	
	SA05210L	10L	
HisCap IDA 6FF	SA052C11	1×1ml	
	SA052C15	1×5ml	
	SA052C51	5×1ml	
	SA052C55	5×5ml	
	SA052CS	3×1ml+1×5ml	

NTA

Ni NTA Beads,Ni NTA Beads 6FF,Ni NTA Beads HF utilize nitilotriacetic acid (NTA) as the ligand. Nickel ions (Ni^{2+}) are chelated to this group, resulting in a stable octahedral structure that protects the nickel ions from competitive small molecule interference. The Ni-NTA structure is compatible with certain concentrations of reducing agents, denaturing agents, detergents, and other additives.

Product Information

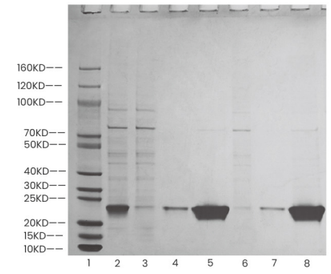
Products	Cat.No	Size	Applications
Ni NTA Beads	SA004005	5ml	Ni NTA Beads can be used in the purification of polyhistidine-tagged inclusion bodies and soluble proteins. It can withstand more severe chemical reagents and has a wider range of applications.
	SA004025	25ml	
	SA004100	100ml	
	SA004500	500ml	
	SA00401L	1L	
	SA00410L	10L	
Ni NTA Beads Gravity Column	SA004GC01	1ml	
	SA004GC05	5ml	
HisPur Ni NTA Kit	SA004K03	3T	It is cost-effective products for purifying His-tagged proteins, offering simple operation and high purification efficiency.
HisPur Ni NTA Buffer Kit	SA004KB03	3T	
Ni NTA Beads 6FF	SA005005	5ml	Ni NTA Beads 6FF is compatible with both native and denaturing conditions, making it suitable for purifying polyhistidine-tagged inclusion bodies and soluble proteins. Its high flow properties make it excellent for scaling-up.
	SA005025	25ml	
	SA005100	100ml	
	SA005500	500ml	
	SA00501L	1L	
	SA00510L	10L	
Ni NTA Beads 6FF Gravity Column	SA005GC01	1ml	
	SA005GC05	5ml	
HisCap 6FF	SA005C11	1×1ml	
	SA005C51	5×1ml	
	SA005C15	1×5ml	
	SA005C55	5×5ml	
	SA005CS	3×1ml+1×5ml	
HiSelect Ni 6FF	SA005C47	4.7ml,1pcs	
HiPur Ni 6FF	SA005C20	20ml,1pcs	
Ni NTA Beads HF	SA101005	5ml	It can be used in the purification of polyhistidine-tagged inclusion bodies and soluble proteins. Highly rigid agarose microspheres withstand elevated flow rates and deliver enhanced chemical stability.
	SA101025	25ml	
	SA101100	100ml	
	SA101500	500ml	
	SA10101L	1L	
	SA10110L	10L	
Ni NTA Beads HF Gravity Column	SA100GC01	1ml	
	SA100GC05	5ml	
HisCap NTA Beads HF	SA101C11	1×1ml	
	SA101C51	5×1ml	
	SA101C15	1×5ml	
	SA101C55	5×5ml	
HiSelect Ni HF	SA101C47	4.7ml,1pcs	
HiPur Ni HF	SA101C20	20ml,1pcs	

Smart

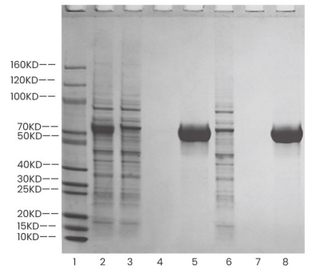
Ni Smart Beads,Ni Smart Beads 6FF and Ni Smart Beads HF are novel immobilized metal ion affinity chromatography (IMAC) media precharged with nickel ions, specifically designed for the capture and purification of histidine-tagged proteins secreted into eukaryotic cell culture supernatants. The robust nickel ion binding provides exceptional resistance to EDTA and reducing agents such as DTT, allowing for the direct loading of large sample volumes without the need to remove agents that typically strip nickel ions from conventional IMAC media. Ni Smart Beads 6FF are stable in all buffers commonly used in IMAC; refer to Table 1-2 for information on reagent tolerance.

Example: Ni Smart Beads 6FF

Ni Smart Beads 6FF can be directly utilized for the capture and purification of 6×His-tagged proteins expressed by mammalian cells, without the need to change the solution or concentrate the cellular supernatant.



Line 1: Protein Marker
Line 2: load
Line 3-5: Flow through,wash and 250mM Imidazole elution of C-company
Line 6-8: Flow through,wash and 250mM Imidazole elution of Ni Smart Beads 6FF



Line 1: Protein Marker
Line 2: load
Line 3-5: Flow through,wash and 250mM Imidazole elution of C-company
Line 6-8: Flow through,wash and 250mM Imidazole elution of Ni Smart Beads 6FF

Fig.1-2 Purification of 6×His tagged protein expressed by mammalian cells.

His-tag usually consists of 6-10 consecutive histidine residues. The structure of the tag (including its position, sequence and length) can affect various aspects of protein production, such as expression levels, three-dimensional structure, crystallization, and binding capacity.

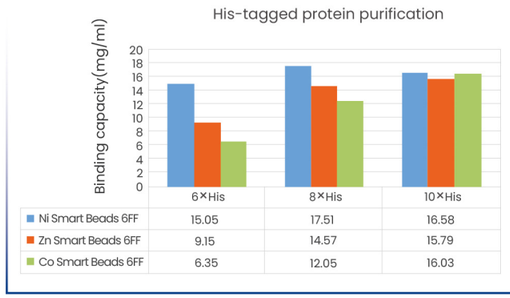
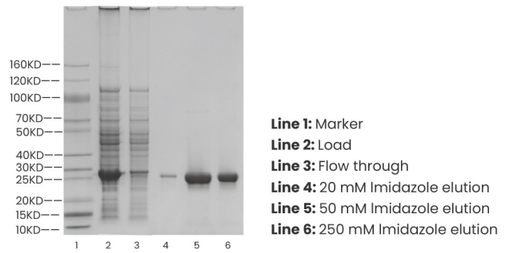


Fig.1-3 Purification Results of Proteins with Different His-Tags



Line 1: Marker
Line 2: Load
Line 3: Flow through
Line 4: 20 mM Imidazole elution
Line 5: 50 mM Imidazole elution
Line 6: 250 mM Imidazole elution

Fig.1-4 SDS-PAGE Analysis of 6×His-Tagged Protein Purification

Product Information

Products	Cat.No	Size	Applications
Ni Smart Beads	SA035005	5ml	Ni Smart Beads and 6FF offer exceptional resistance to a wide range of chemicals, making them suitable for protein environments with high concentrations of reducing and chelating agents. They are especially effective in purification systems for proteins expressed in eukaryotic systems.
	SA035025	25ml	
	SA035100	100ml	
	SA035500	500ml	
	SA03501L	1L	
	SA03510L	10L	
Ni Smart Beads Gravity Column	SA035GC01	1ml	
	SA035GC05	5ml	
Ni Smart Beads 6FF	SA036005	5ml	
	SA036025	25ml	
	SA036100	100ml	
	SA036500	500ml	
	SA03601L	1L	
	SA03610L	10L	
Ni Smart Beads 6FF Gravity Column	SA036GC01	1ml	
	SA036GC05	5ml	
HisCap Smart 6FF	SA036C11	1×1ml	
	SA036C51	5×1ml	
	SA036C15	1×5ml	
	SA036C55	5×5ml	
	SA036CS	3×1ml+1×5ml	
HiSelect Ni Smart	SA036C47	4.7ml,1pcs	
HiPur Ni Smart	SA036C20	20ml,1pcs	
Ni Smart Beads HF	SA110005	5ml	It offer exceptional resistance to a wide range of chemicals, making them suitable for protein environments with high concentrations of reducing and chelating agents. They are especially effective in purification systems for proteins expressed in eukaryotic systems.Highly rigid agarose microspheres withstand elevated flow rates and deliver enhanced chemical stability.
	SA110025	25ml	
	SA110100	100ml	
	SA110500	500ml	
	SA11001L	1L	
	SA11010L	10L	
Ni Smart Beads HF Gravity Column	SA110GC01	1ml	
	SA110GC05	5ml	
HisCap Smart Beads HF	SA110C11	1×1ml	
	SA110C51	5×1ml	
	SA110C15	1×5ml	
	SA110C55	5×5ml	
HiSelect Ni HF	SA110C47	4.7ml,1pcs	
HiPur Ni Smart HF	SA110C20	20ml,1pcs	
HiPur Ni Smart Kit	SA110K	5T	

Other metal ion chelating affinity purification resin

Chelating Beads 6FF and IMAC Beads 6FF are highly cross-linked 6% agarose beads functionalized with IDA and NTA ligands, enabling them to chelate various metal ions, such as Cu^{2+}, Zn^{2+}, Co^{2+}, Ni^{2+}, and Fe^{3+}. When choosing the desired metal ion, it is important to consider the structural requirements for optimal metal chelate-protein binding. The binding affinity to polyhistidine tags generally follows the order: Cu^{2+} > Ni^{2+} > Zn^{2+} > Co^{2+}. Typically, Cu^{2+} binds strongly to histidine-tagged proteins and is effective for purifying proteins with weaker interactions, while Co^{2+} provides greater specificity for histidine tags, yielding higher-purity samples.

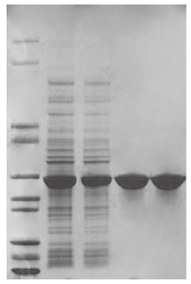
Product Information

Products	Cat.No	Size	Applications
Cu IDA Beads	SA041005	5ml	Cu IDA Beads are beads with an average particle size of 90 μm coupled with IDA ligands. The medium precharged with Cu^{2+} ions.
	SA041025	25ml	
	SA041100	100ml	
	SA041500	500ml	
	SA04101L	1L	
	SA04110L	10L	
Cu IDA Beads Gravity Column	SA041GC01	1ml	
	SA041GC05	5ml	
Zn IDA Beads	SA080005	5ml	Zn IDA Beads are beads with an average particle size of 90 μm coupled with IDA ligands. The medium precharged with Zn^{2+}.
	SA080025	25ml	
	SA080100	100ml	
	SA080500	500ml	
	SA08001L	1L	
	SA08010L	10L	
Co NTA Beads	SA037005	5ml	Co NTA Beads are beads with an average particle size of 90 μm coupled with NTA ligands. The medium is precharged with Co^{2+} ions.
	SA037025	25ml	
	SA037100	100ml	
	SA037500	500ml	
	SA03701L	1L	
	SA03710L	10L	
Co NTA Beads Gravity Column	SA037GC01	1ml	
	SA037GC05	5ml	
Co NTA Beads 6FF	SA038005	5ml	Co NTA Beads 6FF is compatible with both native and denaturing conditions, making them suitable for the purification of polyhistidine-tagged inclusion bodies as well as soluble proteins. Its high flow properties make it excellent for scaling-up.
	SA038025	25ml	
	SA038100	100ml	
	SA038500	500ml	
	SA03801L	1L	
	SA03810L	10L	
Co NTA Beads 6FF Gravity Column	SA038GC01	1ml	
	SA038GC05	5ml	
HisCap Co 6FF	SA038C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA038C51	5×1ml	
	SA038C15	1×5ml	
	SA038C55	5×5ml	
	SA038CS	3×1ml+1×5ml	
HiSelect Co 6FF	SA038C47	4.7ml,1pcs	
HiPur Co 6FF	SA038C20	20ml,1pcs	
IMAC Beads 6FF	SA050005	5ml	IMAC Beads 6FF is the medium without chelating metal ion and its ligand is NTA. It is compatible with a certain concentration of reducing agents, denaturing agents, detergents and other additives.
	SA050025	25ml	
	SA050100	100ml	
	SA050500	500ml	
	SA05001L	1L	
	SA05010L	10L	
Chelating Beads 6FF	SA051005	5ml	Chelating Beads 6FF is the medium without chelating metal ion and its ligand is IDA.
	SA051025	25ml	
	SA051100	100ml	
	SA051500	500ml	
	SA05101L	1L	
	SA05110L	10L	

GST fusion protein affinity purification resin

Glutathione Beads and Glutathione Beads 4FF are affinity chromatography media designed for the purification of glutathione S-transferase (GST), glutathione-dependent proteins, and GST fusion proteins expressed in various systems. The reduced glutathione ligand is coupled to agarose beads via a 12-atom linker, which is optimized to achieve a high binding capacity for GST fusion proteins. Glutathione Beads 4FF can be utilized in fast protein liquid chromatography (FPLC) and is easy to pack and use, with high flow properties that facilitate scale-up. The GST Pur Glutathione Kit is designed for the one-step purification of GST fusion proteins and consists of a prepacked column and ready-to-use buffer. This kit eliminates the need for time-consuming buffer preparation, thus promoting rapid and convenient purification of the target protein from complex samples.

Example: Glutathione Beads



Name: Glutathione Beads

Sample: GST fusion protein

Binding Buffer: 140mM NaCl,2.7mM KCl, 10mM Na_2HPO_4,1.8mM KH_2PO_4,pH7.4

Elution Buffer: 50mM Tris-HCl, 10mM reduced glutathione, pH8.0

Line 1: Lysate

Line 2: Flow through

Line 3: Elution 1

Line 4: Elution 2

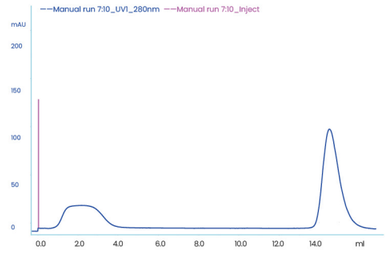


Fig. 1-5 SDS-PAGE analysis of purification of GST fusion protein.

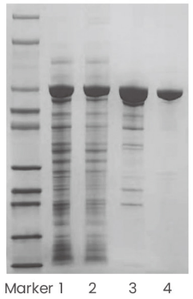
Product Information

Products	Cat.No.	Size	Applications
Glutathione Beads	SA008005	5ml	Glutathione Beads offer a high binding capacity for GST fusion proteins and are recommended for laboratory-scale
	SA008025	25ml	
	SA008100	100ml	
	SA008500	500ml	
	SA00801L	1L	
	SA00810L	10L	
Glutathione Beads Gravity Column	SA008GC01	1ml	
	SA008GC05	5ml	
GSTPur Glutathione Kit	SA008K03	3T	The GST fusion protein purification kit offers simple operation and high purification efficiency.
	SA008K05	5T	
GSTPur Glutathione Buffer Kit	SA008KB03	3T	
	SA008KB05	5T	
Glutathione Beads 4FF	SA010005	5ml	Glutathione Beads 4FF can be used in purification systems and is easy to pack and use. Its high flow properties make it excellent for scaling-up.
	SA010025	25ml	
	SA010100	100ml	
	SA010500	500ml	
	SA01001L	1L	
	SA01010L	10L	
Glutathione Beads 4FF Gravity Column	SA010GC01	1ml	
	SA010GC05	5ml	
GSTCap 4FF	SA010C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA010C51	5×1ml	
	SA010C15	1×5ml	
	SA010C55	5×5ml	
	SA010CS	3×1ml+1×5ml	
HiSelect Glutathione 4FF	SA010C47	4.7ml,1pcs	
HiPur Glutathione 4FF	SA010C20	20ml,1pcs	

MBP fusion protein affinity purification resin

Maltose-binding protein (MBP) is a 42 kDa tag that enhances the soluble expression of target proteins, promoting correct folding and increasing expression levels. Dextrin Beads 6FF serves as an affinity chromatography medium for purifying MBP fusion proteins, enabling one-step purification. Bound fusion proteins can be gently eluted with 10 mM maltose to maintain the target protein's activity. MBP can be removed from the fusion protein using site-specific protease.

Example: Dextrin Beads 6FF



Medium: Dextrin Beads 6FF

Sample: MBP fusion protein in E. coli lysate

Binding Buffer: 20mM Tris-HCl, 200mM Nacl, 1mM EDTA, pH7.4

Elution Buffer: 20mM Tris-HCl, 1mM EDTA, 10mM Maltose, pH7.4

Line 1: Sample

Line 2: Flow through

Line 3: Elution 1

Line 4: Elution 2

Fig. 1-6 SDS-PAGE analysis of purification of MBP fusion protein.

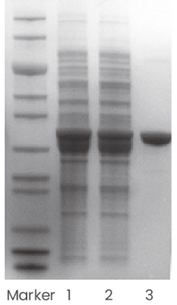
Product Information

Products	Cat.No.	Size	Applications
Dextrin Beads	SA077005	5ml	Dextrin Beads are suitable for purifying MBP and MBP fusion proteins, offering high purity and strong binding capacity for the target protein.
	SA077025	25ml	
	SA077100	100ml	
	SA077500	500ml	
	SA07701L	1L	
	SA07710L	10L	
Dextrin Beads Gravity Column	SA077GC01	1ml	
	SA077GC05	5ml	
Dextrin Beads 6FF	SA026005	5ml	Its high flow properties make it excellent for scaling-up.
	SA026025	25ml	
	SA026100	100ml	
	SA026500	500ml	
	SA02601L	1L	
	SA02610L	10L	
Dextrin Beads 6FF Gravity Column	SA026GC01	1ml	
	SA026GC05	5ml	
PreCap Dextrin	SA026C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems.
	SA026C51	5×1ml	
	SA026C15	1×5ml	
	SA026C55	5×5ml	
	SA026CS	3×1ml+1×5ml	
HiSelect Dextrin 6FF HiPur	SA026C47	4.7ml,1pcs	
Dextrin 6FF	SA026C20	20ml,1pcs	

Biotin-tagged protein affinity purification resin

Streptavidin Beads 6FF is an affinity chromatography medium used for biotin-streptavidin interactions. The interaction between streptavidin and biotin is extremely strong, requiring denaturing conditions for elution, which can damage both the ligand and the sample. However, the weaker interaction between 2-iminobiotin and streptavidin allows for elution at pH 4.0, preserving biomolecular activity. The crosslinking of the base matrix has been optimized to ensure high physical and chemical stability, making it suitable for cost-effective, large-scale applications.

Example: Streptavidin Beads 6FF



Medium: Streptavidin Beads 6FF

Sample: 2-iminobiotinylated protein

Binding/Washing: 50mM boric acid, 0.5M NaCl, pH10.0

Elution Buffer: 50mM sodium acetate, 0.5M NaCl, pH4.0

Line 1: Sample

Line 2: Flow through

Line 3: Elution

Fig. 1-7 SDS-PAGE analysis of purification of iminobiotinylated protein.

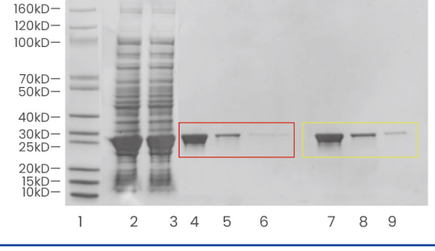
Product Information

Products	Cat.No.	Size	Applications
Streptavidin Beads 6FF	SA021005	5ml	Streptavidin Beads 6FF can be used for the immobilization or detection of biotinylated nucleotides, peptides, proteins, and cells.
	SA021025	25ml	
	SA021100	100ml	
	SA021500	500ml	
	SA02101L	1L	
	SA02110L	10L	
Streptavidin Beads 6FF Gravity Column	SA021GC01	1ml	
	SA021GC05	5ml	
PreCap Streptavidin	SA021C11	1×1ml	PreCap Streptavidin columns have the standard interface and can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA021C51	5×1ml	
	SA021C15	1×5ml	
	SA021C55	5×5ml	
	SA021CS	3×1ml+1×5ml	
HiSelect Streptavidin 6FF	SA021C47	4.7ml,1pcs	
HiPur Streptavidin 6FF	SA021C20	20ml,1pcs	

Strep-tag II fusion protein affinity purification resin

Streptavidin ST Beads 4FF is a chromatography medium designed for one-step purification of Strep-tag II fusion proteins from various expression systems. The Strep-tag II is an eight-amino acid peptide (Trp-Ser-His-Pro-Gln-Phe-Glu-Lys) , which don't need to be removed due to their minimal effect on fusion proteins. The Streptactin ligand, immobilized on highly cross-linked 4% agarose, is a specially recombinant protein with a binding affinity for Strep-tag II that exceeds that of streptavidin. Purification occurs under physiological conditions, and mild elution preserves the target protein's activity.

Example: STarm Beads 4FF



1.Marker
2.Load(5μl)
3.Flow through(5μl)
4.5 mM 1st Elution (5 μL)
5.5 mM 2nd Elution (5 μL)
6.5 mM 3rd Elution (5 μL)
7.1 mM 1st Elution (5 μL)
8.1 mM 2nd Elution (5 μL)
9.1 mM 3rd Elution (5 μL)

Conclusion:

- 1 mM D-Biotin (yellow box): Effective elution
- 5 mM D-Biotin (red box): Superior elution efficiency

Fig. 1-8 Effect of Biotin Concentration on Elution Efficiency of STarm Beads 4FF

Product Information

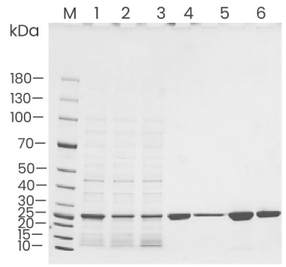
Products	Cat.No.	Size	Applications
Streptavidin ST Beads 4FF	SA053005	5ml	Streptactin Beads 4FF is a chromatography medium for one-step purifying Strep-tag II fusion proteins.
	SA053025	25ml	
	SA053100	100ml	
	SA053500	500ml	
	SA05301L	1L	
	SA05310L	10L	
PreCap Streptavidin ST	SA053C11	1×1ml	
	SA053C51	5×1ml	
	SA053C15	1×5ml	
	SA053C55	5×5ml	
	SA053CS	3×1ml+1×5ml	
HiSelect Streptavidin ST 4FF	SA053C47	4.7ml,1pcs	
HiPur Streptavidin ST 4FF	SA053C20	20ml,1pcs	
STarm Beads 4FF	SA092005	5ml	STarm Streptactin Beads 4FF is uniquely designed to purify Strep-tag II or Twin Strep-Tag II tagged proteins. These beads are widely used for high load and gentle regeneration conditions.It can be reused for many times and has stronger tolerance.
	SA092025	25ml	
	SA092100	100ml	
	SA092500	500ml	
	SA09201L	1L	
	SA09210L	10L	
PreCap STarm	SA092C11	1×1ml	
	SA092C51	5×1ml	
	SA092C15	1×5ml	
	SA092C55	5×5ml	
	SA092CS	3×1ml+1×5ml	
HiSelect STarm 4FF HiPur	SA092C47	4.7ml,1pcs	
STarm 4FF	SA092C20	20ml,1pcs	

DYKDDDDK-tagged protein affinity purification resin

Anti-DYKDDDDK Affinity Beads is used for the one-step purification of DYKDDDDK (Flag)-tagged proteins expressed in prokaryotic, yeast, or mammalian cells. The Flag sequence consists of eight hydrophilic amino acids and can be removed by enterokinase. The medium is capable of binding the Flag tag at the N-terminal and C-terminal of the fusion protein. The ligand of the medium is an anti-DYKDDDDK antibody that is covalently coupled to 4% agarose beads. Anti-DYKDDDDK Affinity Beads exhibit high specificity for the fusion protein and can be used for both purification and immunoprecipitation (IP) of Flag-tagged proteins.

Example: Anti-DYKDDDDK HC Affinity Beads

1)Prokaryotic Protein Purification :



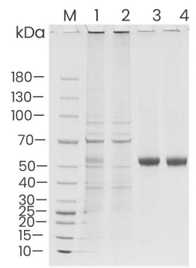
Line 1: Cell Lysate (Load)
Line 2: Acid Elution Flow-Through
Line 3: Peptide Elution Flow-Through
Line 4: 1st Acid Elution
Line 5: 2nd Acid Elution
Line 6: 1st Peptide Elution
Line 7: 2nd Peptide Elution

Elution Conditions:
• Acid Elution: 0.1 M Glycine (pH 3.0)
• Peptide Elution: DYKDDDDK Peptide (BR0044, BoYi Biotechnology)

Conclusion:
• Purity ≥95% by SDS-PAGE
• Acid Elution: Binding capacity of 4.1 mg/mL
• Peptide Elution: Binding capacity of 3.7 mg/mL

Fig. 1-9. SDS-PAGE: Prokaryotic Samples Purified with Anti-DYKDDDDK HC Affinity Beads

2)Eukaryotic Protein Purification:



Line M: Marker
Line 1: Eukaryotic Cell Expression Supernatant
Line 2: Purified Flow-Through
Line 3: Acid Elution
Line 4: Peptide Elution

Elution Conditions:
• Acid Elution: 0.1 M Glycine (pH 3.0)
• Peptide Elution: DYKDDDDK Peptide (BR0044, BoYi Biotechnology)

Conclusion:
• Purity ≥90% by SDS-PAGE
• Acid Elution: Binding capacity of 3.5 mg/mL
• Peptide Elution: Binding capacity of 3.0 mg/mL

Fig. 1-10. SDS-PAGE: Eukaryotic Samples Purified with Anti-DYKDDDDK HC Affinity Beads

Product Information

Products	Cat.No.	Size	Applications
Anti-DYKDDDDK Affinity Beads	SA042001	1ml	One step purification and detection of the DYKDDDDK-tagged protein expressed in prokaryotic, yeast or mammalian cells.
	SA042005	5ml	
	SA042025	25ml	
	SA042100	100ml	
	SA042500	500ml	
	SA04201L	1L	

Products	Cat.No.	Size	Applications
Anti-DYKDDDDK S1 Affinity Beads	SA109001	1ml	One step purification and detection of the DYKDDDDK-tagged protein expressed in prokaryotic, yeast or mammalian cells.
	SA109005	5ml	
	SA109025	25ml	
	SA109100	100ml	
	SA109500	500ml	
	SA1090IL	1L	
Anti-DYKDDDDK HC Affinity Beads	SA145001	1ml	Delivers excellent purification performance for both prokaryotic and eukaryotic samples, while tolerating relatively high concentrations of detergents.
	SA145005	5ml	
	SA145025	25ml	
	SA145100	100ml	
	SA145500	500ml	
	SA1450IL	1L	

HA-tagged protein affinity purification resin

The HA tag is a peptide consisting of the 98th to 106th amino acids (YPYDVPDYA) of human influenza hemagglutinin and has minimal impact on the spatial structure of the target protein. This peptide can be fused to either the N-terminal or C-terminal of the protein, making it commonly used in the expression of recombinant proteins. Anti-HA Affinity Beads are based on 4% agarose beads and demonstrate high specificity for binding HA-tagged proteins. These beads can be used for the purification and immunoprecipitation (IP) of HA-tagged proteins.

Product Information

Products	Cat.No.	Size	Applications
Anti-HA Affinity Beads	SA068001	1ml	It is used for purification and detection of HA-tagged protein.
	SA068005	5ml	
	SA068025	25ml	
	SA068100	100ml	
	SA068500	500ml	
	SA0680IL	1L	

c-Myc-tagged protein affinity purification resin

Anti-c-Myc Affinity Beads are used for the detection and purification of c-Myc-tagged proteins expressed in both prokaryotic and eukaryotic cells. The c-Myc peptide is encoded by the c-Myc gene located on human chromosome 8q24, corresponding to the 410th to 419th amino acids (EQKLISEEDL) of human p62. These affinity beads can recognize c-Myc-tagged proteins at the C-terminal, N-terminal, or internal sites. They are suitable for applications such as Western blot hybridization, immunoprecipitation, and flow cytometry.

Product Information

Products	Cat.No.	Size	Applications
Anti-c-Myc Affinity Beads	SA065001	1ml	Anti-c-Myc Affinity Beads can be used to detect and purify the c-myc tagged proteins expressed by prokaryotic and eukaryotic cell.
	SA065005	5ml	
	SA065025	25ml	
	SA065100	100ml	
	SA065500	500ml	
	SA0650IL	1L	

GFP-tagged protein affinity purification resin

Green fluorescent protein (GFP) and its mutant, enhanced green fluorescent protein (EGFP), are widely used to detect the expression efficiency and distribution of target genes and proteins. Both GFP and GFP-tagged proteins can be detected spontaneously through fluorescence, requiring no special procedures, and are unaffected by other substances. Anti-GFP Affinity Beads 4FF can be used to detect and purify GFP, EGFP, and their fusion proteins without binding to blue fluorescent protein (BFP)-tagged proteins.

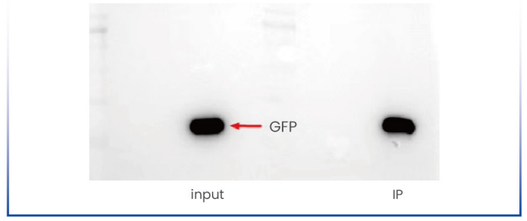


Fig.1-11 WB analysis of GFP-tagged protein.

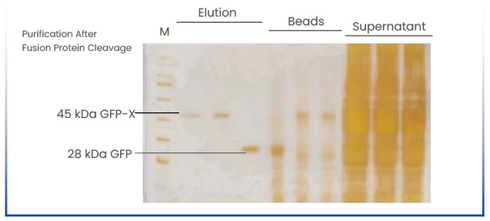


Fig.1-12 SDS-PAGE analysis of purification of GFP-tagged protein.

Product Information

Products	Cat.No.	Size	Applications
Anti-GFP Affinity Beads 4FF	SA070001	1ml	Anti-GFP Affinity Beads 4FF can be used to detect and purify GFP, EGFP and their fusion protein without binding to BFP fusion protein.
	SA070005	5ml	
	SA070025	25ml	
	SA070100	100ml	
	SA070500	500ml	
	SA07001L	1L	

RFP-tagged protein affinity purification resin

Red fluorescent protein (RFP), a molecular marker isolated from anemones, is commonly used in studies of protein localization, gene expression, and protein interactions. Anti-RFP Affinity Beads 4FF, based on cross-linked agarose beads, can be used for immunoprecipitation, co-immunoprecipitation, and the purification of natural RFP, RFP mutants, and their fusion proteins.

Product Information

Products	Cat.No.	Size	Applications
Anti-RFP Affinity Beads 4FF	SA072001	1ml	Anti-RFP Affinity Beads 4FF can be used for detection and purification of RFP and its fusion protein.
	SA072005	5ml	
	SA072025	25ml	
	SA072100	100ml	
	SA072500	500ml	
	SA07201L	1L	

YFP-tagged protein affinity purification resin

Yellow fluorescent protein (YFP) is a genetic variant of green fluorescent protein (GFP). The YFP-tagged protein fluoresces spontaneously, allowing for the localization of the target protein within the cell, and with minimal interference from other substances. This product is applicable for IP, co-IP, and affinity chromatography of natural YFP and its fusion proteins. Additionally, Anti-YFP Affinity Beads 4FF can detect and purify GFP, EGFP, and their fusion proteins, while not binding to BFP or RFP-tagged proteins.

Product Information

Products	Cat.No.	Size	Applications
Anti-YFP Affinity Beads 4FF	SA075001	1ml	Anti-YFP Affinity Beads 4FF can be used for immunoprecipitation and affinity chromatography of YFP and its fusion protein.
	SA075005	5ml	
	SA075025	25ml	
	SA075100	100ml	
	SA075500	500ml	
	SA07501L	1L	

Protein A fusion protein affinity purification resin

Rabbit IgG Beads 4FF is a one-step affinity chromatography for the purification of protein A fusion proteins. Protein A, a cell wall protein derived from Staphylococcus aureus, specifically binds to the Fc fragment of mammalian IgG. Consequently, Rabbit IgG is coupled to cross-linked 4% agarose beads, enabling effective purification and detection of protein A fusion proteins.

Product Information

Products	Cat.No.	Size	Applications
Rabbit IgG Beads	SA082005	5ml	Rabbit IgG Beads 4FF can be used to purify and detect the protein A fusion proteins expressed by prokaryotic and eukaryotic cells.
	SA082025	25ml	
	SA082100	100ml	
	SA082500	500ml	
	SA08201L	1L	
HiSelect IgG 4FF	SA028C47	4.7ml,1pcs	
HiPur IgG 4FF	SA028C20	20ml,1pcs	

Antibody Affinity Chromatography

The ligands used in the purification of general antibodies mainly include Protein A and Protein G. These ligands are commonly used for the purification of both polyclonal and monoclonal antibodies.

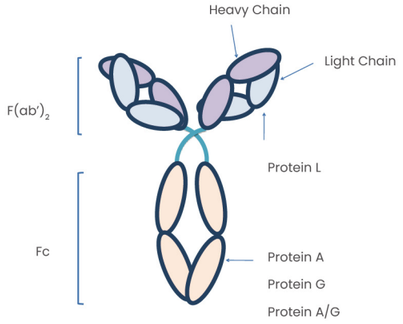


Fig. 1-13 the site of the antibody bind to the protein.

Table 3-1 The binding ability of protein A, protein G and protein A/G to different antibodies.

Species	Subtype	Protein A	Protein G	Protein A/G
Human	IgA	varible	—	++
	IgD	—	—	—
	IgE	—	—	—
	IgG1	++++	++++	++++
	IgG2	++++	++++	++++
	IgG3	—	++++	++++
	IgG4	++++	++++	++++
	IgM	varible	—	++
Avian egg yolk	IgY	—	—	—
Cow	—	++	++++	++++
Dog	—	++++	++	++++
Goat	—	—	++++	++++
Guinea	IgG1	++++	++	++++
	IgG2	++++	++	++++
pig	—	+	++	—
Hamster Horse	Total IgG —	++	++++	++++
Koala	—	—	+	—
Llama	—	—	+	—
Monkey(rhesus)	IgG1	++++	++++	++++
Mouse	IgG2a	+	++++	++
	IgG2b	++++	++++	++++
	IgG3	+++	+++	+++
	IgM	++	+++	+++
	—	variable	—	—
Pig	Total	+++	+++	++++
Rabbit	IgG	++++	+++	++++
Rat	IgG1	—	+	++
	IgG2a	—	++++	++++
	IgG2b	—	++	++
	IgG3	+	++	++
Sheep	Total	+/-	++	++

++++=Strong binding; + + = medium binding; - = weak or no binding

Protein A related products

Universal antibody purification resin

Protein A, a cell wall protein isolated from *Staphylococcus aureus*, mainly binds to mammalian IgG via the Fc fragment but does not bind to human IgM, IgD, or IgA. Natural Protein A contains five IgG binding regions along with several unknown functional regions, while recombinant Protein A retains only the five IgG binding regions, which has low nonspecific adsorption.
The AbPur rProtein A Kit is tailored for the one-step purification of antibodies, which contains one pre-packed column and ready-to-use buffers.

Product Information

Products	Cat.No.	Size	Applications
rProtein A Beads	SA012005	5ml	The kit can be used to purify both monoclonal and polyclonal antibodies, and the purity can reach 95% in one step. It is recommended for use at the laboratory scale.
	SA012025	25ml	
	SA012100	100ml	
	SA012500	500ml	
	SA01201L	1L	
	SA01210L	10L	
rProtein A Beads Gravity Column	SA012GC01	1ml	
	SA012GC05	5ml	
AbPur rProtein A Kit	SA012K03	3T	
AbPur rProtein A Buffer Kit	SA012KB03	3T	
rProtein A Beads 4FF	SA015005	5ml	rProtein A Beads 4FF can be used in FPLC and is easy to pack and use. Its high flow properties make it excellent for scaling-up.
	SA015025	25ml	
	SA015100	100ml	
	SA015500	500ml	
	SA01501L	1L	
	SA01510L	10L	
rProtein A Beads	SA015GC01	1ml	
	SA015GC05	5ml	
AbCap A 4FF	SA015C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA015C51	5×1ml	
	SA015C15	1×5ml	
	SA015C55	5×5ml	
	SA015CS	3×1ml+1×5ml	
HiSelect A 4FF	SA015C47	4.7ml,1pcs	
HiPur A 4FF	SA015C20	20ml,1pcs	
Smac A-ME	SA123005	5ml	Enables elution of Fc-containing molecules under moderate pH conditions.
	SA123025	25ml	
	SA123100	100ml	
	SA123500	500ml	
	SA12301L	1L	
	SA12310L	10L	
PreCap Smac A-ME	SA123C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA123C51	5×1ml	
	SA123C15	1×5ml	
	SA123C55	5×5ml	
Smac VH3 Affinity Beads	SA122005	5ml	Alkaline-tolerant, high-capacity, high-resolution, and highly rigid agarose matrix makes this resin particularly suitable for large-scale purification of industrial or clinically applicable antibodies.
	SA122025	25ml	
	SA122100	100ml	
	SA122500	500ml	
	SA12201L	1L	
	SA12210L	10L	
PreCap Smac VH3	SA122C11	1×1ml	Pre-packed columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, offering convenience for user operation.
	SA122C51	5×1ml	
	SA122C15	1×5ml	
	SA122C55	5×5ml	
HiPur Smac VH3	SA122C20	20ml,1pcs	
HiSelect Smac VH3	SA122C47	4.7ml,1pcs	

Products	Cat.No.	Size	Applications
rProtein A-ME Beads 4FF	SA073005	5ml	Primarily designed for purification of monoclonal antibodies, polyclonal antibodies, or Fc-fusion proteins, this system enables antibody elution under elevated pH conditions (pH 5.0), effectively preserving biological activity.
	SA073025	25ml	
	SA073100	100ml	
	SA073500	500ml	
	SA07301L	1L	
HiSelect A-ME	SA073C47	4.7ml,1pcs	
HiPur A-ME	SA073C20	20ml,1pcs	
Smac SupA-ME	SA137005	5ml	Designed for the separation and purification of monoclonal antibodies, this product is well-suited for large-scale purification of industrial or clinically applicable antibodies.
	SA137025	25ml	
	SA137100	100ml	
	SA137500	500ml	
	SA13701L	1L	
	SA13710L	10L	
PreCap Smac SupA-ME	SA137C11	1×1ml	
	SA137C51	5×1ml	
	SA137C15	1×5ml	
	SA137C55	5×5ml	
HiSelect Smac SupA-ME	SA137C47	4.7ml,1pcs	
HiPur Smac SupA-ME	SA137C20	20ml,1pcs	

Monoclonal antibody purification resin

Monoclonal antibody purification products mainly refer to Protein At Beads 4FF, Protein At Beads LXPro and Protein SupAt Beads, which can purify monoclonal antibodies at relatively high flow rates. These products are designed for cleaning-in-place using 0.1–1 M NaOH, making them suitable for industrial customers aiming to efficiently produce and scale up antibody production.Key features include:

Product Advantages

1. High dynamic binding capacity and adsorption efficiency.
2. Resistance to cleaning-in-place with 0.1-1 M NaOH, ensuring a long shelf life. After 200 cleaning cycles with 0.1 M NaOH, the medium's loading capacity remains nearly unchanged. After 100 cycles with 0.5 M NaOH, the loading capacity still exceeds 80% of the initial value.
3. A relatively stable directional coupling method is employed, resulting in low ligand leaching (less than 20 ng/mg IgG).
4. Effective removal of host cell proteins (HCP) and DNA, achieving HCP residues below 1 μg/mg and HCDNA residues below 1 ppm, comparable to leading commercial products.
5. Comprehensive documentation and data are provided to support drug submissions.

Product Information

Products	Cat.No.	Size	Applications
Protein At Beads 4FF	SA023005	5ml	Protein At Beads 4FF is easy to pack and use. Its high stability and high flow properties make it excellent for scaling-up.
	SA023025	25ml	
	SA023100	100ml	
	SA023500	500ml	
	SA02301L	1L	
	SA02310L	10L	
Protein At Beads 4FF Gravity Column	SA023GC01	1ml	
	SA023GC05	5ml	

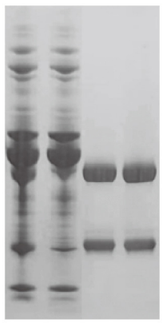
Products	Cat.No.	Size	Applications
MabCap At 4FF	SA023C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA023C51	5×1ml	
	SA023C15	1×5ml	
	SA023C55	5×5ml	
	SA023CS	3×1ml+1×5ml	
HiSelect At 4FF	SA023C47	4.7ml,1pcs	
HiPur At 4FF	SA023C20	20ml,1pcs	
Protein At Beads LX	SA085005	5ml	Protein At Beads LX has a high dynamic binding capacity (DBC) and is specially designed for processing feed from high-expression cell cultures with increased antibody titers.
	SA085025	25ml	
	SA085100	100ml	
	SA085500	500ml	
	SA08501L	1L	
	SA08510L	10L	
MabCap At LX	SA085C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA085C51	5×1ml	
	SA085C15	1×5ml	
	SA085C55	5×5ml	
	SA085CS	3×1ml+1×5ml	
HiSelect At LX	SA085C47	4.7ml,1pcs	
HiPur At LX	SA085C20	20ml,1pcs	
Protein At Beads LXPro	SA124005	5ml	Designed specifically for high-titer antibody purification, Protein At Beads LXPro exhibit high dynamic binding capacity under extended residence time.
	SA124025	25ml	
	SA124100	100ml	
	SA124500	500ml	
	SA12401L	1L	
	SA12410L	10L	
HiSelect At LXPro	SA124C47	4.7ml,1pcs	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
HiPur At LXPro	SA124C20	20ml,1pcs	
PreCap At LXPro	SA124C11	1×1ml	
	SA124C51	5×1ml	
	SA124C15	1×5ml	
	SA124C55	5×5ml	
Protein SupAt Beads	SA095005	5ml	Protein SupAt Beads has a high dynamic binding capacity (DBC) and is specially designed to process feed from high-expression cell cultures with increased antibody titers. The alkali resistance, high loading capacity, low ligand shedding, and highly cross-linked rigid matrix of agarose gels make the packings particularly suitable for large-scale purification of antibodies for industrial or clinical applications.
	SA095025	25ml	
	SA095100	100ml	
	SA095500	500ml	
	SA09501L	1L	
MabCap SupAt Beads	SA095C11	1×1ml	
	SA095C51	5×1ml	
	SA095C15	1×5ml	
	SA095C55	5×5ml	
	SA095CS	3×1ml+1×5ml	
HiSelect SupAt	SA095C47	4.7ml,1pcs	
HiPur SupAt	SA095C20	20ml,1pcs	

Protein G related products

Universal antibody purification resin

rProtein G Beads and rProtein G Beads 4FF are utilized for the purification of antibodies. Protein G is a cell wall protein isolated from G *streptococci*, known for its ability to bind mammalian IgG through the Fc fragment. The recombinant protein G has high-affinity binding capacity and low nonspecificity. Notably, Protein G and Protein A exhibit distinct binding properties to IgG. Compared to Protein A, Protein G demonstrates a stronger binding affinity for polyclonal antibodies from sources such as cattle, sheep, and horses. It is also capable of binding rat IgG, human IgG3, and mouse IgG1, which do not bind well with Protein A. The AbPur rProtein G kit is designed for the one-step purification of antibodies. This kit includes a prepacked column and ready-to-use buffer.

Example: AbCap G 4FF



Column: AbCap G 4FF

Sample: Mouse serum

Binding /washing buffe: 20mM phosphate,0.1M,NaCl,PH7.0

Elution Buffer: 0.1M Glycine, PH 3.0

Line 1: Sample

Line 2: Flow through

Line 3: Elution 1

Line 4: Elution 2

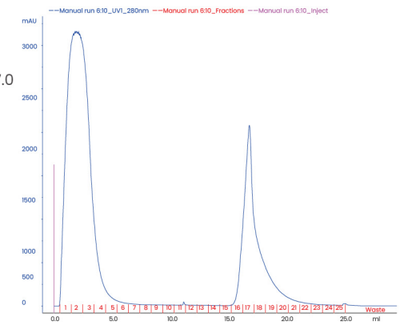


Fig. 1-14 Purification of antibody by AbCap G 4FF.

Product Information

Products	Cat.No.	Size	Applications
rProtein G Beads	SA016005	5ml	The kit can be used to purify both monoclonal and polyclonal antibodies, and the purity can reach 95% in one step It is recommended for use at the laboratory scale.
	SA016025	25ml	
	SA016100	100ml	
	SA016500	500ml	
	SA01601L	1L	
	SA01610L	10L	
rProtein G Beads Gravity Column	SA016GC01	1ml	
	SA016GC05	5ml	
AbPur rProtein G Kit AbPur	SA016K03	3T	The one-step antibody purification kit is characterized by its simplicity of operation and high purification efficiency.
rProtein G Buffer Kit	SA016KB03	3T	
rProtein G Beads 4FF	SA020005	5ml	rProtein G Beads 4FF can be used in FPLC and is easy to pack and use. Its high flow properties make it excellent for scaling-up.
	SA020025	25ml	
	SA020100	100ml	
	SA020500	500ml	
	SA02001L	1L	
	SA02010L	10L	
rProtein G Beads 4FF Gravity Column	SA020GC01	1ml	
	SA020GC05	5ml	
AbCap G 4FF	SA020C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA020C51	5×1ml	
	SA020C15	1×5ml	
	SA020C55	5×5ml	
	SA020CS	3×1ml+1×5ml	
HiSelect G 4FF HiPur G 4FF	SA020C47	4.7ml,1pcs	
	SA020C20	20ml,1pcs	

Protein A/G related products

Universal antibody purification resin

rProtein A/G Beads 4FF is an affinity medium, designed for the purification, immuneprecipitation and Co-immuneprecipitation. The rProtein A/G is coupled to the highly cross-linked 4% agarose beads by a stable thioether linkage. The medium has higher antibody binding strength and lower protein nonspecific adsorption.

Product Information

Products	Cat.No.	Size	Applications
rProtein A/G Beads 4FF	SA032005	5ml	It is mainly used for detection of antigens and antibodies such as IP and Co-IP.
	SA032025	25ml	
	SA032100	100ml	
	SA032500	500ml	
	SA03201L	1L	
	SA03210L	10L	
AbCap A/G 4FF	SA032C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA032C51	5×1ml	
	SA032C15	1×5ml	
	SA032C55	5×5ml	
	SA032CS	3×1ml+1×5ml	
HiSelect A/G 4FF	SA032C47	4.7ml,1pcs	
HiPur A/G 4FF	SA032C20	20ml,1pcs	

Protein L related products

Universal antibody purification resin

rProtein L Beads , rProtein L Beads 4FF and Smac L are universal affinity chromatography medium designed for the simple, one-step purification of various classes, subclasses, and fragments of immunoglobulins from biological samples and cell culture supernatant. Unlike Protein A and Protein G, which primarily bind to the Fc regions of immunoglobulins, Protein L targets the variable region of kappa light chains, allowing it to bind a broader range of immunoglobulin classes and subclasses. Consequently, Protein L is particularly well-suited for capturing different-sized antibody fragments, including Fab fragments, single-chain variable fragments (scFvs), and domain antibodies (dAbs).

Product Information

Products	Cat.No.	Size	Applications
rProtein L Beads	SA045005	5ml	rProtein L is obtained by gene recombination technology. rProtein L Beads 4FF can bind to the kappa light chains of antibodies.
	SA045025	25ml	
	SA045100	100ml	
	SA045500	500ml	
	SA04501L	1L	
	SA04510L	10L	

Products	Cat.No.	Size	Applications
rProtein L Beads 4FF	SA033005	5ml	rProtein L is obtained by gene recombination technology. rProtein L Beads 4FF can bind to the kappa light chains of antibodies.
	SA033025	25ml	
	SA033100	100ml	
	SA033500	500ml	
	SA03301L	1L	
	SA03310L	10L	
AbCap L 4FF	SA033C11	1×1ml	
	SA033C51	5×1ml	
	SA033C15	1×5ml	
	SA033C55	5×5ml	
	SA033CS	3×1ml+1×5ml	
HiSelect L 4FF	SA033C47	4.7ml,1pcs	
HiPur L 4FF	SA033C20	20ml,1pcs	
Smac L	SA100005	5ml	Smac L is an affinity chromatography medium designed for the purification of both monoclonal and bispecific antibodies. It is composed of highly rigid agarose microspheres, allowing for purification at relatively high flow rates.
	SA100025	25ml	
	SA100100	100ml	
	SA100500	500ml	
	SA10001L	1L	
PreCap Smac L	SA100C11	1×1ml	
	SA100C51	5×1ml	
	SA100C15	1×5ml	
	SA100C55	5×5ml	
HiSelect Smac L	SA100C47	4.7ml,1pcs	
HiPur Smac L	SA100C20	20ml,1pcs	

Pre-activated resin

Polyclonal antibody purification resin

PabPur SulfoLink Beads 4FF allow for efficient covalent immobilization of sulfhydryl-containing peptides, proteins, and other ligands for use in affinity purification. Specifically, cysteine residues at the N- or C-terminus of antigens can be effectively coupled to PabPur SulfoLink Beads, facilitating antibody purification.
NHS-Activated Beads 4FF are pre-activated agarose beads to which ligands, such as proteins and peptides, can be coupled via primary amino groups. This pre-activated medium enables the preparation of affinity adsorbents capable of isolating specific substances from complex mixtures, often achieving high purity in one step.

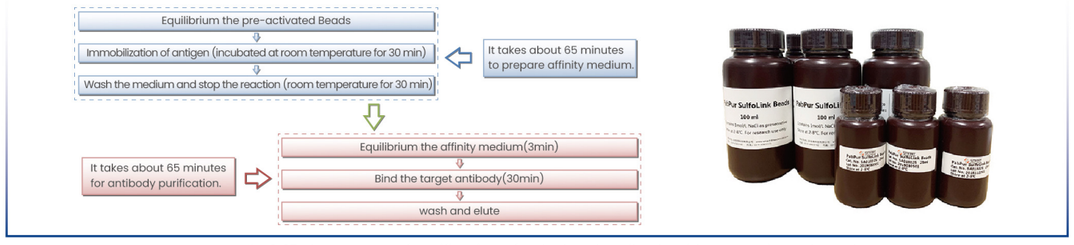


Fig. 1-15 The process of purification of polyclonal antibody with pre-activated Beads.

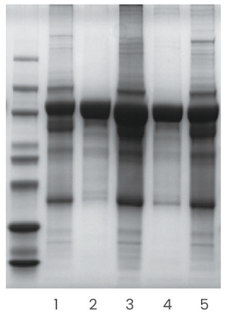
Product Information

Products	Cat.No.	Size	Applications
PabPur SulfoLink Beads	SA018005	5ml	Immobilization of sulfhydryl-containing peptides, proteins, and other ligands onto a medium for use in affinity purification.
	SA018025	25ml	
	SA018100	100ml	
	SA018250	250ml	
PabPur SulfoLink Beads 4FF	SA069005	5ml	
	SA069025	25ml	
	SA069100	100ml	
	SA069250	250ml	
NHS-Activated Beads 4FF	SA039005	5ml	NHS-Activated Beads 4FF is used for covalent immobilization of substances by the primary amino groups.
	SA039025	25ml	
	SA039100	100ml	
	SA039500	500ml	
	SA03901L	1L	
NHS-Activated LA Beads 4FF	SA083005	5ml	It reduces steric hindrance between ligands, offers strong pressure resistance, and maintains stability after protein coupling, making it suitable for large-scale industrial purification.
	SA083025	25ml	
	SA083100	100ml	
	SA083500	500ml	
	SA08301L	1L	
Epoxy-Activated Beads 6B	SA071005	5ml	This epoxy-activated agarose microsphere is designed for direct coupling of proteins and samples containing amino, thiol, or hydroxyl groups.
	SA071025	25ml	
	SA71100	100ml	
	SA071500	500ml	
	SA07101L	1L	
Epoxy-Activated Beads 4FF	SA040005	5ml	
	SA040025	25ml	
	SA040100	100ml	
	SA040500	500ml	
	SA04001L	1L	
ECH-Activated Beads 4FF	SA063005	5ml	This resin features a free carboxyl group at the end of a 10-atom hydrophilic spacer arm, enabling direct coupling of amino-containing proteins and samples.
	SA063025	25ml	
	SA063100	100ml	
	SA063500	500ml	
	SA06301L	1L	
Amino-Activated Beads 4FF	SA043005	5ml	It can be covalently coupled with carboxyl-containing molecules to prepare specialized affinity media, enabling rapid and efficient one-step purification of target substances from complex mixtures.
	SA043025	25ml	
	SA043100	100ml	
	SA043500	500ml	
	SA04301L	1L	
Aldehyde-Activated Beads 4FF	SA079005	5ml	Suitable for direct coupling of samples containing amino or thiol groups, including polysaccharides, proteins, and peptides.
	SA079025	25ml	
	SA079100	100ml	
	SA079500	500ml	
	SA07901L	1L	

Other Chromatography

Specific groups purification resin

Blue Beads 6FF is an affinity chromatography designed for the purification of albumin, interferon, lipoproteins, and blood coagulation factors. It also binds various enzymes, including kinases, dehydrogenases, and those requiring adenyl-containing cofactors. Based on highly cross-linked 6% agarose beads, Blue Beads 6FF has excellent chemical and mechanical stability, making it ideal for large-scale purification of albumin and interferon.



Column: Blue Beads 6FF

Sample: Human serum

Binding/Washing Buffer: 50mM Tris,400mM Nacl,pH8.0

Elution Buffer: 50mM Tris,400mM Nacl,1M NaSCN,pH8.0

Line 1: Flow though

Line 2: Elution fraction

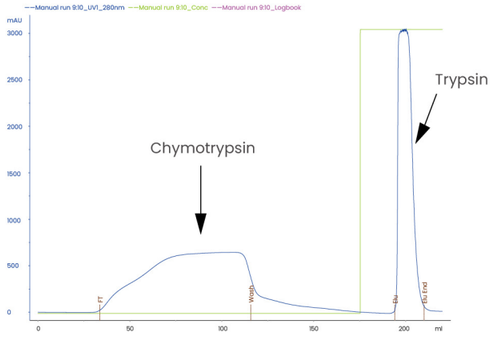
Line 3: Sample

Line 4: Elution of the competitor

Line 5: Flow through of the competitive product

Fig. 1-16 One step purification of HSA from human serum.

Benzamidine Beads 4FF is based on highly cross-linked 4% agarose beads with p-aminobenzamidine covalently coupled as the ligand. As a broad-spectrum inhibitor of serine proteases, Benzamidine Beads 4FF are ideal for purifying serine proteinases, including trypsin, trypsin-like proteases, urokinase, and prekallikrein.



Medium: Benzamidine Beads 4FF

Chromatographic column: SXK16/200mm

Sample: Trypsin and chymotrypsin mixture

Binding: 50mM Tris,500mM Nacl,pH7.4

Elution: 50mM NaAc,200mM Nacl, pH2.7

Fig.1-17 The affinity trypsin of chymotrypsin by Benzamidine Beads 4FF.

Product Information

Products	Cat.No.	Size	Applications
Heparin Beads 6FF	SA024005	5ml	Heparin Beads 6FF is designed for the purification of proteins such as antithrombin III, coagulation factors, and other plasma proteins, as well as DNA-binding proteins, lipoproteins, protein synthesis factors, nucleic acid-acting enzymes, and steroid receptors.
	SA024025	25ml	
	SA024100	100ml	
	SA024500	500ml	
	SA02401L	1L	
	SA02410L	10L	
Heparin Beads 6FF Gravity Column	SA024GC01	1ml	
	SA024GC05	5ml	
PreCap Heparin	SA024C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA024C51	5×1ml	
	SA024C15	1×5ml	
	SA024C55	5×5ml	
	SA024CS	3×1ml+1×5ml	
HiSelect Heparin 6FF	SA024C47	4.7ml,1pcs	
HiPur Heparin 6FF	SA024C20	20ml,1pcs	
Blue Beads 6FF	SA027005	5ml	It can purify albumin, interferon, lipoproteins and blood coagulation factors and most enzymes requiring adenyl-contaning cofactors. It is an ideal medium for purification of albumin and interferon at process scale.
	SA027025	25ml	
	SA027100	100ml	
	SA027500	500ml	
	SA02701L	1L	
	SA02710L	10L	
PreCap Blue	SA027C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA027C51	5×1ml	
	SA027C15	1×5ml	
	SA027C55	5×5ml	
	SA027CS	3×1ml+1×5ml	
HiSelect Blue 6FF	SA027C47	4.7ml,1pcs	
HiPur Blue 6FF	SA027C20	20ml,1pcs	
Smac Blue	SA128005	5ml	Designed for the purification of albumin, interferons, nucleotide-requiring enzymes, α2-macroglobulin, coagulation factors, and other related biomolecules.
	SA128025	25ml	
	SA128100	100ml	
	SA128500	500ml	
	SA12801L	1L	
	SA12810L	10L	
PreCap Smac Blue	SA128C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA128C51	5×1ml	
	SA128C15	1×5ml	
	SA128C55	5×5ml	
HiSelect Smac Blue	SA128C47	4.7ml,1pcs	
HiPur Smac Blue	SA128C20	20ml,1pcs	
Con A Beads 4FF	SA028005	5ml	Con A Beads 4FF can detect and purify glycoproteins, membrane proteins, glycolipids, polysaccharides, membrane vesicles with mannoside or glucoside residues, IgM, hormones and lipoproteins.
	SA028025	25ml	
	SA028100	100ml	
	SA028500	500ml	
	SA02801L	1L	
	SA02810L	10L	
Con A Beads 4FF Gravity Column	SA028GC01	1ml	
	SA028GC05	5ml	

Products	Cat.No.	Size	Applications
PreCap Con A	SA028C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA028C51	5×1ml	
	SA028C15	1×5ml	
	SA028C55	5×5ml	
	SA028CS	3×1ml+1×5ml	
HiSelect Con A 4FF	SA028C47	4.7ml,1pcs	
HiPur Con A 4FF	SA028C20	20ml,1pcs	
Endotoxin Removal Beads	SA031005	5ml	Polymyxin B is coupled to 4% agarose beads, enabling effective endotoxin removal from biological samples. The ligand of this product is PMB affinity ligand.
	SA031025	25ml	
	SA031100	100ml	
	SA031500	500ml	
	SA03101L	1L	
Endotoxin Removal Bead Gravity Column	SA031GC01	1ml	
	SA031GC05	5ml	
Endotoxin Removal Kit	SA031K03	3T	It contains gravity columns and buffers for endotoxin removal.
LCA Beads 4FF	SA097005	5ml	LCA Beads 4FF can detect and purify glycoproteins, membrane proteins, glycolipids, polysaccharides, membrane vesicles with mannoside or glucoside residues, IgM, hormones and lipoproteins.
	SA097025	25ml	
	SA097100	100ml	
	SA097500	500ml	
	SA09701L	1L	
PreCap LCA	SA097C11	1×1ml	
	SA097C51	5×1ml	
	SA097C15	1×5ml	
	SA097C55	5×5ml	
	SA097CS	3×1ml+1×5ml	
Smac LCA	SA127005	5ml	
	SA127025	25ml	
	SA127100	100ml	
	SA127500	500ml	
	SA12701L	1L	
	SA12710L	10L	
Benzamidine Beads 4FF	SA044005	5ml	It can be used to purify serine proteinases, such as trypsin and trypsin-like proteases.
	SA044025	25ml	
	SA044100	100ml	
	SA044500	500ml	
	SA04401L	1L	
	SA04410L	10L	
PreCap Benzamidine 4FF	SA044C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SA044C51	5×1ml	
	SA044C15	1×5ml	
	SA044C55	5×5ml	
	SA044CS	3×1ml+1×5ml	
HiSelect Benzamidine 4FF	SA044C47	4.7ml,1pcs	
HiPur Benzamidine 4FF	SA044C20	20ml,1pcs	

Products	Cat.No.	Size	Applications
Iminobiotin Beads 6FF	SA059005	5ml	It enables one-step purification of streptavidin.
	SA059025	25ml	
	SA059100	100ml	
	SA059500	500ml	
	SA05901L	1L	
	SA05910L	10L	
HiSelect Iminobiotin 6FF	SA059C47	4.7ml,1pcs	
HiPur Iminobiotin 6FF	SA059C20	20ml,1pcs	
Gelatin Beads 4FF	SA054005	5ml	It enables one-step purification of fibronectin.
	SA054025	25ml	
	SA054100	100ml	
	SA054500	500ml	
	SA05401L	1L	
	SA0410L	10L	
Boric Acid Beads 4FF	SA057005	5ml	It can be used to purify carbohydrates, nucleosides, nucleotides, nucleic acids and enzymes, especially for the glycoproteins.
	SA057025	25ml	
	SA057100	100ml	
	SA057500	500ml	
	SA05701L	1L	
	SA05710L	10L	
Lysine Beads 4FF	SA046005	5ml	It can be used to purify fibrinolytic activator, fibrinolytic progenitor and ribonucleic acid.
	SA046025	25ml	
	SA046100	100ml	
	SA046500	500ml	
	SA04601L	1L	
	SA04610L	10L	
Smac PlasmidSelect	SA104005	5ml	This thiophilic aromatic chromatography medium selectively separates covalently closed circular supercoiled plasmid DNA from its open-circular isoforms.
	SA104025	25ml	
	SA104100	100ml	
	SA104500	500ml	
	SA10401L	1L	
PreCap PlasmidSelect	SA104C11	1×1 ml	
	SA104C51	5×1 ml	
	SA104C15	1×5 ml	
	SA104C55	5×5 ml	
HiSelect Smac PlasmidSelect	SA104C47	4.7ml,1pcs	
HiPur Smac PlasmidSelect	SA104C20	20ml,1pcs	
Plasmid Purification Beads	SI014030	30ml	It enables rapid, one-step purification of plasmid.
	SI014100	100ml	
	SI014300	300ml	
	SI014500	500ml	
	SI01401L	1L	

Products	Cat.No.	Size	Applications
AAV Affinity Beads 4FF	SA096005	5ml	AAV Affinity Beads 4FF is an affinity chromatography medium for the purification of adeno-associated virus (AAV) with high affinity for several subtypes of AAV.
	SA096025	25ml	
	SA096100	100ml	
	SA09601L	1L	
Smac DeVirS	SA226005	5 ml	For virus capture and intermediate purification.
	SA226025	25 ml	
	SA226100	100 ml	
	SA226500	500 ml	
	SA22601L	1 L	
	SA22610L	10 L	
PreCap Smac DeVirS	SA226C11	1×1 ml	
	SA226C51	5×1 ml	
	SA226C15	1×5 ml	
	SA226C55	5×5 ml	
HiSelect Smac DeVirS	SA226C47	4.7ml,1pcs	
HiPur Smac DeVirS	SA226C20	20ml,1pcs	

1.2 Ion Exchange purification resin

Smart-Lifesciences provides ion exchange resins with four ligands (DEAE, CM, SP, and Q) and two substrates. Available product formats include both resin and pre-packed columns.

Fig.1-18 The structure diagram of four ion exchange chromatography.

Strong cation exchange chromatography resin

Product Information

Products	Cat.No.	Size	Applications
SP Beads 6FF	SI003025	25ml	A strong cation exchange medium designed for separation and purification of positively charged proteins at both laboratory and industrial scales.
	SI003100	100ml	
	SI003500	500ml	
	SI00301L	1L	
	SI00310L	10L	
IexCap SP 6FF	SI003C11	1×1ml	Pre-packed with SP Beads 6FF, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, offering convenience for user operation.
	SI003C51	5×1ml	
	SI003C15	1×5ml	
	SI003C55	5×5ml	
HiSelect SP 6FF	SI003C47	4.7ml,1pcs	
HiPur SP 6FF	SI003C20	20ml,pcs	
SP Beads 6FF	SI011050	50ml	Designed for downstream separation and purification of proteins, nucleic acids, and peptides in biopharmaceutical and bioengineering applications.
	SI011075	75ml	
	SI011250	250ml	
	SI01101L	1L	
	SI01110L	10L	
SP Big Beads	SI043005	5ml	
	SI043025	25ml	
	SI043100	100ml	
	SI043500	500ml	
	SI04301L	1L	
	SI04310L	10L	
Smac SP	SI027025	25ml	A strong cation exchange medium suitable for purification of positively charged proteins at both laboratory and industrial scales.
	SI027100	100ml	
	SI027500	500ml	
	SI02701L	1L	
	SI02710L	10L	
IexCap Smac SP	SI027C11	1×1ml	Pre-packed with Smac SP, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, for ease of use.
	SI027C51	5×1ml	
	SI027C15	1×5ml	
	SI027C55	5×5ml	
HiSelect Smac SP	SI027C47	4.7ml,1pcs	
HiPur Smac SP	SI027C20	20ml,1pcs	
Smac SP 40	SI028025	25ml	A strong cation exchange medium for separation and purification of positively charged proteins at laboratory and industrial scales.
	SI028100	100ml	
	SI028500	500ml	
	SI02801L	1L	
	SI02810L	10L	
IexCap Smac SP 40	SI028C11	1×1ml	Pre-packed with Smac SP 40, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, ensuring operational convenience.
	SI028C51	5×1ml	
	SI028C15	1×5ml	
	SI028C55	5×5ml	
HiSelect Smac SP 40	SI028C47	4.7ml,1pcs	
HiPur Smac SP 40	SI028C20	20ml,1pcs	
Smac SP 40 Plus	SI044025	25ml	A strong cation exchange medium characterized by high capacity and high resolution, suitable for high-throughput intermediate purification of various biomolecules.
	SI044100	100ml	
	SI044500	500ml	
	SI04401L	1L	
	SI04410L	10L	

Weak cation exchange chromatography resin

Product Information

Products	Cat.No.	Size	Applications
CM Beads 6FF	SI007025	25ml	A weak cation exchange medium designed for separation and purification of positively charged proteins at both laboratory and industrial scales.
	SI007100	100ml	
	SI007500	500ml	
	SI00701L	1L	
	SI00710L	10L	
IexCap CM 6FF	SI007C11	1×1ml	Pre-packed with CM Beads 6FF, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, offering convenience for user operation.
	SI007C51	5×1ml	
	SI007C15	1×5ml	
	SI007C55	5×5ml	
HiSelect CM 6FF	SI007C47	4.7ml,1pcs	
HiPur CM 6FF	SI007C20	20ml,1pcs	

Strong anion exchange chromatography resin

Product Information

Products	Cat.No.	Size	Applications
Q Beads 6FF	SI001025	25ml	A strong anion exchange medium designed for separation and purification of negatively charged proteins at both laboratory and industrial scales.
	SI001100	100ml	
	SI001500	500ml	
	SI00101L	1L	
	SI00110L	10L	
IexCap Q 6FF	SI001C11	4×1ml	Pre-packed with QBeads 6FF, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, for ease of use.
	SI001C51	5×1ml	
	SI001C15	1×5ml	
	SI001C55	5×5ml	
HiSelect Q 6FF	SI001C47	4.7ml,1pcs	
HiPur Q 6FF	SI001C20	20ml,1pcs	
Q Beads HP	SI010050	50ml	A strong anion exchange medium suitable for separation and purification of negatively charged proteins at both laboratory and industrial scales.
	SI010075	75ml	
	SI010250	250ml	
	SI01001L	1L	
	SI01010L	10L	
Smac Q	SI019025	25ml	
	SI019100	100ml	
	SI019500	500ml	
	SI01901L	1L	
	SI01910L	10L	
IexCap Smac Q	SI019C11	1×1ml	Pre-packed with Smac Q, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, ensuring operational convenience.
	SI019C51	5×1ml	
	SI019C15	1×5ml	
	SI019C55	5×5ml	
HiSelect Smac Q	SI019C47	4.7ml,1pcs	
HiPur Smac Q	SI019C20	20ml,1pcs	
Smac Q 40	SI035025	25ml	A strong anion exchange medium designed for separation and purification of positively charged proteins at both laboratory and industrial scales.
	SI035100	100ml	
	SI035500	500ml	
	SI03501L	1L	
	SI03510L	10L	
IexCap Smac Q 40	SI035C11	1×1ml	Pre-packed with Smac Q 40, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, offering convenience for user operation.
	SI035C51	5×1ml	
	SI035C15	1×5ml	
	SI035C55	5×5ml	
HiSelect Smac Q 40	SI035C47	4.7ml,1pcs	
HiPur Smac Q 40	SI035C20	20ml,1pcs	

Weak anion exchange chromatography resin

Product Information

Products	Cat.No.	Size	Applications
DEAE Beads 6FF	SI005025	25ml	A weak anion exchange medium designed for separation and purification of negatively charged proteins at both laboratory and industrial scales.
	SI005100	100ml	
	SI005500	500ml	
	SI00501L	1L	
	SI00510L	10L	
IexCap DEAE 6FF	SI005C11	4×1ml	Pre-packed with DEAE Beads 6FF, these columns feature standard connectors and are compatible with various low-to-medium pressure chromatography systems, such as ÄKTA, offering convenience for user operation.
	SI005C51	5×1ml	
	SI005C15	1×5ml	
	SI005C55	5×5ml	
HiSelect DEAE 6FF	SI007C47	4.7ml,1pcs	
HiPur DEAE 6FF	SI007C20	20ml,1pcs	
DEAE Smartdex A-25	SI0091	25g	A dextran-based weak anion exchange medium. Widely used in downstream separation and purification of proteins, nucleic acids, and peptides in biopharmaceutical and bioengineering applications.
	SI0092	100g	
	SI0093	500g	
	SI0094	1Kg	
	SI0095	10Kg	
	SI0096	25Kg	

1.3 Hydrophobic Interaction purification resin

Hydrophobic interaction chromatography consists of four ligands (butyl, octyl, phenyl and butyl-S) immobilized on highly cross-linked agarose beads. It can be used in multiple formats, including conventional gravity-flow chromatography and purification system. PreCap columns are pre-packed columns containing this medium.

Butyl

Product Information

Products	Cat.No.	Size	Applications
Butyl Beads 4FF	SH001025	25ml	Butyl Beads 4FF is an aliphatic hydrophobic interaction medium and has the weaker hydrophobicity to the substances.
	SH001100	100ml	
	SH001500	500ml	
	SH00101L	1L	
PreCap Butyl 4FF	SH001C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SH001C51	5×1ml	
	SH001C15	1×5ml	
	SH001C55	5×5ml	
HiSelect Butyl 4FF	SH001C47	4.7ml,1pcs	
HiPur Butyl 4FF	SH001C20	20ml,1pcs	
Butyl Beads HF	SH016025	25ml	Suitable for the separation of biomolecules with aliphatic ligands, the highly rigid agarose microspheres can withstand higher flow rates and provide enhanced chemical stability.
	SH016100	100ml	
	SH016500	500ml	
	SH01601L	1L	
	SH01610L	10L	

Products	Cat.No.	Size	Applications
HiPur Butyl HF	SH016C20	20ml,1pcs	Packed with Butyl Beads HF, the prepacked column features standard fittings for compatibility with a wide range of low-to-medium pressure chromatography systems, simplifying customer operation.
PreCap Butyl HF	SH016C11	1×1ml	
	SH016C51	5×1ml	
	SH016C15	1×5ml	
	SH016C55	5×5ml	
HiSelect Butyl HF	SH016C47	4.7ml,1pcs	
Smac Butyl 40	SH014025	25ml	Engineered for the separation of biomolecules with aliphatic ligands, this chromatography resin delivers high binding capacity and small particle size, ensuring reliable performance for industrial-scale purification processes.
	SH014100	100ml	
	SH014500	500ml	
	SH01401L	1L	
	SH01410L	10L	
HiSelect Smac Butyl 40	SH014C47	4.7ml,1pcs	Packed with Smac Butyl 40, the column features standard fittings for seamless compatibility with diverse low-to-medium pressure chromatography systems, streamlining user operation.
HiPur Smac Butyl 40	SH014C20	20ml,1pcs	
PreCap Butyl 40	SH014C11	1×1ml	
	SH014C51	5×1ml	
	SH014C15	1×5ml	
	SH014C55	5×5ml	
Butyl-S Beads 6FF	SH012005	5ml	Designed for binding and elution of relatively hydrophobic molecules under moderately low salt conditions, suitable for separation or purification of various biomolecules at laboratory or process scales.
	SH012025	25ml	
	SH012100	100ml	
	SH01201L	1L	
	SH01210L	10L	
PreCap Butyl-S 6FF	SH012C11	1×1m	
	SH012C51	5×1ml	
	SH012C15	1×5ml	
	SH012C55	5×5ml	
HiSelect Butyl-S	SH012C47	4.7ml,1pcs	
HiPur Butyl-S	SH012C20	20ml,1pcs	

Octyl

Product Information

Products	Cat.No.	Size	Applications
Octyl Beads 4FF	SH003025	25ml	Octyl Beads 4FF is an aliphatic hydrophobic interaction medium and has the medium hydrophobicity to the substances.
	SH003100	100ml	
	SH003500	500ml	
	SH00301L	1L	
PreCap Octyl 4FF	SH003C11	1×1ml	The columns have the standard interface that can be adapted to the liquid chromatography systems, such as Smart GO™ and Smart PUR™.
	SH003C51	5×1ml	
	SH003C15	1×5ml	
	SH003C55	5×5ml	
HiSelect Octyl 4FF	SH003C47	4.7ml,1pcs	
HiPur Octyl 4FF	SH003C20	20ml,1pcs	

Phenyl

Product Information

Products	Cat.No.	Size	Applications
Phenyl Beads 6FF (Low Sub)	SH004025	25ml	Phenyl Beads 6FF is suitable for separation of hydrophobic proteins. 1)According to the selectivity and binding capacity required for separation, there are two levels of density of the ligand phenyl. 2)The medium with low substitution (LS) and high substitution (HS) are composed of 90 um highly cross-linked agarose beads. 3)Phenyl is coupled to the uncharged agarose beads by ether bond. 4)The medium has high resolution and binding capacity. The prepacked columns are ready for use.
	SH004100	100ml	
	SH004500	500ml	
	SH00401L	1L	
PreCap Phenyl LS 6FF	SH004C11	1×1ml	
	SH004C51	5×1ml	
	SH004C15	1×5ml	
	SH004C55	5×5ml	
HiSelect Phenyl 6FF LS	SH004C47	4.7ml,1pcs	
HiPur Phenyl 6FF LS	SH004C20	20ml,1pcs	
Phenyl Beads 6FF (High Sub)	SH006025	25ml	
	SH006100	200ml	
	SH006500	500ml	
	SH00601L	1L	
PreCap Phenyl HS 6FF	SH006C11	1×1ml	
	SH006C51	5×1ml	
	SH006C15	1×5ml	
	SH006C55	5×5ml	
HiSelect Phenyl 6FF HS	SH006C47	4.7ml,1pcs	
HiPur Phenyl 6FF HS	SH006C20	20ml,1pcs	
PreCap Select	SH009CS	4×1ml	PreCap Select content of four 1ml prepacked columns, including PreCap Butyl 4FF, PreCap Octyl 4FF, PreCap Phenyl LS 6FF and PreCap Phenyl HS 6FF.
Phenyl Beads HF(High Sub)	SH015025	25ml	Suitable for the separation and purification of proteins with aromatic ligands, the highly rigid agarose microspheres withstand higher flow rates and provide enhanced chemical stability.
	SH015100	100ml	
	SH015500	500ml	
	SH01501L	1L	
	SH01510L	10L	
HiSelect Phenyl HF HS	SH015C47	4.7ml,1pcs	Packed with Phenyl Beads HF (High Sub), the prepacked column features standard fittings for compatibility with a wide range of low-to-medium pressure chromatography systems, enhancing user-friendliness.
HiPur Phenyl HF HS	SH015C20	20ml,1pcs	
PreCap Phenyl HF (HS)	SH015C11	1×1ml	
	SH015C51	5×1ml	
	SH015C15	1×5ml	
	SH015C55	5×5ml	
Phenyl Beads HF(Low Sub)	SH018025	25ml	Suitable for the separation and purification of proteins with aromatic ligands, the highly rigid agarose microspheres withstand higher flow rates and provide enhanced chemical stability.
	SH018100	100ml	
	SH018500	500ml	
	SH01801L	1L	
	SH01810L	10L	
HiSelect Phenyl HF LS	SH018C47	4.7ml,1pcs	Packed with Phenyl Beads HF (Low Sub), the pre-packed column features standard fittings for compatibility with diverse low-to-medium pressure chromatography systems, simplifying user operation.
HiPur Phenyl HF LS	SH018C20	20ml,1pcs	
PreCap Phenyl HF (LS)	SH018C11	1×1ml	
	SH018C51	5×1ml	
	SH018C15	1×5ml	
	SH018C55	5×5ml	
Smac Phenyl 40	SH013025	25ml	Optimized for the separation and purification of proteins bearing aromatic ligands, this resin delivers high binding capacity and small particle size, making it a reliable solution for industrial-scale purification.
	SH013100	100ml	
	SH013500	500ml	
	SH01301L	1L	
	SH01310L	10L	
HiSelect Smac Phenyl 40	SH013C47	4.7ml,1pcs	Packed with smac phenyl 40, the column features standard fittings for seamless compatibility with diverse low-to-medium pressure chromatography systems, streamlining user operation.
HiPur Smac Phenyl 40	SH013C20	20ml,1pcs	
PreCap Phenyl 40	SH013C11	1×1ml	
	SH013C51	5×1ml	
	SH013C15	1×5ml	
	SH013C55	5×5ml	

1.4 Size Exclusion Chromatography

Size exclusion chromatography (SEC), also known as gel filtration or molecular sieve chromatography, plays a vital role in separating molecules based on size as they pass through an SEC-packed column. Separation is mainly based on the size and shape of the samples, with smaller molecules being more delayed than larger ones.

Smartarose

Smartarose is a gel filtration medium based on agarose beads, providing a broad range of separation capabilities. It consists of a porous matrix of spherical particles with excellent chemical stability and low non-specificity. By controlling the agarose concentration and degree of cross-linking, Smartarose Beads with different pore sizes can be prepared, enabling the effective separation of proteins with different molecular weights.

Products	Separation Range (Da) (globulin)	Recommended Flow rate	Working pH
Smartarose 4B	70000-20×10^6	<30	4-9
Smartarose 6B	10000-4×10^6	<30	4-9
Smartarose CL-4B	70000-20×10^6	<50	3-13
Smartarose CL-6B	10000-4×10^6	<80	3-13
Smartarose 4FF	40000-30×10^6	150-250	2-12
Smartarose 6FF	10000-4×10^6	200-400	2-12

Product Information

Products	Cat.No.	Size	Applications
Smartarose 4B	SEC0060	25ml	Smartarose 4B and 6B are gel filtration media based on agarose beads. They exhibit low nonspecificity and can be used for the separation of proteins, polysaccharides, and substances with different molecular weights.
	SEC0061	100ml	
	SEC0062	500ml	
	SEC0063	1L	
	SEC0064	10L	
Smartarose 6B	SEC0070	25ml	
	SEC0071	100 ml	
	SEC0072	500 ml	
	SEC0073	1L	
	SEC0074	10L	
Smartarose CL-4B	SEC0080	25ml	Smartarose CL-4B and CL-6B are cross-linked derivatives of Smartarose 4B and 6B, offering greater chemical and physical stability than the original products series. These CL variants can withstand certain concentrations of organic solvents, and they can be cleaned in place (CIP) with sodium hydroxide or sterilized. They are commonly used for the separation of large proteins, peptides, and polysaccharides, as well as for molecules that cannot be solubilized or agglomerated in aqueous solutions, and for molecular weight determination.
	SEC0081	100ml	
	SEC0082	500ml	
	SEC0083	1L	
	SEC0084	10L	
Smartarose CL-6B	SEC0090	25ml	
	SEC0091	100ml	
	SEC0092	500ml	
	SEC0093	1L	
	SEC0094	10L	
Smartarose 4FF	SEC0100	25ml	Smartarose 4FF and 6FF are based on highly cross-linked 4B and 6B agarose beads, exhibiting excellent physical and chromatographic properties. Due to their adaptability to various production processes and great batch repeatability, Smartarose 4FF and 6FF are widely utilized in industrial production. They are particularly effective for purifying large molecules, such as plasmids, recombinant proteins, and viruses.
	SEC0101	100ml	
	SEC0102	500ml	
	SEC0103	1L	
	SEC0104	10L	
HiSelect Smartarose 4FF	SEC010C47	4.7ml,1pcs	
HiPur Smartarose 4FF	SEC010C20	20ml,1pcs	
Smartarose 6FF	SEC0110	25ml	
	SEC0111	100ml	
	SEC0112	500ml	
	SEC0113	1L	
	SEC0114	10L	
HiSelect Smartarose 6FF	SEC011C47	4.7ml,1pcs	
HiPur Smartarose 6FF	SEC011C20	20ml,1pcs	

Smartdex

Smartdex is a size-exclusion chromatography medium based on dextran. Smartdex beads feature a three-dimensional network structure formed by cross-linked dextran and a cross-linking agent through ether bonds, resulting in a resin with excellent selectivity and high resolution. Beads with a higher degree of cross-linking have smaller pore sizes, allowing smaller molecules to enter the bead interiors, while larger molecules pass directly through the bead exterior.

Products	Separation Range(Da) (globulin)	Separation Range(Da) (linear dextran)	Swelling Volume (ml/g)	Maximum Flow Rate	Working pH
Smartdex G-10	700	700	2-3	150	2-13
Smartdex G-15	1,500	1,500	2.5-3.5	150	2-13
Smartdex G-25	1,000-5,000	100-5,000	4-6	100	2-13
Smartdex G-50	1,000-30,000	500-10,000	9-11	100	2-13
Smartdex G-75	3,000-70,000	1,000-50,000	12-15	50	2-10
Smartdex G-100	4,000-150,000	1,000-100,000	15-20	50	2-10

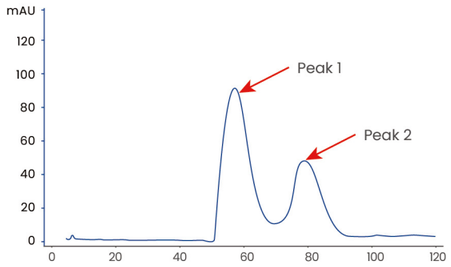
Product Information

Products	Cat.No.	Size	Applications
Smartdex G-10	SEC014S2	25g	Separation and purification of polypeptide and small molecule samples.
	SEC0141	100g	
	SEC0145	500g	
	SEC0146	1Kg	
	SEC0147	10Kg	
Smartdex G-15	SEC013S2	25g	
	SEC0131	100g	
	SEC0135	500g	
	SEC0136	1Kg	
	SEC0137	10Kg	
Smartdex G-25 (Coarse)	SEC001S2	25g	Smartdex G-25 is a gel filtration medium based on cross-linked dextran. Coarse particles provide a higher flow rate, while fine particles offer greater resolution. They are mainly used for separating substances of different molecular weights, such as in desalting and buffer exchange applications.
	SEC0011	100g	
	SEC0015	500g	
	SEC0016	1Kg	
	SEC0017	10Kg	
Smartdex G-25 (Medium)	SEC003S2	25g	
	SEC0031	100g	
	SEC0035	500g	
	SEC0036	1Kg	
	SEC0037	10Kg	
Smartdex G-25 (Fine)	SEC005S2	25g	
	SEC0051	100g	
	SEC0055	500g	
	SEC0056	1Kg	
	SEC0057	10Kg	
Smartdex G-50 (Medium)	SEC017S2	25g	They are mainly used for separating substances of different molecular weights, such as polypeptides, enzymes, and proteins.
	SEC0171	100g	
	SEC0175	500g	
	SEC0176	1Kg	
	SEC0177	10Kg	
Smartdex G-50 (Fine)	SEC021S2	25g	
	SEC02111	100g	
	SEC02112	500g	
	SEC02113	1Kg	
	SEC02114	10Kg	
Smartdex G-75	SEC012S2	25g	
	SEC0121	100g	
	SEC0125	500g	
	SEC0126	1Kg	
	SEC0127	10Kg	
Smartdex G-100	SEC015S2	25g	Smartdex G-100 is commonly used for purification and separation of proteins and polysaccharides, as well as for molecular weight determination.
	SEC0151	100g	
	SEC0155	500g	
	SEC0156	1Kg	
	SEC0157	10Kg	
Smartdex LH-20	SEC0161	25g	Smartdex LH-20 can be used for separation of organic compounds with different molecular weights.
	SEC0162	100g	
	SEC0163	1Kg	
	SEC0164	10Kg	

Agarose-dextran composite SEC resin

The Ultradex 200 Pre-packed Column is designed for high-resolution purification of large proteins. It is packed with Ultradex 200 size exclusion chromatography media, an agarose-dextran composite microsphere. This medium offers high resolution, excellent chemical stability, low non-specific binding, and easy scalability. It is ideal for efficient, high-resolution separation of monoclonal antibodies, viral vectors, and other biomolecules with molecular weights ranging from 10–600 kDa (globular proteins).

Example: PrePacked Column Ultradex 200 16/600



Column: PrePacked Column Ultradex 200 16/600
Purification Buffer: PBS
Sample: Antibody sample

Peak 1: Target antibody after separation
Peak 2: Fragment impurities after separation

Fig. 1-19 Mouse Serum Sample Purification

Product Information

Products	Cat.No.	Size	Applications
PrePacked Column Ultradex 200 16/600	SEC052C16/60	120ml	It is ideal for efficient, high-resolution separation of monoclonal antibodies, viral vectors, and other biomolecules with molecular weights ranging from 10–600 kDa (globular proteins).
PrePacked Column Ultradex 200 26/600	SEC052C26/60	320ml	
Ultradex 200	SEC0521	25 ml	
	SEC0522	100 ml	
	SEC0523	500 ml	
	SEC0524	1 L	
	SEC0525	10 L	

Desalting Column

Smartdex G-25 is effective for separating substances with molecular weights below 5000 Da, making it ideal for the rapid removal of small molecular impurities, residues, by-products, and for buffer exchange. Various desalting column formats are available to suit experimental needs, including Prepacked Desalting columns, SpinDesalt columns, and PreCap Desalting columns.

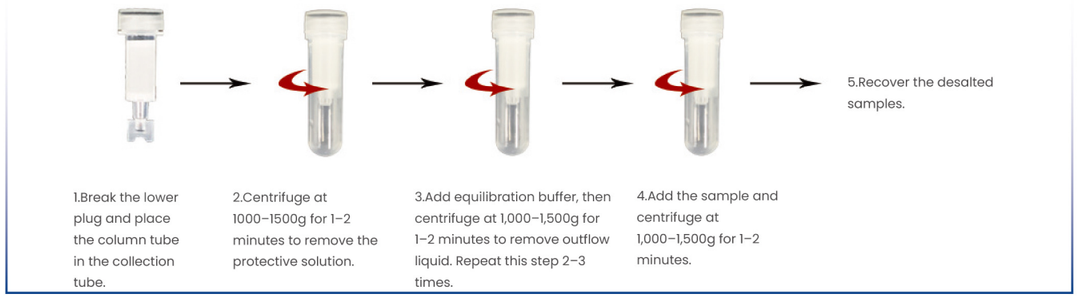


Fig. 1-20 Workflow of the Centrifugal Desalting Column.

Products	0.5ml SpinDesalt Column	 3ml SpinDesalt Column	 10ml SpinDesalt Column	 P96 SpinDesalt Column	 8.3ml Prepacked Desalting Column	1ml PreCap Desalting	 5ml PreCap Desalting	 20ml HiPur Desalting
Required Equipment	Centrifuge				Gravity column rack	Protein purifier		
Loading volume	100-200 µl	350 µl-750 µl	1-2.5 ml	60-180 µl	1.0-2.5 ml	100-300 µl	500-1500 µl	2-6 ml
Time	5-10 min	10-15 min			10-20 min	10-30 min		
Volume change	Unchanged				Dilute 1.5-3 times	Dilute 1.5-2 times		
Application	Fast medesalting		Fast desalting of small volume	High throughput fast desalting of small volume	Fast desalting of middle volume	Fast desalting of small volume		Fast desalting of middle volume

Fig. 1-21 Comparison of different protein desalting methods.

Product Information

Products	Cat.No.	Size	Applications
PreCap Desalting (Smartdex G-25)	SEC018C11	1×1ml	They are pre-packed columns and mainly used for separating substances of different molecular weights, such as in desalting and buffer exchange applications.
	SEC018C51	5×1ml	
	SEC018C15	1×5ml	
	SEC018C55	5×5ml	
	SEC018CS	3×1ml+1×5ml	
HiSelect Desalting	SEC003C47	4.7ml,1pcs	
HiPur Desalting	SEC003C20	20ml,1pcs	
Prepacked Desalting Column	SEC003C1	8.3ml,1pcs	They are pre-packed columns that use gravity for desalting.
	SEC003C2	8.3ml,5pcs	
	SEC003C3	8.3ml,20pcs	
SpinDesalt Column	SEC02303	3T	They are pre-packed columns that use centrifuge for desalting.
	SEC02301	50T	
SpinDesalt Column-3	SEC04601	1pcs	
	SEC04602	5pcs	
	SEC04603	20pcs	
SpinDesalt Column-10	SEC03201	1pcs	
	SEC03202	5pcs	
	SEC03203	20pcs	
SpinDesalt Column-P96	SEC04701	1Plate	
	SEC04702	5Plates	

1.5 Multimodal Chromatography purification resin

Multimodal chromatography resin have more than one interaction exists between the stationary phase and the analyte. The ligands employed in these resins have different modes of interaction during purification, including size exclusion, affinity, ion exchange, and hydrophobic interactions. These diverse interactions enhance selectivity throughout the purification process.

SmartCore 700 (Polymer matrix)

SmartCore 700 can be used in the intermediate purification and polishing of viruses and other large biomolecules. The resin features a functional core surrounded by a hydrophilic outer layer, which prevents larger molecules from entering the core. In contrast, smaller molecules and impurities can access the core, where they bind to the hydrophobic and positively charged octylamine ligands. The molecular size cut-off for proteins is approximately 690 kDa.

Product Information

Products	Cat.No.	Size	Applications
SmartCore 700	SEC0220	25ml	SmartCore 700 multimodal chromatography resins is designed for intermediate purification and polishing of viruses and other large biomolecules. Known for its higher flow rate, SmartCore 700 could significantly improve production efficiency, and is suitable for large-scale production.
	SEC0221	100ml	
	SEC0222	500ml	
	SEC0223	1L	
	SEC0224	10L	
PreCap SmartCore 700	SEC022C11	1×1ml	
	SEC022C51	5×1ml	
	SEC022C15	1×5ml	
	SEC022C55	5×5ml	
HiSelect SmartCore 700	SEC022C47	4.7ml,1pcs	
HiPur SmartCore 700	SEC022C20	20ml,1pcs	

Smac Core 700 (Highly rigid agarose spheres matrix)

Smac Core 700 can be used in the intermediate purification and polishing of viruses and other large biomolecules. The resin features a functional core surrounded by a hydrophilic outer layer, which prevents larger molecules from entering the core. In contrast, smaller molecules and impurities can access the core, where they bind to the hydrophobic and positively charged octylamine ligands. The molecular size cut-off for proteins is approximately 690 kDa.

Product Information

Products	Cat.No.	Size	Applications
Smac Core 700	SEC0281	25ml	Smac Core 700 utilizes a core bead design, with the core activated by octylamine and a ligand-free outer layer. This multimodal chromatography medium is ideal for intermediate purification and polishing of large biomolecules in flow-through mode.
	SEC0282	100ml	
	SEC0283	500ml	
	SEC0284	1L	
PreCap Smac Core 700	SEC028C11	1×1ml	
	SEC028C51	5×1ml	
	SEC028C15	1×5ml	
	SEC028C55	5×5ml	

Smac Core 400 (Highly rigid agarose spheres matrix)

Smac Core 400 can be used in the intermediate purification and polishing of viruses and other large biomolecules. The resin features a functional core surrounded by a hydrophilic outer layer, which prevents larger molecules from entering the core. In contrast, smaller molecules and impurities can access the core, where they bind to the hydrophobic and positively charged octylamine ligands. The molecular size cut-off for proteins is approximately 400 kDa.

Product Information

Products	Cat.No.	Size	Applications
Smac Core 400	SEC0291	25ml	Designed for the purification of albumin, interferons, nucleotide-requiring enzymes, α2-macroglobulin, coagulation factors, and other related biomolecules.
	SEC0292	100ml	
	SEC0293	500ml	
	SEC0294	1L	
	SEC0295	10L	
PreCap Smac Core 400	SEC029C11	1×1ml	
	SEC029C51	5×1ml	
	SEC029C15	1×5ml	
	SEC029C55	5×5ml	
HiSelect Smac Core 400	SEC029C47	4.7ml	
HiPur Smac Core 400	SEC029C20	20ml,1pcs	

Smac MMA

Smac MMA is a multimodal strong anion exchange resin with ionic interaction, hydrogen bond, hydrophobic interaction. Smac MMA can remove key impurities such as DNA, host cell proteins (HCP), leached protein A, aggregates, and viruses in post-protein A purification steps. It can also be used for fine purification of other biomolecules, such as the removal of dimers, polymers, host cell proteins, and nucleic acids.

Product Information

Products	Cat.No.	Size	Applications
Smac MMA	SI031025	25ml	Smac MMA can be used for moderate and fine purification of monoclonal antibodies, as well as for the fine purification of other biomolecules.
	SI031100	100ml	
	SI031500	500ml	
	SI03101L	1L	
	SI03110L	10L	
lexCap Smac MMA	SI031C11	1×1ml	
	SI031C51	5×1ml	
	SI031C15	1×5ml	
	SI031C55	5×5ml	
HiSelect Smac MMA	SI031C47	4.7ml,1pcs	
HiPur Smac MMA	SI031C20	20ml,1pcs	

Smac MMC

Smac MMC is a multimodal weak cation exchange resin with ionic interaction, hydrogen bond, hydrophobic interaction. It can be used for fast and efficient protein purification. The Smac MMC has the following characteristics:

Product Features

- Unique selectivity compared to conventional ion exchange media.
- Easy to optimize and scale up.
- High dynamic binding capacity under high conductivity conditions.
- Designed to meet industrial demands for supply security, consistent performance, and regulatory support.

Product Information

Products	Cat.No.	Size	Applications
Smac MMC	SI033025	25ml	Smac MMC can be used for fast and efficient protein purification.
	SI033100	100ml	
	SI033500	500ml	
	SI03301L	1L	
	SI03310L	10L	
IexCap Smac MMC	SI033C11	1×1ml	
	SI033C51	5×1ml	
	SI033C15	1×5ml	
	SI033C55	5×5ml	
HiSelect Smac MMC	SI033C47	4.7ml,1pcs	
HiPur Smac MMC	SI033C20	20ml,1pcs	
Smac MMC 40	SI032025	25ml	Smac MMC 40 can be used for moderate and fine purification of monoclonal antibodies. The product has high binding ability selectivity over a wide range of pH and salt concentrations.
	SI032100	100ml	
	SI032500	500ml	
	SI03201L	1L	
	SI03210L	10L	
Iexcap Smac MMC 40	SI032C11	1×1ml	
	SI032C15	1×5ml	
	SI032C51	5×1ml	
HiSelect Smac MMC 40	SI032C55	5×5ml	
HiPur Smac MMC 40	SI032C47	4.7ml,1pcs	
	SI032C20	20ml,1pcs	

Polymer-Based Chromatography Resin

Phmac series hydrophobic interaction chromatography (HIC)resin

Phmac series ion exchange chromatography (IEC) resin

Smart PS series ion exchange chromatography (IEC)resin

Smart PS series reversed phase chromatography (RPC)resin

02

Polymer chromatography resins are primarily used in the preparation and purification of small molecules such as peptides, chemical drugs, and natural products, as well as biomacromolecules. The success of production depends on economical and efficient purification and separation solutions. Resin and process selection must ensure safety and effectiveness, enabling the efficient removal of process-related impurities, including host cell proteins, residual DNA, viruses, and endotoxins, while preserving the activity and recovery yield of the target product. The polymer chromatography resins developed by smart-lifesciences incorporate technologies in matrix synthesis, surface hydrophilicity modification, and ligand coupling, conferring excellent hydrophilicity, high binding capacity, long service life, and high flow performance. These resins significantly improve downstream purification efficiency, reduce overall process costs, and deliver substantial economic value.

2.1 Phmac Series HIC Resin

Smart-lifesciences has launched a product featuring monodisperse polymethacrylate microspheres as the base matrix, coupled with hydrophobic ligands such as butyl and phenyl groups. This product operates by adsorbing biomolecules under high-salt conditions and eluting them under low-salt conditions. It exhibits excellent biocompatibility, high binding capacity, strong chemical stability, and superior mechanical strength. It can be widely applied in the separation and purification of antibodies, recombinant proteins, vaccines, peptides, nucleic acids, and more.

Product Advantages

1. Monodisperse microspheres offer superior batch-to-batch consistency.
2. High mechanical strength supports higher flow rates and operating pressures, improving purification efficiency.
3. Low compression coefficient ensures a stable column bed.
4. Excellent alkali resistance extends resin lifespan and reduces production costs.
5. Comprehensive product specifications, supported by professional customization services, meet diverse application requirements.

Product Description

Product	Butyl Phmac 30 Beads	Phenyl Phmac 30 Beads	Butyl Phmac 60 Beads	Phenyl Phmac 60 Beads
Material	PGMA			
Type	Butyl	Phenyl	Butyl	Phenyl
Particle Size (μm)	~30μm		~60μm	
Pore Size (nm)[1]	50(XS)/100(S)/200(M)/500(L)nm			
Recommended Flow Rate Range	50~300cm/h		100~600 cm/h	
Static Binding Capacity[2] (mg Lys/ml medium)	~ 45(XS) ~ 30(S) ~ 20(M)	~ 55(XS) ~ 30(S) ~ 20(M)	~ 40(XS) ~ 25(S) ~ 15(M) ~ 10(L)	~ 50(XS) ~ 25(S) ~ 15(M) ~ 10(L)
pH Stability[2]	2-13			
Maxi Pressure	≤1 Mpa		≤0.8 Mpa	
Chemical Stability	Compatible with water and mixed solvents containing ethanol, acetonitrile, acetone, etc. Commonly used buffer systems: Tris, phosphate, acetate buffer systems.			
Application Range	Widely applied in the separation and purification of antibodies, recombinant proteins, vaccines, peptides,nucleic acids, etc.			
Storage Conditions	4-35 ºC, inºC 50 % (v/v) 20 % ethanol.			

1.Dynamic Binding Capacity is measured using Lysozyme, with data for different pore sizes provided in parentheses.
2.pH Stability Range refers to the applicable pH intervals for operation, regeneration, and Cleaning In Place (CIP).

Application Case 1: Capture of Fusion Protein Supernatant Expressed in E. coli — Butyl Phmac Beads

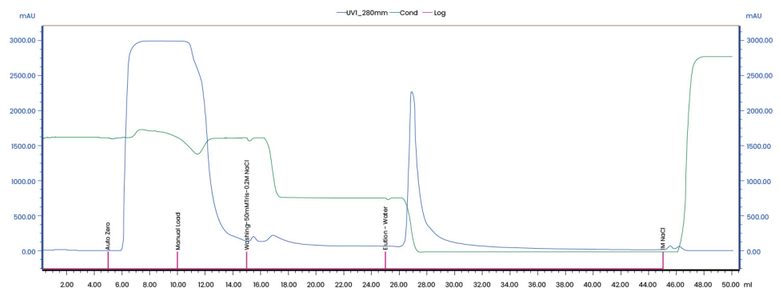


Fig. 2-1 Capture of Fusion Protein Supernatant Expressed in E. coli — Butyl Phmac Beads

Conclusion:

- Post-capture sample purity is significantly improved.
- Two analytical methods indicate/demonstrate that purity is increased to greater than 92%.
- The yield exceeds 90%, meeting the expected targets/specifications for both yield and purity.

Application Case 2: Purification of Fusion Protein after Cleavage — Butyl Phmac Beads

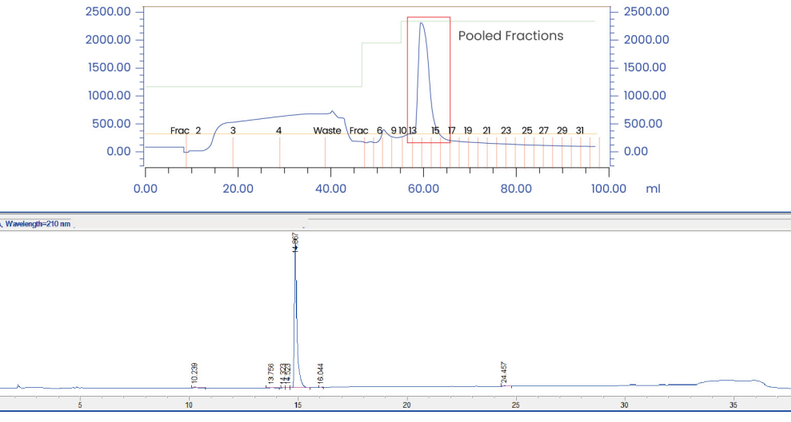


Fig. 2-2 Purification of Fusion Protein after Cleavage — Butyl Phmac Beads

Conclusion:

- No target protein was detected in the flow-through fraction during sample loading.
- Purity > 90%, yield > 90%.
- CIP (Cleaning In Place) indicates almost no loss of the main component.

Product Information

Products	Product Code	Resin Specifications	Pre-packed columns	Application
Butyl Phmac 30 Beads(XS)	SH054	5ml,25ml,100ml,500ml,1L,10L	1ml,5ml,4.7ml,20ml	Widely used in the separation and purification of antibodies, recombinant proteins, plasmids, viruses, vaccines, peptides, nucleic acids, etc.
Butyl Phmac 30 Beads(S)	SH051			
Phenyl Phmac 30 Beads(XS)	SH055			
Phenyl Phmac 30 Beads(S)	SH052			
Butyl Phmac Beads	SH019			
Butyl Phmac 60 Beads(S)	SH040			
Phenyl Phmac 60 Beads(XS)	SH039			
Phenyl Phmac 60 Beads(S)	SH049			

2.2 Phmac Series Ion Exchange Chromatography (IEC) Resin

Phamc Ion Exchange Resins employ a hydrophilic polymethacrylate matrix with a hydroxyl-rich surface, enabling efficient coupling with various ion exchange functional groups, including DEAE, Q, CM, and SP. These resins combine high mechanical strength, excellent hydrophilicity, and extremely low nonspecific adsorption, supporting rapid mass transfer and high binding capacity even under high flow-rate conditions. Designed specifically for the fine purification of biomacromolecules (e.g., antibodies, vaccines, recombinant proteins) and active components from traditional Chinese medicine, they maintain outstanding stability under stringent cleaning and regeneration conditions, offering an ideal chromatography solution for enhancing downstream purification efficiency and product purity.

Key Features of the Phmac Series Ion Exchange Resins:

- High dynamic binding capacity. Two particle size options (30 μm and 60 μm) to meet different chromatography requirements.
- Low compression coefficient ensures a stable column bed.
- High rigidity, enabling operation at higher flow rates and pressures to enhance process efficiency.
- Excellent alkali resistance extends resin lifespan and reduces production costs.

Product Description

Resin	Phmac 30 SP (S)/(M)/(L)	Phmac 30 CM (S)/(M)/(L)	Phmac 30 Q (S)/(M)/(L)	Phmac 30 DEAE (S)/(M)/(L)	Phmac 60 SP (XS)/(S)/(M)/(L)	Phmac 60 CM (XS)/(S)/(M)/(L)	Phmac 60 Q (XS)/(S)/(M)/(L)	Phmac 60 DEAE (XS)/(S)/(M)/(L)
Ion Exchange Type	Strong Cation Exchange	Weak Cation Exchange	Strong Anion Exchange	Weak Anion Exchange	Strong Cation Exchange	Weak Cation Exchange	Strong Anion Exchange	Weak Anion Exchange
Ligand	$-SO_3^-$	$-COO^-$	$-N^+(CH_3)_3$	$-N^+H(CH_3)_2$	$-SO_3^-$	$-COO^-$	$-N^+(CH_3)_3$	$-N^+H(CH_3)_2$
Matrix	PGMA				PGMA			
Particle Size	~30μm				~60μm			
Pore Size	100(S)/200(M)/500(L) nm				50(XS)/100(S)/200(M)/500(L)nm			
Ion Capacity	0.15-0.25 mmol/ml							
DBC	S,M≥80 mg/ml,L≥50 mg/ml (lysozyme)		S,M≥80 mg/ml,L≥50 mg/ml (BSA)		S,M≥80 mg/ml,L≥50 mg/ml (lysozyme)		S,M≥80 mg/ml,L≥50 mg/ml (BSA)	
Maximum Pressure Tolerance	1MPa				0.5MPa			
CIP	0.5M NaOH							
Recommended Flow Rate	50-300cm/h				150-750cm/h			
pH Stability	2-12							
Chemical Stability	Compatible with all common buffers, 1M acetic acid, 1M sodium hydroxide, 1M hydrochloric acid, 70% ethanol, 30% isopropanol, 30% acetonitrile, 1% SDS, 6M guanidine hydrochloride, 8M urea, and other common organic solvents. Avoid exposure to strong oxidizing agents.							
Storage Buffer	20% ethanol							
Storage Temperature	4-30°C							

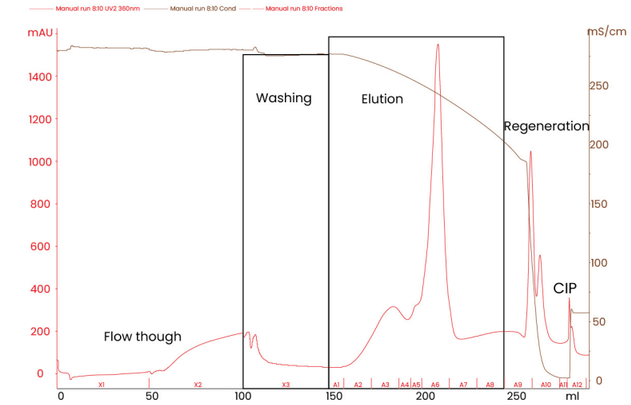


Fig. 2-3 Purification of Captured Plasmid Samples - Butyl Phmac 60 Beads (M)

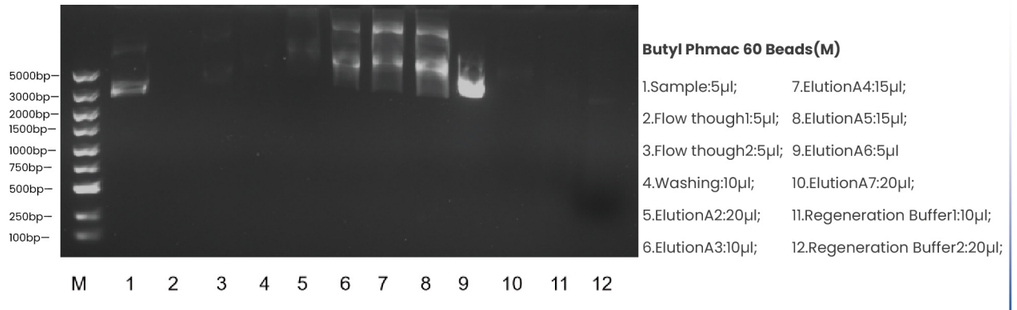


Fig. 2-4 Agarose Gel Electrophoresis of Purified Plasmid Samples

Conclusion: Purity of the sample was significantly improved after polishing, with scDNA purity reaching above 95%.

Product Information

Products	Product Code	Resin Specifications	Pre-packed columns	Applications
Phmac 30 SP(S)	SI087	5ml,25ml,100ml,500ml,1L,10L	1ml,5ml,4.7ml,20ml	Polymethacrylate-Based Cation Exchange Resin: Available in 30μm particle size with three pore size options: 100 nm (S), 200 nm (M), and 500 nm (L); and in 60μm particle size with four pore size options: 50 nm (XS), 100 nm (S), 200 nm (M), and 500 nm (L). Suitable for industrial-scale separation and purification of biomacromolecules such as antibodies, recombinant proteins, and blood products, and also applicable for removing charge variants and host cell proteins from protein samples.
Phmac 30 SP(M)	SI092			
Phmac 30 SP(L)	SI096			
Phmac 60 SP(XS)	SI123			
Phmac 60 SP(S)	SI085			
Phmac 60 SP(M)	SI105			
Phmac 60 SP(L)	SI109			
Phmac 30 CM(S)	SI089			
Phmac 30 CM(M)	SI093			
Phmac 30 CM(L)	SI097			
Phmac 60 CM(XS)	SI122			
Phmac 60 CM(S)	SI086			
Phmac 60 CM(M)	SI106			
Phmac 60 CM(L)	SI110			

Products	Product Code	Resin Specifications	Pre-packed columns	Applications
Phmac 30 Q(S)	SI081	5ml,25ml,100ml,500ml,1L,10L	1ml,5ml,4.7ml,20ml	Pnolymethacrylate-Based Anion Exchange Resin: Available in 30μm particle size with three pore size options: 100 nm (S), 200 nm (M), and 500 nm (L); and in 60μm particle size with four pore size options: 50 nm (XS), 100 nm (S), 200 nm (M), and 500 nm (L). Suitable for industrial-scale separation and purification of biomacro-molecules such as antibodies, vaccines, virus-like particles, recombinant proteins, and blood products. Also applicable for nucleic acid purification and removal of host nucleic acids and host proteins from protein samples.
Phmac 30 Q(M)	SI091			
Phmac 30 Q(L)	SI095			
Phmac 60 Q(XS)	SI124			
Phmac 60 Q(S)	SI071			
Phmac 60 Q(M)	SI104			
Phmac 60 Q(L)	SI108			
Phmac 30 DEAE(S)	SI080			
Phmac 30 DEAE(M)	SI090			
Phmac 30 DEAE(L)	SI094			
Phmac 60 DEAE(XS)	SI102			
Phmac 60 DEAE(S)	SI072			
Phmac 60 DEAE(M)	SI103			
Phmac 60 DEAE(L)	SI107			

2.3 Smart PS Series Ion Exchange Chromatography (IEC)Resin

Smart PS Series Ion Exchange Resins are based on a polystyrene-divinylbenzene copolymer matrix, which undergoes excellent hydrophilic modification before coupling with ion-exchange functional groups. These resins combine high mechanical strength with extremely low nonspecific adsorption, enabling rapid mass transfer and high binding capacity even at high flow rates. They significantly enhance purification efficiency and are suitable for high-resolution purification of biomolecules such as plasmids, peptides, nucleotides, and insulin. With outstanding stability under harsh cleaning and regeneration conditions, they serve as an ideal chromatography solution to improve downstream purification efficiency and product purity.

Advantages of the Smart PS Series Ion Exchange Resins:

- Monodisperse polystyrene-divinylbenzene matrix provides high mechanical strength and high resolution.
- Hydrophilic surface modification ensures low nonspecific adsorption.
- Low compression coefficient maintains a stable column bed.
- Low backpressure supports high-flow-rate rapid purification.
- Excellent chemical resistance extends resin service life.

Product Description

Product	Smart PS 15Q	Smart PS 15S	Smart PS 30Q	Smart PS 30S
Material	PS/DVB			
Type	$-N^+(CH_3)_3$	$-SO_3H$	$-N^+(CH_3)_3$	$-SO_3H$
Particle Size	~15μm		~30μm	
Recommended Flow Rate Range	150~750cm/h		200~950cm/h	
Dynamic Binding Capacity[1] (mg /ml medium)	~55mg/ml(BSA)	~70mg/ml(Lysozyme)	~45mg/ml(BSA)	~60mg/ml(Lysozyme)
pH Stability[2]	2-13			
Pressure Tolerance	≤6Mpa		≤3Mpa	
Chemical Stability	Compatibility: Compatible with water and mixed solvents containing ethanol, acetonitrile, acetone, etc.Commonly Used Buffer Systems: Tris, phosphate, acetate buffer systems.			
Application Range	Widely applied in the separation and purification of antibodies, recombinant proteins, vaccines, peptides, nucleic acids, insulin, etc.			
Storage Conditions	4 °C to 35 °C, in 50 % (v/v) 20 % ethanol.			

1.Dynamic Binding Capacity is measured using Lysozyme, with data for different pore sizes provided in parentheses.
2.pH Stability Range refers to the applicable pH intervals for operation, regeneration, and Cleaning In Place (CIP).

Application Case : Ion Exchange Purification of GLP-1 after Side Chain Modification

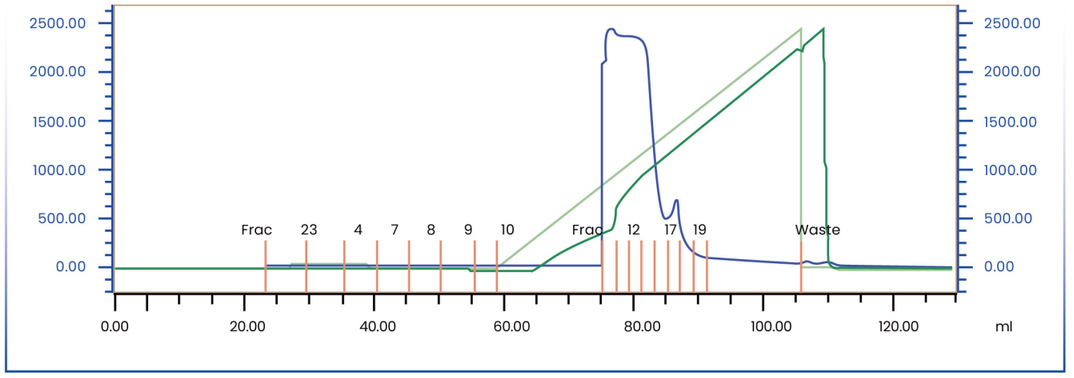


Fig. 2-5 Ion Exchange Purification of GLP-1 after Side Chain Modification

Purification using an alkaline buffer system can effectively improve the purity of the crude product after structural modification:

Products	Loading Capacity (based on pure peptide weight)	Crude Product Purity	Collected Main Peak Purity	Yield
Smart PS 15Q	20mg/ml	59%	93.8%	96%

Product Information

Products	Product Code	Resin Specifications	Pre-packed columns	Applications
Smart PS 15Q	SI066	5ml,25ml,100ml,500ml,1L,10L	1ml,5ml,4.7ml,20ml	Widely used in the separation and purification of antibodies, recombinant proteins, vaccines, peptides, nucleic acids, insulin, etc.
Smart PS 15S	SI068			
Smart PS 30Q	SI069			
Smart PS 30S	SI070			

Medium-/High-Pressure Stainless-Steel Analytical/Preparative Columns: 4.6/10/20 × 150/250 mm

2.4 Smart PS Series RPC Resin

Smart PS Series Reversed-Phase Polymeric Resins are monodisperse resins based on a highly cross-linked PS/DVB (polystyrene-divinylbenzene) matrix. They are available in multiple particle sizes and pore sizes, making them suitable for various chromatography purification fields and different purification stages. Due to their abundant phenyl structures, the Smart PS series exhibits strong hydrophobicity and excellent reversed-phase retention capability. The highly cross-linked PS/DVB structure confers outstanding mechani-cal strength and chemical stability, resulting in superior pressure resistance and compatibility with medium-to high-pressure DAC (Dynamic Axial Compression) column packing. In addition, these resins tolerate extreme acidic and alkaline conditions as well as regeneration with mixed organic solvents. They are particularly suitable for the separation and purification of highly contaminated samples, such as fermentation broths, and for samples requiring repeated regeneration under extreme conditions.

Advantages of the Smart PS Series Reversed-Phase Resins:

- Monodisperse PS/DVB matrix ensures high mechanical strength and high resolution.
- Low compression coefficient maintains a stable column bed.
- Low backpressure supports high-flow-rate rapid purification.
- Excellent chemical resistance extends resin service life.

Product Information

Product	Smart PS 10-300	Smart PS 10-500	Smart PS 15-300	Smart PS 15-500
Material	PS/DVB			
Type	Phenyl			
Particle Size	~10μm		~15μm	
Pore Size (Å)	300	500	300	500
Recommended Flow Rate Range	150~750cm/h		200~950cm/h	
pH Stability[2]	2-13			
Swelling Factor	≤3% Methanol		≤5% Methanol	
Pressure Tolerance	≤10Mpa			
Chemical Stability	Compatibility: Compatible with water and mixed solvents containing ethanol, acetonitrile, acetone, etc.Commonly Used Buffer Systems: Tris, phosphate, acetate buffer systems.			
Regeneration	Column Cleaning with Solvents of Increasing Non-Polarity:For example, ethanol/methanol/acetonitrile-water mixtures, followed by pure ethanol/methanol/acetonitrile. Alkaline Cleaning:It is recommended to rinse with 0.1-0.5 M NaOH/60 % methanol solution for 3-5 column volumes (CV), then rinse with 0.1-0.5 M HCl or acetic acid/60 % methanol solution for 3-5 CV, and finally equilibrate with the mobile phase. This is because protein aggregates and other contaminants are readily disrupted and eluted in acidic or alkaline solutions.			
Application Range	Widely used in the separation and purification of antibodies, recombinant proteins, vaccines, peptides, nucleic acids, insulin, etc.			
Storage Conditions	4 °C to 35 °C, in 50 % (v/v) 20 % ethanol.			

Note: Due to the strong hydrophobicity of polymer-based reversed-phase resins, operation with a purely aqueous mobile phase is not recommended. During chromatographic separation, ensure that the column remains continuously wetted and that the mobile phase does not run dry, as drying may cause cracking of the column bed. Such cracks can lead to uneven distribution of the sample and mobile phase upon rewetting, resulting in poor reproducibility and compromised purification performance.

Application Case: *Ion Exchange Purification of GLP-**1 after Side Chain Modification***

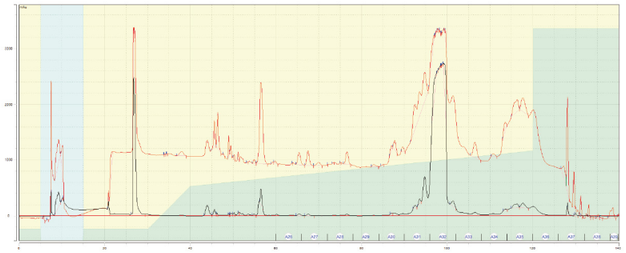


Fig. 2-6 Ion Exchange Purification of GLP-1 after Side Chain Modification

Purification using an alkaline buffer/acetonitrile system can effectively enhance the purity of the crude product following structural modification.

Fraction	Peak Area	Dilution Factor	Loading/Collection Volume (ml)	Chromatographic Purity	Yield
Original Sample	3360	5	5	72%	NA
Collected Sample	8992.8	3	3	97.69%	96.35%

Product Information

Products	Product Code	Resin Specifications	Applications
Smart PS 10-300	SH037	5ml,25ml,100ml,500ml,1L, 10L	Reverse-phase chromatographic separation of small molecule compounds, peptides, low-molecular-weight proteins, and other biomolecules.
Smart PS 10-500	SH038		
Smart PS 15-300	SH035		
Smart PS 15-500	SH036		

Stainless-Steel Analytical/Preparative Columns: 4.6/10/20 × 150/250 mm

Other Chromatography Resin

Smart C8/C18

MonosilicaC8/C18

Hydroxyapatite(CHT)

03

In response to the growing demand for spherical silica, we have developed an optimized large-scale production process that provides a high level of process control and can be applied across all smart-lifesciences silica products without compromising quality. Key parameters, including particle morphology, pore size, particle size distribution, silica purity, and surface chemistry, directly influence chromatographic performance. Therefore, to develop an excellent process, it is necessary to evaluate and optimize all these parameters to ensure batch-to-batch reproducibility of the product.

3.1 Smart C8/C18

Smart C8/C18 is a high-performance functionalized spherical silica specifically designed to meet the stringent demands of peptide purification. Engineered for both analytical and preparative chromatography, it offers exceptional resilience, efficiency, reproducibility, and scalability, making it an ideal solution for pharmaceutical, biotechnology, and research applications.

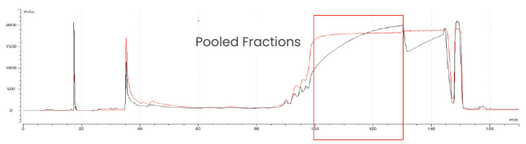
Products	Particle Size (μm)	Pore Size (Å)	Specific Surface Area (m^2/g)	Carbon Content (%)	Bonded Phase	pH
Smart C8 10-100	10	100	360-440	14	C8	2-9.5
Smart C18 10-100	10	100	360-440	22	C18	2-9.5
Smart C8 10-120	10	120	290-340	12	C8	2-9.5
Smart C18 10-120	10	120	290-340	20	C18	2-9.5
Smart C8 10-150	10	150	220-270	10	C8	2-9.5
Smart C18 10-150	10	150	220-270	18	C18	2-9.5

Application Case

Step 1 Purification

Resin: Smart 18 10-100, acetic acid–acetonitrile

·Preparative Chromatogram

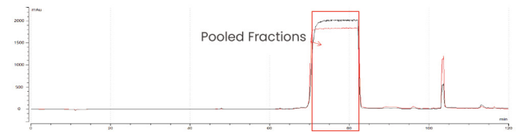


Sample	RRT0.89	RRT0.92	Pooled Fraction Purity	RRT1.06	Yield
Standard	/	/	99.288	/	/
Crude Product	0.302	0.142	59.529	0.234	/
Pooled Fraction	0.098	0.022	98.861	0.295	93.8%

Step 2 Purification

Resin: Smart 18 10-100, ammonium acetate–acetonitrile gradient

·Preparative Chromatogram



Sample	RRT0.89	RRT0.92	Pooled Fraction Purity	RRT1.05	Yield
Standard	/	/	99.288	/	/
Loading Solution	0.135	0.032	98.861	0.244	/
Pooled Fraction	0.07	0.019	**99.68**	0.111	94.7%

Product Information

Products	Product Code	Resin Specifications	Pre-Packed Column Specifications
Smart C18 10-100	SH020	25g,100g,500g,1kg	4.6/10/20mm×250mm
Smart C8 10-100	SH021		
Smart C8 10-150	SH030		
Smart C18 10-150	SH031		
Smart C8 10-120	SH043		
Smart C18 10-120	SH044		

Custom pre-packed column sizes (length and diameter adjustable) available upon request.

3.2 MonoSilica C8/C18

MonoSilica C8/C18 is a versatile, high-purity silica-based chromatography resin designed for the purification of small molecules, short nucleic acids, and peptides. It delivers well-balanced performance across key parameters, including separation efficiency, loading capacity, recovery, and mechanical strength.

Products	Bonded Phase	Particle Size (μm)	Pore Size (Å)	Product Code
MonoSilica C8 10-300	C8	10	300	SH022
MonoSilica C18 10-300	C18	10	300	SH023
MonoSilica C8 10-100	C8	10	100	SH024
MonoSilica C18 10-100	C18	10	100	SH025
Smart AQC8 10-100	C8	10	100	SH028
Smart AQC18 10-100	C18	10	100	SH029

3.3 Hydroxyapatite(CHT)

Hydroxyapatite(CHT Ⅰ,CHT Ⅱ)is a unique, rigid composite chromatography medium for downstream purification that combines ion-exchange and metal-affinity mechanisms, providing separation capabilities not achievable with conventional media. The medium can capture target proteins by calcium ions or phosphate-associated positively charged groups. It is manufactured from inorganic materials sintered at high temperatures, Hydroxyapatite contains no plant- or animal-derived components. It is widely applicable to the purification of a broad range of biomolecules, including monoclonal and polyclonal antibodies, bispecific antibodies and antibody fragments, recombinant proteins, vaccines, enzymes, nucleic acids, viral particles, and other biologics. Hydroxyapatite is available in two types—CHT I and CHT II, each offered in three particle size options. CHT I is well suited for the purification of acidic proteins, while CHT II, with its larger pore structure, is optimized for large biomolecules (>400 kDa) such as IgM, viruses, virus-like particles (VLPs), and plasmids. Hydroxyapatite media are versatile and can be applied across all stages of purification, from initial capture to high-resolution polishing.

Product Information

Products	Cat.No.	Size	Applications
Hydroxyapatite 60(CHT I 60)	SA111005	5g	It can be applied to the purification of various biomacromolecules, including monoclonal and polyclonal antibodies, bispecific antibodies, antibody fragments, recombinant proteins, vaccines, enzy mes, and nucleic acids. It is particularly suitable for the purification of acidic proteins.
	SA111020	20g	
	SA111100	100g	
	SA111500	500g	
	SA1111KG	1Kg	
Hydroxyapatite 40(CHT I 40)	SA106005	5g	
	SA106020	20g	
	SA106100	100g	
	SA106500	500g	
	SA1061KG	1Kg	
Hydroxyapatite 20(CHT I 20)	SA113005	5g	
	SA113020	20g	
	SA113100	100g	
	SA113500	500g	
	SA1131KG	1Kg	
Hydroxyapatite 60(CHT II 60)	SA112005	5g	CHT II resins feature larger pore sizes, making them suitable for purifying large-particle biomolecules (>400 kDa), such as IgM, viruses, VLPs, and plasmids.
	SA112020	20g	
	SA112100	100g	
	SA112500	500g	
	SA1121KG	1Kg	
Hydroxyapatite 40(CHT II 40)	SA107005	5g	
	SA107020	20g	
	SA107100	100g	
	SA107500	500g	
	SA1071KG	1Kg	
Hydroxyapatite 20(CHT II 20)	SA114005	5g	
	SA114020	20g	
	SA114100	100g	
	SA114500	500g	
	SA1141KG	1Kg	
PreCap CHT II 20	SA114C11	1*1ml	The prepacked columns are supplied with standard fittings and are compatible with a wide range of medium-pressure chromatography systems, including ÄKTA™, ensuring easy and reliable operation.
	SA114C15	1*5ml	
	SA114C51	5*1ml	
	SA114C55	5*5ml	
PreCap CHT II 40	SA107C11	1*1ml	
	SA107C15	1*5ml	
	SA107C51	5*1ml	
	SA107C55	5*5ml	
PreCap CHT II 60	SA112C11	1*1ml	
	SA112C15	1*5ml	
	SA112C51	5*1ml	
	SA112C55	5*5ml	
PreCap CHT I 20	SA113C11	1*1ml	
	SA113C15	1*5ml	
	SA113C51	5*1ml	
	SA113C55	5*5ml	
PreCap CHT I 40	SA106C11	1*1ml	
	SA106C15	1*5ml	
	SA106C51	5*1ml	
	SA106C55	5*5ml	
PreCap CHT I 60	SA111C11	1*1ml	
	SA111C15	1*5ml	
	SA111C51	5*1ml	
	SA111C55	5*5ml	

Magnetic Beads

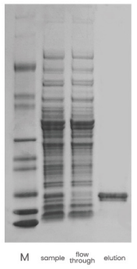
Magarose beads for protein purification

Magpoly beads for immunoprecipitation

04

4.1 Magnetic Beads

Magarose beads are superparamagnetic with rapid magnetic response, abundant hydroxyl functional groups, and uniform particle sizes, making them valuable tools in medical and molecular biology research. With particle sizes ranging from 30 to 100 μm, they are suitable for the detection and purification of target proteins.



Magnetic beads: Ni NTA Magarose Beads

Sample: His-tagged protein expressed by E. coli

Binding / Wash Buffer: 50 mM NaH_2PO_4,0.3M NaCl, 20 mM imidazole, pH 8.0

Elution Buffer: 50 mm NaH_2PO_4, 0.3 mM NaCl, 250 mM imidazole, pH 8.0

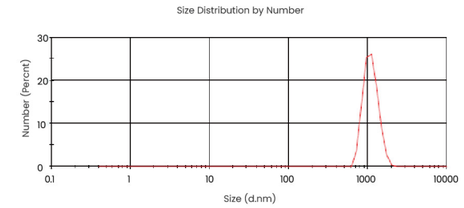
Fig.4-1 SDS-PAGE analysis of the purification of His-tagged protein using Ni-NTA Magarose Beads.

Product Information

Products	Cat.No.	Size	Characteristics (/ml medium)
Ni IDA Magarose Beads	SM001001	1ml	>40 mg His-tagged protein
	SM001005	5ml	
	SM001025	25ml	
	SM001100	100ml	
	SM00101L	1L	
Ni NTA Magarose Beads	SM008001	1ml	
	SM008005	5ml	
	SM008025	25ml	
	SM008100	100ml	
	SM00801L	1L	
Ni Smart Magarose Beads	SM025001	1ml	10 mg His-tagged protein
	SM025005	5ml	
	SM025025	25ml	
	SM025100	100ml	
	SM02501L	1L	
Glutathione Magarose Beads	SM002001	1ml	5-10 mg GST-tagged protein
	SM002005	5ml	
	SM002025	25ml	
	SM002100	100ml	
	SM00201L	1L	
rProtein A Magarose Beads	SM003001	1ml	>40mg Rabbit IgG
	SM003005	5ml	
	SM003025	25ml	
	SM003100	100ml	
	SM00301L	1L	
rProtein G Magarose Beads	SM004001	1ml	>30mg Goat IgG
	SM004005	5ml	
	SM004025	25ml	
	SM004100	100ml	
	SM00401L	1L	
Anti-DYKDDDDK Magarose Beads	SM009001	1ml	>1 mg DYKDDDDK-tagged protein
	SM009005	5ml	
	SM009025	25ml	
	SM009100	100ml	
	SM00901L	1L	
Anti-GFP Magarose Beads	SM038001	1ml	>1 mg GFP-tagged protein
	SM038005	5ml	
	SM038025	25ml	
	SM038100	100ml	
	SM03801L	1L	
NHS-Activated Magarose Beads	SM031001	1ml	>10mg Rabbit IgG
	SM031005	5ml	
	SM031025	25ml	
	SM003100	100ml	
	SM03101L	1L	

4.2 Magpoly Beads for Immunoprecipitation

Magpoly beads designed for immunoprecipitation are coupled with a high density of ligands, making them have outstanding antibody binding capacity and low nonspecific adsorption. These beads can be used for one-step antibody purification from sample mixtures. Magpoly beads are widely used in immunoprecipitation, co-immunoprecipitation, and immunoadsorption applications.



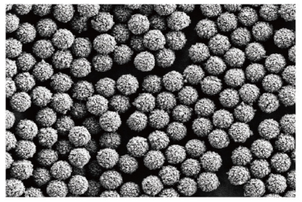


Fig. 4-2 Magpoly Beads for Immunoprecipitation

Product Information

Products	Cat.No.	Size	Characteristics
rProtein A MagPoly Beads	SM037001	1ml	>50 μg hIgG/mg Beads
	SM037005	5ml	
	SM037010	10ml	
	SM037050	50ml	
	SM037100	100ml	
	SM037500	500ml	
	SM03701L	1L	
rProtein A/G MagPoly Beads	SM015001	1ml	>50μg Rabbit IgG/mg Beads
	SM015005	5ml	
	SM015010	10ml	
	SM015050	50ml	
	SM015100	100ml	
	SM015500	500ml	
	SM01501L	1L	
Streptavidin MagPoly Beads	SM017001	1ml	Intended for immobilization of biotin and capture of biotinylated substances including proteins, antibodies, and related biomole-cules.
	SM017005	5ml	
	SM017010	10ml	
	SM017050	50ml	
	SM017100	100ml	
	SM017500	500ml	
	SM01701L	1L	
NHS-Activated MagPoly Beads	SM030001	1ml	It is pre-activated magpoly beads and can be directly used for the coupling of amino containing proteins or peptides.
	SM030005	5ml	
	SM030010	10ml	
	SM030050	50ml	
	SM030100	100ml	
	SM030500	500ml	
	SM03001L	1L	
Oligo(dT)$_{25}$Magpoly Beads	SM080001	1ml	Designed for mRNA isolation.
	SM080005	5ml	
	SM080010	10ml	
	SM080050	50ml	
	SM080100	100ml	
	SM080500	500ml	
	SM08001L	1L	
Epoxy-Activated MagPoly Beads	SM020001	1ml	It is the superparamagnetic polymer beads with epoxy groups on the surface.
	SM020005	5ml	

Instruments and Consumables

High-throughput purification equipment

Protein chromatography system

Gravity Empty Column

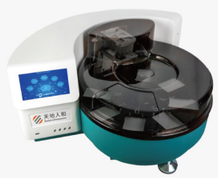
Single-layer glass column

Double-layer column (SXK series)

05

5.1
High-throughput purification equipment

MP10(ten-channel protein purification system) is suitable for process development and preparation at laboratory and industrial scales, ranging from analytical and small-scale preparation to pilot-scale operations. It utilizes chromatographic techniques such as gel filtration, ion exchange, affinity chromatography, and hydrophobic interaction chromatography to enable the separation, purification, and preparation of biomolecules including proteins, antibodies, peptides, polysaccharides, nucleic acids, as well as bioactive components from herbal medicines and natural products.



Purifier 24 is designed for the automated transfer and processing of magnetic particles in a 24-well microplate format. Each well can accommodate a maximum volume of 4 mL, enabling optimal purification of free DNA, antibodies, and antigens. This system offers enhanced flexibility for fast and reproducible results across a wide range of applications.

Purifier 96 is tailored for customers with ultra-high throughput requirements, capable of processing 500 to 1,500 samples per day per set. The machine features 8 plate sites, each independently heated to maintain sample integrity and purity. The integrated Smart Pro program allows users to easily control the instrument, minimizing operational errors. Both Purifier 24 and Purifier 96 share the same model, equipped with two magnetic rods and heating modules.

Purifier 32 uses magnetic bead separation technology. Unlike other methods that involve moving liquids, this system transfers magnetic beads between deep-well plates containing specific reagents. Magnetic rods equipped with disposable sleeves facilitate the collection, release, transfer, and incubation of magnetic beads by separating the rods from the sleeves. It can extracte high-quality nucleic acids from samples such as saliva, swabs, dried blood spots, whole blood, serum/plasma, animal and plant tissues.

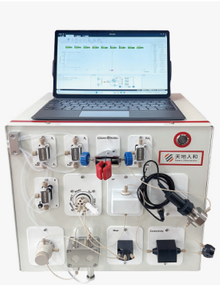
Product Information

abbreviation	Cat.No.
MP 10	E011
Purifier 96	P961001
Purifier 32	P321001
Purifier 24	P241001

5.2 Protein chromatography system

Smart GO™ is a compact liquid chromatography system with highly integrated piping design and modular layout, minimizing system dead volume and optimizing experimental space. The Vaticy operating software, with built-in parameter data of various Smart-Lifesciences pre-packed columns, making it faster and easier for users to start and operate. It is mainly used for laboratory-scale process research, and can be used to purify proteins, antibodies, vaccines, peptides, viruses, and other macromolecules, ranging from micrograms to grams in size.

Smart PUR™ is a precise and stable chromatography system with flexible expansion configurations, supporting the purification of recombinant proteins, antibodies, vaccines, nucleic acids, diagnostic materials, and other target products, from microgram to gram quantities, making it suitable for the diverse experimental studies. The Vaticy operating software, with built-in parameter data of various Smart-Lifesciences pre-packed columns, making it faster and easier for users to start and operate, and is the best partner for process development.



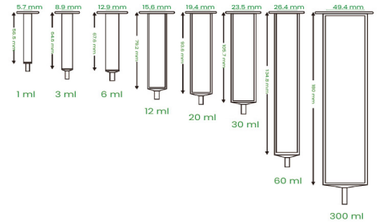
SmartPurify Lite is an efficient and intelligent protein purification device designed for applications in biopharmaceuticals, research institutions, and related fields. Featuring a modular and integrated architecture, the system optimizes laboratory space utilization. It is equipped with a 12-inch touch screen and intelligent guidance functions, supporting custom programming and one-click operation to streamline chromatography workflows. With high-precision dual-plunger pumps, a UV detector, and a real-time pressure monitoring system, it enables precise control of separation conditions, providing reliable experimental support for applications such as recombinant protein expression and antibody purification.

Product Information

Products	Cat.No.	Size
Smart GO 150	E015	unit
Smart GO 100	E016	unit
Smart GO 35	E017	unit
Smart PUR 150	E012	unit
Smart PUR 100	E013	unit
Smart PUR 35	E014	unit
SmartPurify Lite	E021	unit

5.3 Gravity Empty Column

Empty column of gravity chromatogra-							
Cat.No.	SLM001	SLM004	SLM005	SLM006	SLM007	SLM025	SLM009
Size (ml)	12 ml	1ml	3 ml	6 ml	30 ml	60 ml	300 ml
Inner diameter (mm)	15.6 mm	5.6 mm	8.9 mm	12.7 mm	22.5 mm	26.2 mm	49.4 mm
height (mm)	83 mm	55 mm	63 mm	66 mm	101 mm	134 mm	180 mm
volume (ml)	12 ml	1 ml	3 ml	6 ml	30 ml	60 ml	300 ml
Material (column tube)	polypropylene						
Material (filter membrane)	polyethylene						
Pore size of filter	50μm						
Chemical stability	It is stable in all commonly used reagents						



5.4 Single-layer glass column

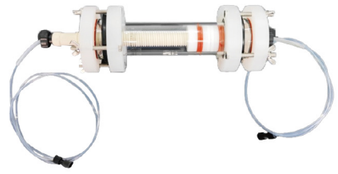
Column Structure: The empty column, upper flange, adapter (axial expansion), sealing ring, lower flange, inlet and outlet.
Material: High borosilicate glass.
Maximum Pressure: 3-5 bar.
Chemical Stability: Stable in the presence of acids, alkalis, and organic solvents (Should not be operated with solvents such as acetone, methane, ammonium hydroxide, or dichloromethane for extended periods).
Axial Expansion: The axial expansion feature allows for adjustments in packing height, thereby enhancing separation efficiency.
Operating Temperature: 0 °C - 60 °C.
Filter: 50 mesh -500 mesh, depending on the size of the medium, effectively blocking general dextran gel, agarose gel, and macroporous resin.
Cleaning: Soapy water and detergent are suitable for cleaning the columns. If the column is contaminated by protein, it can be cleaned with detergent.
Sterilization: Under 120 °C, autoclave for 20 minutes.

Product Information

Single-layer Column (S Series)					
inner diameter	Cat.No.	Size (I.D. × L mm)	inner diameter	Cat.No.	Size (I.D. × L mm)
10mm	S1020	10*200	15mm	S1520	15*200
	S1030	10*300		S1530	15*300
	S1040	10*400		S1540	15*400
	S1050	10*500		S1550	15*500
	S1060	10*600		S1560	15*600
	S1075	10*750		S1575	15*750
	S10100	10*1000		S15100	15*1000
25mm	S2520	25*200	35mm	S3520	50*200
	S2530	25*300		S3530	50*300
	S2540	25*400		S3540	50*400
	S2550	25*500		S3550	50*500
	S2560	25*600		S3560	50*600
	S2575	25*750		S3575	50*750
	S25100	25*1000		S35100	50*1000
50mm	S5020	50*200	75mm	S7530	75*300
	S5030	50*300		S7540	75*400
	S5040	50*400		S7550	75*500
	S5050	50*500		S7560	75*600
	S5060	50*600		S7575	75*750
	S5075	50*750		S75100	75*1000
	S50100	50*1000			

Product Information

Single-layer Column (S Series)		
inner diameter	Cat.No.	Size (I.D. × L mm)
100mm	S10030	100*300
	S10040	100*400
	S10050	100*500
	S10060	100*600
	S10075	100*750
	S100100	100*1000



5.5 Double-layer Column (SXK Series)

01 Uniform Flow Rate

Plunger design for ensuring homogeneous buffer distribution and reproducible packing.

02 Temperature Stability

Adapter with QuickLock mechanism for enhanced column handling and cleaning.

03 Good Column Efficiency

Fittings for direct connection to chro-matographiy systems.

04 High Chemical Tolerance

Cooling jacket for sensitive purifications.

Product Information

Double-layer Column (SXK Series)				
Cat.No.	Size (I.D. × L mm)	Pressure (bar)	Filling volume (ml)	Loading height (mm)
SXK 16/20	16*200	5	4-33	20-165
SXK 16/30	16*300	5	24-53	120-265
SXK 16/40	16*400	5	44-73	220-365
SXK 16/50	16*500	5	64-93	320-465
SXK 16/60	16*600	5	84-113	420-565
SXK 16/70	16*700	5	104-133	520-665
SXK 16/80	16*800	5	124-153	620-765
SXK 16/90	16*900	5	144-173	720-865
SXK 16/100	16*1000	5	164-193	820-965
SXK 26/20	26*200	5	10.5-86	20-165
SXK 26/30	26*300	5	63-140	120-265
SXK 26/40	26*400	5	115-190	220-365
SXK 26/50	26*500	5	167-242	320-465
SXK 26/60	26*600	5	220-295	420-565
SXK 26/70	26*700	5	273-350	520-665
SXK 26/80	26*800	5	325-400	620-765
SXK 26/90	26*900	5	377-455	720-865
SXK 26/100	26*1000	5	430-508	820-965
SXK 50/20	50*200	3	30-330	15-165
SXK 50/30	50*300	3	230-530	115-265
SXK 50/40	50*400	3	430-730	215-365
SXK 50/50	50*500	3	630-930	315-465
SXK 50/60	50*600	3	830-1130	415-565
SXK 50/70	50*700	3	1030-1330	515-665
SXK 50/80	50*800	3	1230-1530	615-765
SXK 50/90	50*900	3	1430-1730	715-865
SXK 50/100	50*1000	3	1630-1930	815-965

Double-layer Column (SXK Series)				
Cat.No.	Size (I.D. × L mm)	Pressure (bar)	Filling volume (ml)	Loading height (mm)
SXK16/20D	16*200	5	0-33	20-165
SXK16/30D	16*300	5	0-53	0-265
SXK16/40D	16*400	5	15-73	75-365
SXK16/50D	16*500	5	35-93	175-465
SXK16/60D	16*600	5	55-113	275-565
SXK16/70D	16*700	5	75-133	375-665
SXK16/80D	16*800	5	95-153	475-765
SXK16/90D	16*900	5	115-173	575-865
SXK16/100D	16*1000	5	135-193	675-965
SXK26/20D	26*200	5	0-86	0-165
SXK26/30D	26*300	5	0-140	0-265
SXK26/40D	26*400	5	38-190	75-365
SXK26/50D	26*500	5	87-242	175-465
SXK26/60D	26*600	5	138-295	275-565
SXK26/70D	26*700	5	190-350	375-665
SXK26/80D	26*800	5	240-400	475-765
SXK26/90D	26*900	5	290-455	575-865
SXK26/100D	26*1000	5	340-508	675-965
SXK50/20D	50*200	3	0-330	0-165
SXK50/30D	50*300	3	0-530	0-265
SXK50/40D	50*400	3	160-730	80-365
SXK50/50D	50*500	3	360-930	180-465
SXK50/60D	50*600	3	560-1130	280-565
SXK50/70D	50*700	3	760-1330	380-665
SXK50/80D	50*800	3	960-1530	480-765
SXK50/90D	50*900	3	1160-1730	580-865
SXK50/100D	50*1000	3	1360-1930	680-965

Product Information

SXK Series Accessories		
Products	Cat.No.	Notes
Packing reservoir	SXK1601	Compatible with SXK16 series columns
adapter	SXK1602	
bottom plunger	SXK1603	
filter	SXK1604	
filter-holder	SXK1605	
O-ring	SXK1606	
Packing connector	SXK1607	
Packing reservoir	SXK2601	Compatible with SXK26 series columns
adapter	SXK2602	
bottom plunger	SXK2603	
filter	SXK2604	
filter-holder	SXK2605	
O-ring	SXK2606	
Packing connector	SXK2607	

Products	Cat.No.	Notes
Packing reservoir	SXK5001	Compatible with SXK50 series columns
adapter	SXK5002	
bottom plunger	SXK5003	
filter	SXK5004	
fliter-holder	SXK5005	
O-ring	SXK5006	
Packing connector	SXK5007