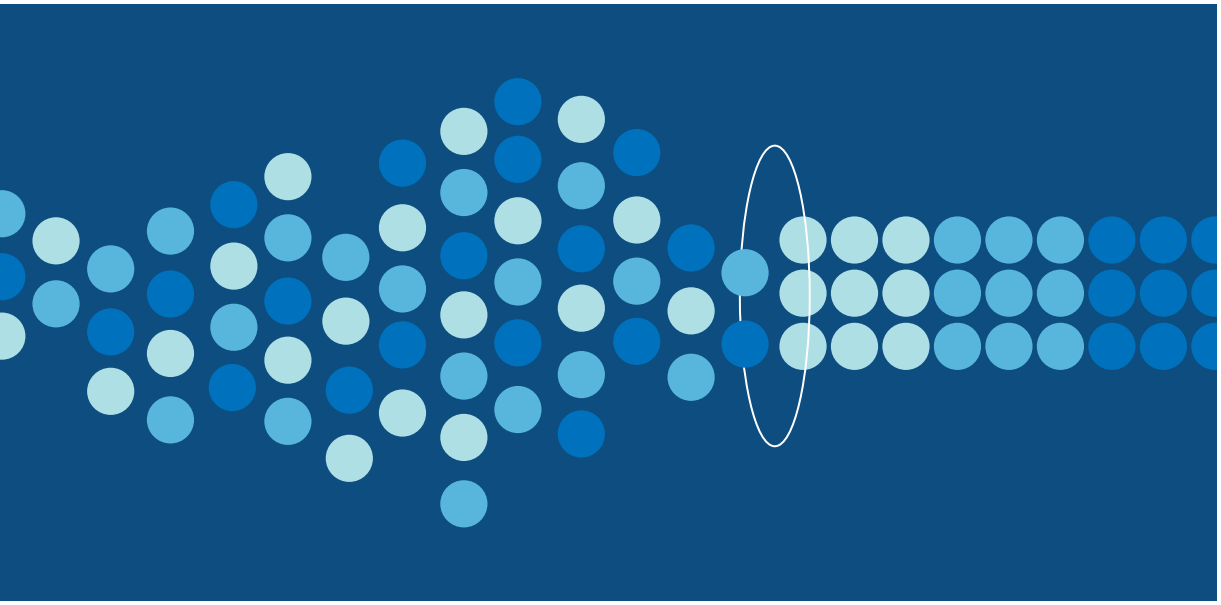

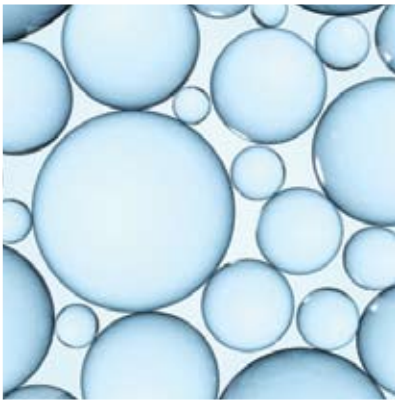

Lab Scale Chromatography

Sample Preparation Selection Guide

Separations: Simplicity, Selection, and Solutions

Browse through a selection of our chromatography media for sample clean-up and preparation.

What Distinguishes Our Products

Simplicity

Media are available in easy-to mix powder or gel forms or in time-saving, prepacked disposable columns.

Selection

An assortment of media choices are offered to perform laboratory applications ranging from contaminant removal to protein purification.

Solutions

Bio-Rad has been providing chromatography solutions for life science researchers for over 40 years. Combined with our outstanding technical support, we continue to uphold our tradition of excellence.

BIO-RAD

Purification/ Cleanup Techniques	Method	Products	Commonly Cited Applications
Buffer Treatment	**Contaminant Removal From Buffers and Reagents**	AG® 501-X8 Resin	Removal of ionic contaminant in non-ionic reagent
		AG 1 Resin	Anionic contaminant removal
		AG 50W Resin	Cationic contaminant removal
		Chelex® 100 Resin	Metal cation contaminant removal
		Affi-Prep® Polymyxin Support	Endotoxin removal
		Bio-Beads® Support and Adsorbants	Removal of UV absorbing organic contaminants and polar compounds in organic solvents
	Desalting and Buffer Exchange	Bio-Gel® P Gel	Peptide, protein, and carbohydrate desalting
		AG 11 A8 Resin	Desalting non-ion ic substances
		AG 50W Resin	Separation of high molecular weight molecules and metal ions
		Bio-Beads Support and Adsorbents	Fractionation of low molecular weight organic polymers and hydrophobic substances
Sample Cleanup	**Protein Sample Cleanup**	Bio-Rex™ 70 Resin	Purification and fractionation of peptides and proteins
		Bio-Gel P Gel	Purification of peptides, proteins, and carbohydrates
		Bio-Scale™ Mini Affi-Gel® Blue Cartridge	Antibody and protein (albumin) cleanup
	Nucleic Acid Cleanup	Chelex 100 Resin	Removal of PCR-inhibiting contaminants
		Bio-Gel P Gel	Removal of nucleotides or other ionic contaminants
		AG 50W Resin	Ethidium bromide removal
		Bio-Beads Support and Adsorbents	Ethidium bromide removal
Contaminant Removal	**Detergent Removal**	AG 50W Resin	Cationic detergent removal
		AG 11 A8 Resin	Anionic detergent removal
		AG 1 Resin	Anionic detergent removal
		Bio-Beads Support	Non-ionic detergent removal
	Deionization	AG 501-X8 Resin	Deionization of buffers, reagents, water, and carbohydrate and protein samples
		AG 11 A8 Resin	Deionization of protein samples
	Organic Compound Removal	Bio-Beads Support	Separation of organic molecules in organic solvents and non-ionic organic molecules from proteins and nucleic acids
		AG 50W Resin	Separation of ionic organic molecules from proteins and nucleic acids
		AG 11 A8 Resin	Separation of ionic organic molecules from proteins
Protein Purification*	**Ion Exchange**	UNOsphere™ Q and S Media	Separation of molecules based on net charge
		Macro-Prep® Q, S, and DEAE Media	
	Affinity	Bio-Scale Mini Profinity™ IMAC, GST, and eXact™ Cartridges	Serum protein, IgG, and recombinant tagged-protein purification
		Affi-Prep Protein A Support, DEAE Affi-Gel Blue Support	
	Size Exclusion	Bio-Gel P Gel	Desalting separation of molecules by size
	Multi-Mode Separation	CHT™ ceramic hydroxyapatite Type I and Type II	Antibody purification, aggregate removal, and viral clearance

* Media are available in bottles, prepacked columns, and prepacked cartridges.

Recent Applications*	Reference #
Soluble silicate removal from Bindzil silica nanoparticles	1
Preconcentration of glyphosate from water	2
Radiochemical separation (lead, barium, radium elution)	3
Exchange Cu^{2+} and Zn^{2+} from aqueous solutions	4
Removal of endotoxins on isolated protein (glutathione S-transferase)	5
Lipid removal from fish blubber sample	6
Treatment of food samples (determination of inulin)	7
Salt and acid removal from pyridinium dichromate and carbohydrate solution	8
Strontium and neodymium isotope separation	9
Fractionation of polycyclic aromatic hydrocarbons	10
In-line sample cleanup of chloride and sulfate in natural waters	11
Junctional protein desalting	12
Purification of monoclonal antibodies from ascitic fluids	13
DNA purification	14
Post-PCR cleanup	15
Primer purification	16
Polycyclic aromatic hydrocarbon extraction from otter livers	17
Rare earth element separation	18
Separation of small organic molecules from dissolved organic nitrogen	19
Surfactin purification (lipopeptide)	20
Purification of lanolin through pesticide extraction	21
Formamide deionization	22
Saliva sample cleanup	23
Isolation and reconstitution of carnitine and acylcarnitine transporter	24
Organic acid analysis (HPLC)	25
Surfactant removal from single-walled carbon nanotubes (SWNT) composites and nucleic acids	26
Purification of protein from spinach photosystem II	27
Purification of a specific form of UDP by anion exchange	28
Purification of polymerase I from yeast RNA using HA-tag	29
Purification of resistant cells induced with doxycycline using nickel affinity column	30
Soybean calmodulin isoform desalting	31
Desalting of oxidized protein ($PrxSO_2$)	32
Desalting and buffer exchange following affinity column purification	33
Protein adsorption chromatography (clathrin)	34

* Contact Tech Support at 1-800-4BIORAD (1-800-424-6723) for specific application questions.

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Ordering Information

A complete listing of Bio-Rad media can be found in the catalog.

Catalog #	Description	Hydrated Bead Size (µm)	Molecular Weight Fractionation Range	Comments
150-4114	**Bio-Gel P-2 gel**, fine, 100 g	45–90	100–1,800	Rapid carbohydrate, peptide, and protein desalting
150-4115	**Bio-Gel P-2 gel**, fine, 500 g	45–90	100–1,800	
150-4118	**Bio-Gel P-2 gel**, extra fine, 100 g	<45	100–1,800	
150-4120	**Bio-Gel P-4 gel**, medium, 100 g	90–180	800–4,000	Carbohydrate and peptide separations, protein desalting
150-4124	**Bio-Gel P-4 gel**, fine, 100 g	45–90	800–4,000	
150-4128	**Bio-Gel P-4 gel**, extra fine, 100 g	<45	800–4,000	
150-4130	**Bio-Gel P-6 gel**, medium, 100 g	90–180	1,000–6,000	Purification of proteins and polypeptides
150-4134	**Bio-Gel P-6 gel**, fine, 100 g	45–90	1,000–6,000	
150-0738*	**Bio-Gel P-6DG gel**, 100 g	90–180	1,000–6,000	Rapid carbohydrate, peptide, and protein desalting; also
150-0739	**Bio-Gel P-6DG gel**, 1 kg	90–180	1,000–6,000	available in prepacked columns and cartridges
150-4140	**Bio-Gel P-10 gel**, medium, 100 g	90–180	1,500–20,000	Purification of proteins and polypeptides
150-4144	**Bio-Gel P-10 gel**, fine, 100 g	45–90	1,500–20,000	
150-4150	**Bio-Gel P-30 gel**, medium, 100 g	90–180	2,500–40,000	
150-4154	**Bio-Gel P-30 gel**, fine, 100 g	45–90	2,500–40,000	
150-4160	**Bio-Gel P-60 gel**, medium, 100 g	90–180	3,000–60,000	
150-4164	**Bio-Gel P-60 gel**, fine, 100 g	45–90	3,000–60,000	
150-4170	**Bio-Gel P-100 gel**, medium, 100 g	90–180	5,000–100,000	
150-4174	**Bio-Gel P-100 gel**, fine, 100 g	45–90	5,000–100,000	

* Also available as prepacked Econo-Pac® columns and as prepacked Bio-Scale™ Mini cartridges.

Catalog #	Description	Bead Size (µm)	Bed Volume (ml/dry g)*	Application**
152-2150	**Bio-Beads S-X1 Support**, 100 g	40–80	7.5	1% crosslinked; for lipophilic polymers of MW 600–14,000
152-2151	**Bio-Beads S-X1 Support**, 1 kg			
152-2750	**Bio-Beads S-X3 Support**, 100 g	40–80	4.75	3% crosslinked; for organic compounds of MW ≤2,000
152-3350	**Bio-Beads S-X8 Support**, 100 g	40–80	3.1	8% crosslinked; for organic compounds of MW ≤1,000
152-3650	**Bio-Beads S-X12 Support**, 100 g	40–80	2.5	12% crosslinked; for organic compounds of MW ≤400
152-3920	**Bio-Beads SM-2 Adsorbents**, 100 g			
152-8920	**Bio-Beads SM-2 Adsorbents**, biotechnology grade, 25 g			

* Swollen in benzene. ** MW range is for beads fully swollen in benzene.
Larger volumes and special packaging are available on request.

Pre-packed Bio-Spin, Poly-Prep, and Econo-Pac Columns

Ion exchange, size exclusion, and desalting media are also available in conveniently packed columns for spin and gravity separations. Refer to the Bio-Rad catalog for specific catalog items.

Description	2 x 1 ml	4 x 1 ml	5 x 1 ml	1 x 5 ml	5 x 5 ml	1 x 10 ml	5 x 10 ml	1 x 50 ml
Prepacked Bio-Scale Mini Cartridges								
UNOsphere Q Support	—	—	732-4100	732-4102	732-4104	—	—	—
UNOsphere S Support	—	—	732-4110	732-4112	732-4114	—	—	—
Macro-Prep High Q Support	—	—	732-4120	732-4122	732-4124	—	—	—
Macro-Prep High S Support	—	—	732-4130	732-4132	732-4134	—	—	—
Macro-Prep DEAE Support	—	—	732-4140	732-4142	732-4144	—	—	—
Affi-Prep Protein A Support	—	—	732-4600	732-4602	—	—	—	—
Profinity IMAC Ni-Charged Support	—	—	732-4610	732-4612	732-4614	—	—	—
Profinity GST Support	—	—	732-4620	732-4622	732-4624	—	—	—
Bio-Scale Mini Profinity eXact Cartridges	732-4646	732-4647	—	732-4648	—	—	—	—
DEAE Affi-Gel Blue Support	—	—	—	732-4632	732-4634	—	—	—
Affi-Gel Blue Support	—	—	—	732-4642	732-4644	—	—	—
CHT Type I, 40 µm Support	—	—	—	732-4322	732-4324	—	—	—
CHT Type II, 40 µm Support	—	—	—	732-4332	732-4334	—	—	—
Bio-Gel P-6 Support (Desalting), 5 ml	—	—	—	732-4052	732-4504	—	—	—
Bio-Gel P-6 Support, 10 ml	—	—	—	—	—	732-5304	732-5314	—
Bio-Gel P-6 Support, 50 ml	—	—	—	—	—	—	—	732-5312

Catalog #	Description
Adaptor Fittings	
732-0111	**Luer to M6 Adaptor Fittings Kit**, includes luer to M6 fittings to connect 1 cartridge to a BioLogic LP or FPLC system
732-0112	**Luer to 10-32 Adaptor Fittings Kit**, includes luer to 10-32 fittings to connect 1 cartridge to a BioLogic DuoFlow or HPLC system
732-0113	**Luer to BioLogic System Fittings Kit**, includes 1/4-28 female to male luer and 1/4-28 female to female luer to connect 1 cartridge to a BioLogic DuoFlow system

Larger package sizes of media are available for process-scale chromatography. For more information, contact your local Bio-Rad representative.

Ordering Information

A complete listing of Bio-Rad media can be found in the catalog.

Catalog #	Description	Ionic Form	Dry Mesh Size	Wet Bead Size (µm)	Nominal Shipping % Water
AG Resins					
140-1231	**AG 1-X2 Resin**, 500 g	Chloride	50–100	180–500	70–78
140-1241	**AG 1-X2 Resin**, 500 g	Chloride	100–200	106–250	70–78
140-1251	**AG 1-X2 Resin**, 500 g	Chloride	200–400	75–180	70–78
140-1253	**AG 1-X2 Resin**, 500 g	Acetate	200–400	75–180	70–78
140-1331	**AG 1-X4 Resin**, 500 g	Chloride	50–100	180–425	59–65
140-1341	**AG 1-X4 Resin**, 500 g	Chloride	100–200	106–250	59–65
140-1351	**AG 1-X4 Resin**, 500 g	Chloride	200–400	63–150	59–65
140-1421	**AG 1-X8 Resin**, 500 g	Chloride	20–50	300–1,180	39–45
140-1431	**AG 1-X8 Resin**, 500 g	Chloride	50–100	180–425	39–45
140-1441*	**AG 1-X8 Resin**, 500 g	Chloride	100–200	106–180	39–45
140-1451*	**AG 1-X8 Resin**, 500 g	Chloride	200–400	45–106	39–45
140-1422	**AG 1-X8 Resin**, 500 g	Hydroxide	20–50	300–1,180	39–45
140-1443	**AG 1-X8 Resin**, 500 g	Acetate	100–200	106–180	39–45
140-1453	**AG 1-X8 Resin**, 500 g	Acetate	200–400	45–106	39–45
140-1444**	**AG 1-X8 Resin**, 500 g	Formate	100–200	106–180	39–45
140-1454	**AG 1-X8 Resin**, 500 g	Formate	200–400	45–106	39–45
142-1231	**AG 50W-X2 Resin**, 500 g	Hydrogen	50–100	300–1,180	75–83
142-1241**	**AG 50W-X2 Resin**, 500 g	Hydrogen	100–200	106–300	75–83
142-1251	**AG 50W-X2 Resin**, 500 g	Hydrogen	200–400	75–180	75–83
142-1331	**AG 50W-X4 Resin**, 500 g	Hydrogen	50–100	180–425	64–72
142-1341	**AG 50W-X4 Resin**, 500 g	Hydrogen	100–200	106–250	64–72
142-1351**	**AG 50W-X4 Resin**, 500 g	Hydrogen	200–400	63–150	64–72
142-1421	**AG 50W-X8 Resin**, 500 g	Hydrogen	20–50	300–1,180	50–56
142-1431	**AG 50W-X8 Resin**, 500 g	Hydrogen	50–100	180–425	50–56
142-1441*,**,***	**AG 50W-X8 Resin**, 500 g	Hydrogen	100–200	106–250	50–56
142-1451*,**,***	**AG 50W-X8 Resin**, 500 g	Hydrogen	200–400	63–150	50–56
142-1641	**AG 50W-X12 Resin**, 500 g	Hydrogen	100–200	106–250	42–48
142-1651	**AG 50W-X12 Resin**, 500 g	Hydrogen	200–400	53–106	42–48
142-6424**,***,†	**AG 501-X8 Resin**, 500 g	$H^+ + OH^-$	20–50	300–1,180	43–55
142-6425**,***	**AG 501-X8(D) Resin**, 500 g	$H^+ + OH^-$	20–50	300–1,180	43–55
142-7834**	**AG 11 A8 Resin**, 500 g	Self-adsorbed	50–100	180–425	—
Bio-Rex Resins					
142-5822	**Bio-Rex 70 Resin**, 500 g	Sodium	20–50	300–1,180	65–74
142-5832**	**Bio-Rex 70 Resin**, 500 g	Sodium	50–100	150–300	65–74
142-5842	**Bio-Rex 70 Resin**, 500 g	Sodium	100–200	75–150	65–74
142-5852**	**Bio-Rex 70 Resin**, 500 g	Sodium	200–400	45–75	65–74
Chelex Resins					
142-2822	**Chelex 100 Resin**, 500 g	Sodium	50–100	300–1,180	68–76
142-2832**	**Chelex 100 Resin**, 500 g	Sodium	100–200	150–300	68–76
142-2842***	**Chelex 100 Resin**, 500 g	Sodium	200–400	75–150	68–76
142-2825	**Chelex 100 Resin**, 100 g	Iron	100–200	150–300	—

* Also available in prepacked Poly-Prep® columns.
** Also available as biotechnology grade resin.
*** Also available as molecular biology grade resin.
† Also available as reactor grade resin.

Catalog #	Description
Ready-to-Use Affinity Media	
153-7301*	**Affi-Gel Blue Gel**, 100 ml, 50–100 mesh
153-7302	**Affi-Gel Blue Gel**, 100 ml, 100–200 mesh
156-0010	**Affi-Prep Polymyxin Support**, 25 ml

* Also available as prepacked Bio-Scale™ Mini cartridges.

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