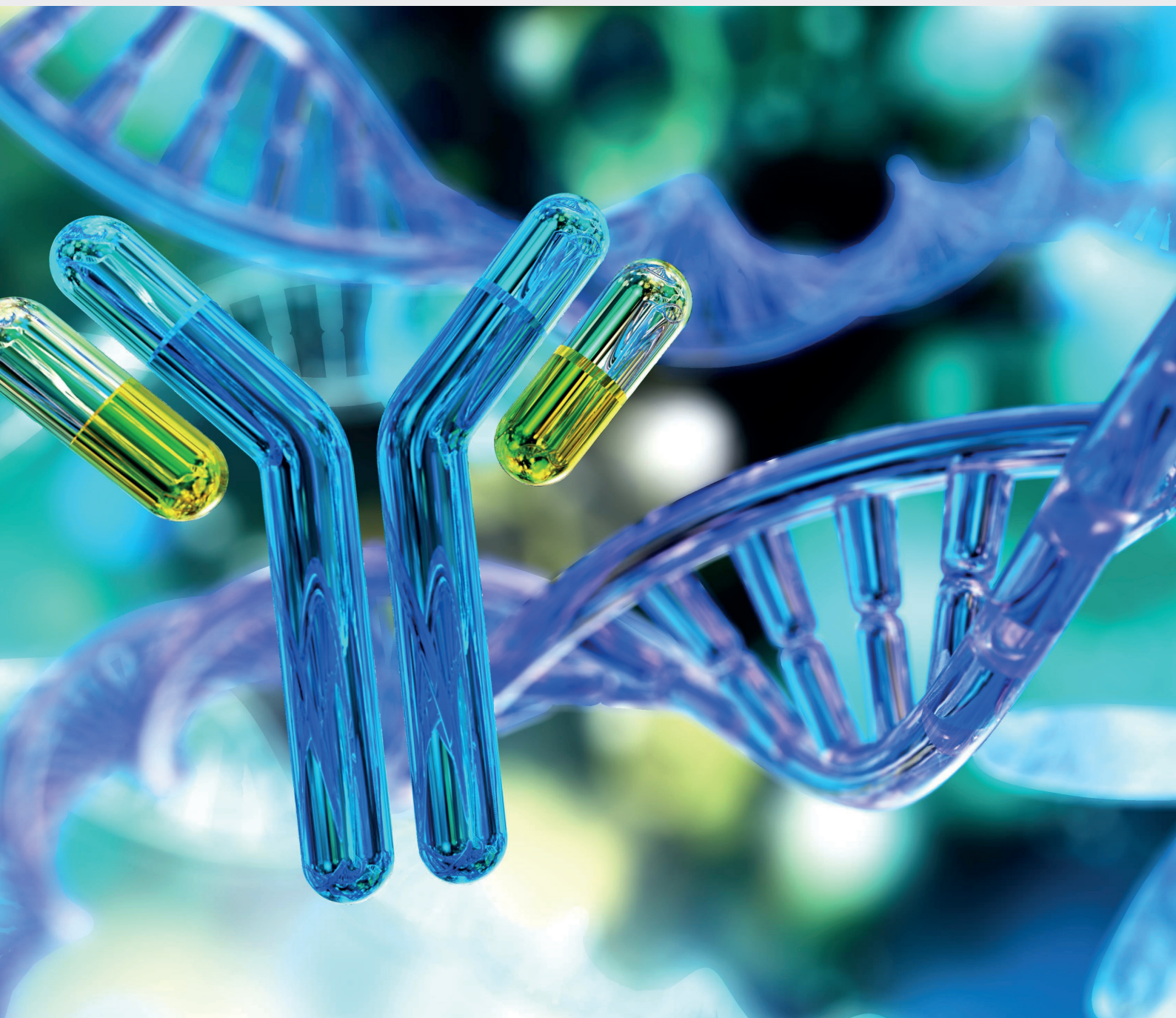


Biomolecule Purification with PhyTip[®] Columns



Biomolecule Purification with PhyTip® Columns



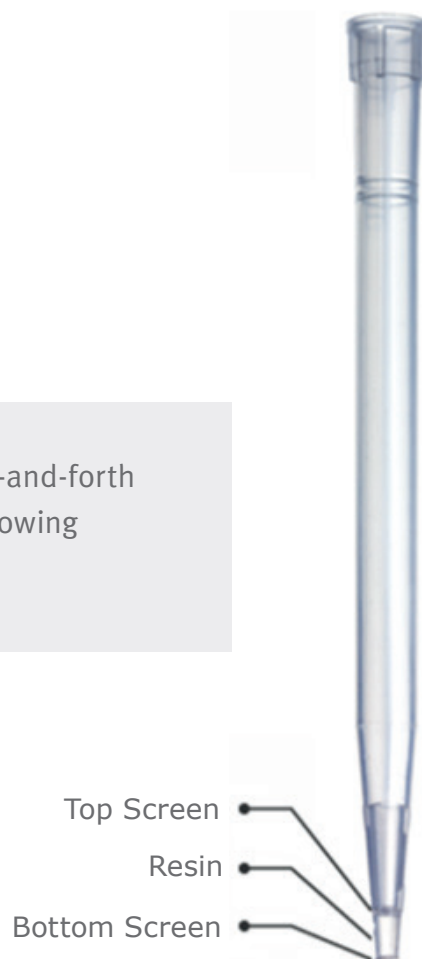
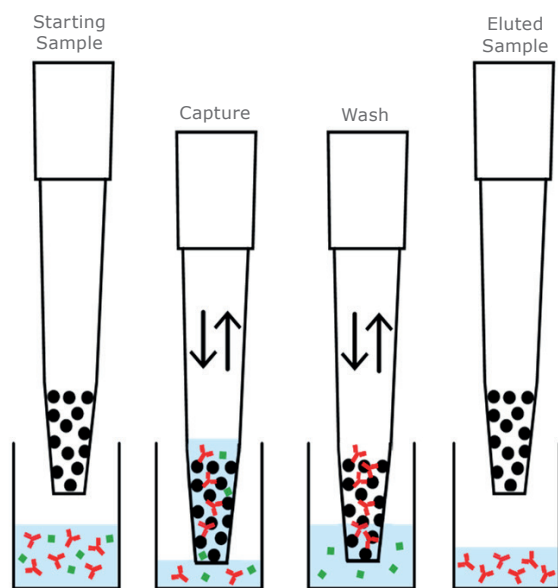
PhyTip® columns are available for a range of automated purification solutions in plasmid purification, protein purification and AAV purification. PhyTip columns have supported researchers with automated biomolecule purification since 2002.

Dual Flow Chromatography with PhyTip® Columns

Main Benefits of PhyTip® Columns

- » High throughput purification of biomolecules
- » Compatible with all major liquid handling robots
- » Versatile; 1–96 samples at a time with a wide range of available resins
- » Gentle purification with high purity and high recoveries

PhyTip® Columns purify samples through repeated back-and-forth cycles - a process called dual flow chromatography - allowing complete binding interactions in each purification step.



The unique column design with a packed resin bed binds the entire sample to a small resin bed volume. Basic chromatographic principals control the separations, and the bi-directional flow drives interactions to high loading equilibrium regardless of kinetic rate constants. The purified sample can be eluted in small volumes, resulting in a highly concentrated sample. Dual flow chromatography is a gentle purification process producing high levels of biologically active protein.

Compatible with all Major Liquid Handling Robotic Systems

PhyTip® columns come with dual flow chromatography protocols that have been validated with real protein samples and can be used on all major automated liquid handling systems, enabling efficient set up of purification runs. The PhyTip columns are ready to use directly out of the box. The run time for a full purification protocol of 96 samples can be as short as 15 minutes.

Models	NIMBUS, STAR, Vantage						
Tip Volumes (µL)	300			1000			
Part Number	PTH-93			PTH-91			
Resin Volumes (µL)	5	20	10	20	40	80	160

HAMILTON®

Models	FX & NX		iSeries				
Tip Volumes (µL)	200		1000				
Part Number	PTB-92		PTB-91				
Resin Volumes (µL)	5	20	10	20	40	80	160

Beckman Coulter®

Models	Lynx						
Tip volumes (µL)	300			1000			
Part Number	PTX-93			PTX-91			
Resin volumes (µL)	5	20	10	20	40	80	160

Dynamic Devices®

Models	Oasis						
Tip Volumes (µL)	200			1000			
Part Number	PTT-92			PTT-91			
Resin Volumes (µL)	5	20	10	20	40	80	160

Models	MiniTrack, Janus MDT 96-channel		Janus Varispan 4 or 8 wells				
Tip volumes (µL)	200		1000				
Part Number	PTT-92		PTT-91				
Resin Volumes (µL)	5	20	10	20	40	80	160

PerkinElmer®

Models	Cybio Felix				
Tip Volumes (µL)	1000				
Part Number	PTT-91				
Resin Volumes (µL)	10	20	40	80	160

Analytik Jena®
PhyTip Column

 Top screen
Bottom screen

Desalting Gel Filtration PhyTip Columns

Tip volume (µL)	1000	
Part Number	PDR-91	
Resin volume (µL)	200	600

TECAN®

Models	Te-MO
Tip Volumes (µL)	200
Part Number	PTT-92
Resin Volumes (µL)	5 20

Models	Freedom Evo MCA					
Tip Volumes (µL)	200		500			
Part Number	PTT-92			PTT-95		
Resin Volumes (µL)	5	20	20	40	80	160

Models	Freedom Evo LiHa					
Tip Volumes (µL)	200		1000			
Part Number	PTT-92			PTT-91		
Resin Volumes (µL)	5	20	10	20	40	80 160

Resins

5K and 30K Desalting
 C18 90 Å and C18 300 Å
 C4 300 Å
 CaptureSelect™ IgG-Fc Hu
 CaptureSelect™ KappaXL
 CaptureSelect™ LambdaXP
 POROS CaptureSelect™ IgM
 POROS CaptureSelect™ AAVX
 Glutathione
 IMAC
 Normal Phase 1
 Plasmid Miniprep Purification
 ProPlus (MabSelect SuRe™)
 ProPlus LX (MabSelect SuRe LX™)
 Protein A
 Protein G
 Streptavidin
 Strong Anion
 Strong Cation
 Weak Anion
 Weak Cation
 Custom Resins

**CALIPER
Life Sciences®**

Models	Caliper SciClone, Caliper Zephyr
Tip Volumes (µL)	200
Part Number	PTT-92
Resin Volumes (µL)	5 20

**Agilent
Technologies®**

Models	Agilent Bravo
Tip Volumes (µL)	200
Part Number	PTV-92
Resin Volumes (µL)	20

Opentrons®

Models	OT-1, OT-2
Tip Volumes (µL)	300
Part Number	PTX-93
Resin Volumes (µL)	5 20

Biotage®

Models	MEA2 200 µL head	MEA2 1200 µL head					
Tip Volumes (µL)	200	1000					
Part Number	PTR-92	PTR-91					
Resin Volumes (µL)	5	20	10	20	40	80	160 320

Applications

PhyTip® columns can be used to purify biomolecules for basic research, drug discovery and process development. Applications include, but are not limited to; plasmid purification, antibody purification, tagged recombinant protein purification, Adeno associated virus (AAV) purification, desalting, immunoprecipitation and sample preparation for mass spectrometry.

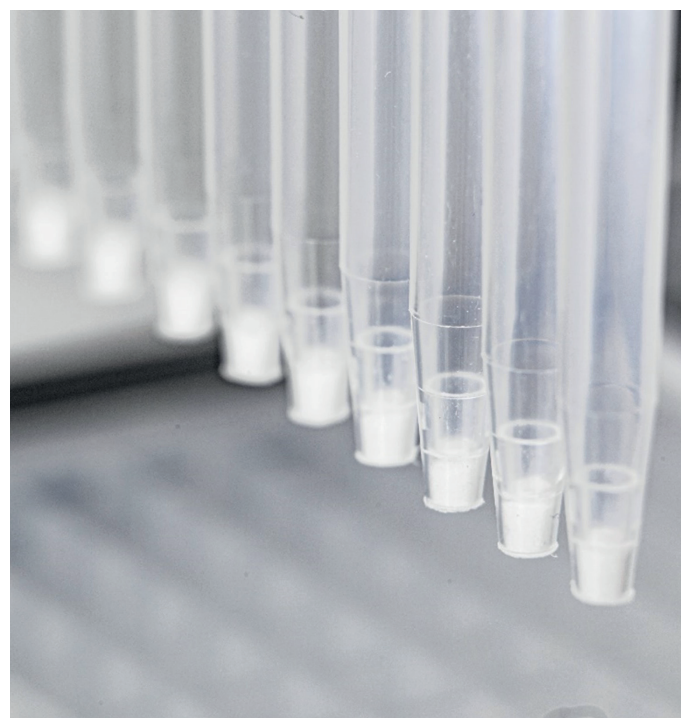
Products and Technology

PhyTip columns are available in pipette sizes of 200 µL, 300 µL, 500 µL and 1 mL and in resin bed volumes from 5 µL to 320 µL for purification of µg to mg protein samples. Sample volumes can be varied between 100 µL and 30 mL. The PhyTip columns are available in a range of different chromatography resins from different resin suppliers. In addition, custom PhyTip columns are available upon request. Virtually any chromatography resin with ≥ 40 µm in particle size can be packed in the PhyTip column format. The columns can be produced to be compatible with all major automation systems.

PhyTip® Column Products

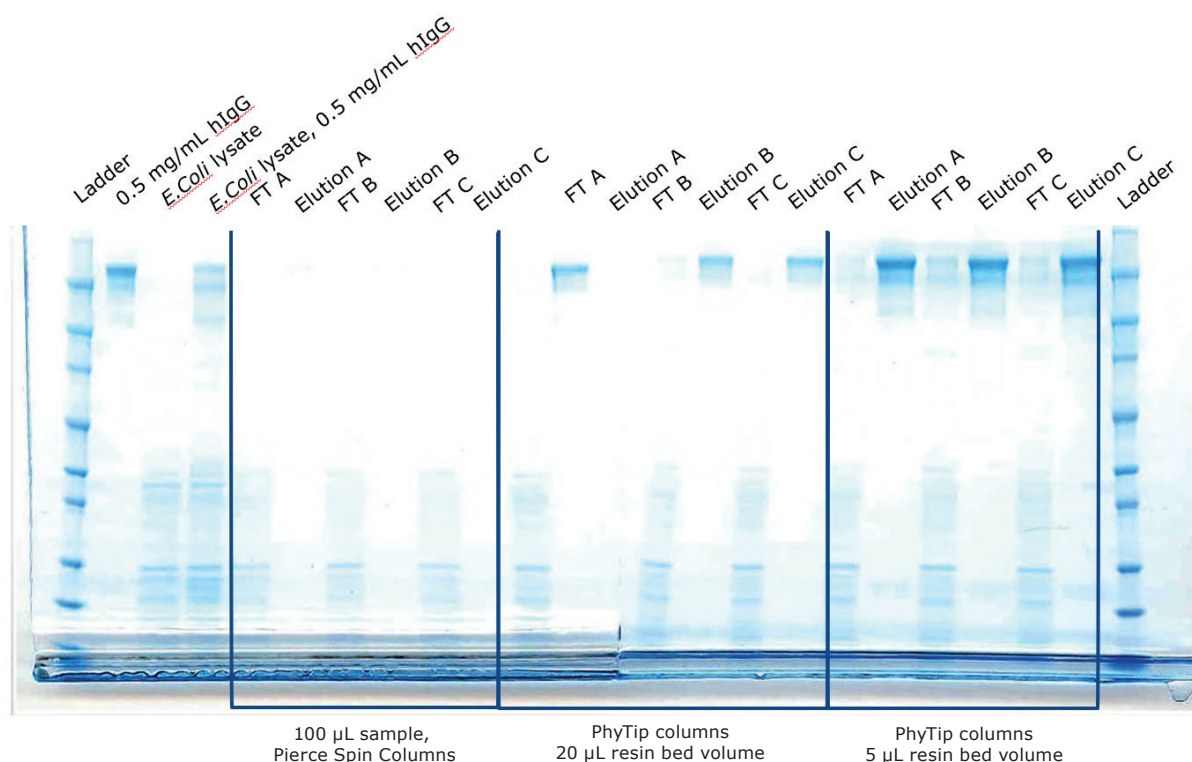
Antibody Purification PhyTip® Columns

PhyTip columns are available with different affinity medias that bind selectively to various parts of the antibody structure for purification IgG antibodies as well as other subtypes and fragments. In one key application, dual flow chromatography enables efficient purification of low concentration IgG. The image below shows concentrating and purification effect of PhyTip columns as compared to spin columns.



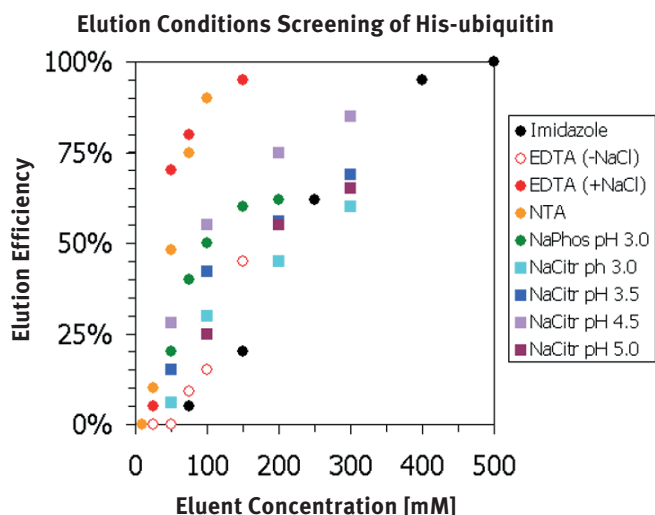
Resins available in the standard product portfolio: Protein A, Protein G and affinity resins for binding antibody fragments, including brand names such as MabSelect SuRe and CaptureSelect:

For all available products, please visit:
<https://www.biotage.com/antibody-purification>



Tagged Recombinant Protein Purification with PhyTip® Columns

Different PhyTip® columns are available with affinity medias that bind His-tagged, Biotin-tagged and GST-tagged recombinant proteins. The image below shows purification and optimization of elution conditions of His-ubiquitin using a Ni-IMAC PhyTip column.



Resins available in the standard product portfolio are IMAC affinity resins, Glutathione affinity resins and Streptavidin affinity resins.

For all available products, please visit:
<https://www.biotage.com/tagged-protein>

AAV Protein Purification using PhyTip® Columns

Affinity chromatography purification can effectively remove impurities such as plasmid DNA and host cell RNA/DNA in AAV purification.

The CaptureSelect™ AAVX PhyTip columns are compatible with most 8, 12, and 96-channel automation liquid handling robots.

For all available products, please visit:
www.biotage.com/aav-phytip-column

Plasmid Purification with PhyTip® Columns

Plasmids are the common starting material for transient transfection of recombinant proteins, mRNA and viral vectors. PhyTip columns are available for efficient high throughput miniprep purification of plasmids.

For all available products, please visit:
www.biotage.com/miniprep-phytip-column

Ion Exchange Chromatography PhyTip® Columns

PhyTip columns are available with different ion exchange chromatography resins, including strong anion exchange resins, weak anion exchange resins, strong cations exchange resins and weak cation exchange resins.

For all available products, please visit:
www.biotage.com/phytip-columns-strong-anion-exchange

Gel Filtration/Desalting PhyTip® Columns

Gel filtration PhyTip columns packed with size exclusion chromatography resin are ideal for desalting protein samples and for buffer exchange. Desalting by Gel Filtration PhyTip columns can be set up as a secondary purification step after affinity purification.

For all available products, please visit:
www.biotage.com/gel-filtration-phytip-columns

Reversed Phase Chromatography PhyTip® Columns

Reversed Phase PhyTip columns are used for automated desalting or cleanup of protein and peptide samples before mass spectrometry analysis. Reversed Phase PhyTip columns bind a wide range of protein and polypeptide sizes.

For all available products, please visit:
www.biotage.com/reversed-phase-phytip-columns

Normal Phase Chromatography PhyTip® Columns

Sample processing by Normal Phase PhyTip columns by dual flow chromatography leads to specific enrichment of polar compounds – for instance oligosaccharides. As such, Normal Phase PhyTip columns are the only commercially ideal solution for high throughput, oligosaccharide purification for applications such as oligosaccharide mapping and identification analysis of glycoproteins.

For all available products, please visit:
www.biotage.com/reversed-phase-phytip-columns-o



Your Complete Partner for Automated Protein, AAV and Plasmid Purification

Biotage is a global supplier of instruments and accessories designed to facilitate scientific work in life sciences. With our deep knowledge of the industry, academic contacts and in-house R&D teams, we deliver the best solutions to your challenges. We take great pride in our flexibility and ability to meet the individual needs of each customer. With strong foundations in analytical, organic, process, and biomolecule chemistry, we offer the widest range of solutions available on the market.

EUROPE

Main Office: +46 18 565900
Fax: +46 18 591922
Order Tel: +46 18 565710
Order Fax: +46 18 565705
order@biotage.com
Support Tel: +46 18 56 59 11
Support Fax: + 46 18 56 57 11
eu-1-pointsupport@biotage.com

NORTH & LATIN AMERICA

Main Office: +1 704 654 4900
Toll Free: +1 800 446 4752
Fax: +1 704 654 4917
Order Tel: +1 800 446 4752
Order Fax: +1 704 654 4917
ordermailbox@biotage.com
Support Tel: +1 800 446 4752
us-1-pointsupport@biotage.com

JAPAN

Tel: +81 3 5627 3123
Fax: +81 3 5627 3121
jp_order@biotage.com
jp-1-pointsupport@biotage.com

CHINA

Tel: +86 21 68162810
Fax: +86 21 68162829
cn_order@biotage.com
cn-1-pointsupport@biotage.com

KOREA

Tel: +82 31 706 8500
Fax: +82 31 706 8510
korea_info@biotage.com
kr-1-pointsupport@biotage.com

INDIA

Tel: +91 11 45653772
india@biotage.com

Distributors in other regions
are listed on www.biotage.com

Literature Number: PPS690.V.1

© 2022 Biotage. All rights reserved. No material may be reproduced or published without the written permission of Biotage. Information in this document is subject to change without notice and does not represent any commitment from Biotage. E&OE. A list of all trademarks owned by Biotage AB is available at www.biotage.com/legal. Other product and company names mentioned herein may be trademarks or registered trademarks and/or service marks of their respective owners, and are used only for explanation and to the owners' benefit, without intent to infringe.

