

Selection guide

Protein and nucleic acid sample preparation



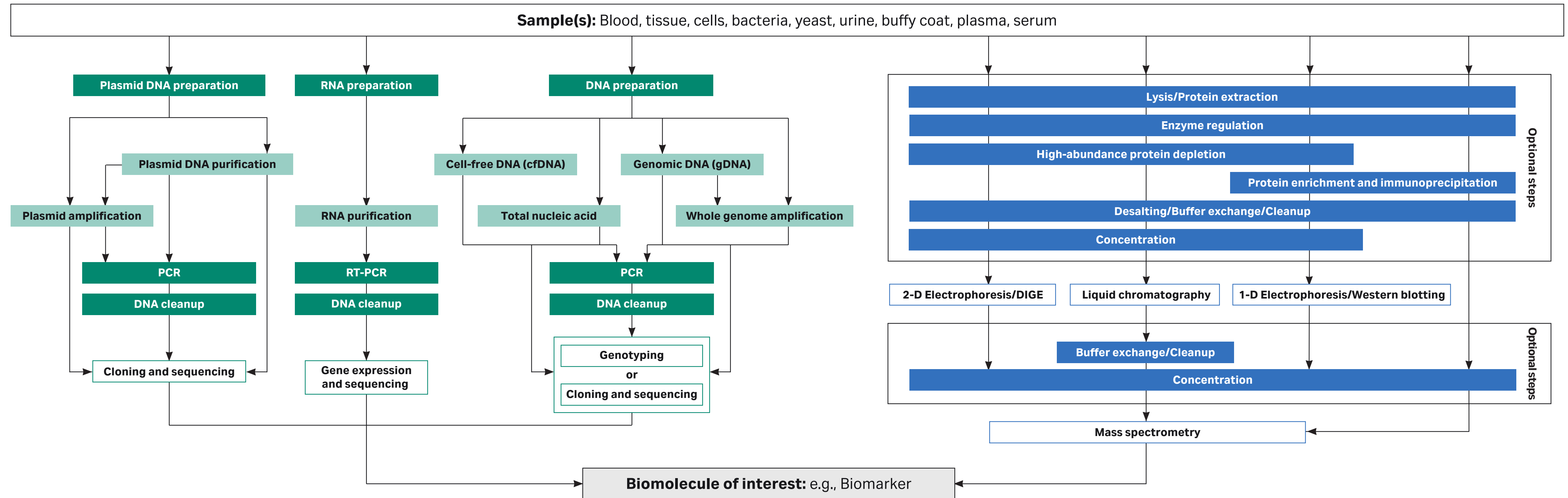
Nucleic acid and protein workflows

Nucleic acid workflow

Genome and gene analysis

Protein workflow

Differential expression analysis protein mapping



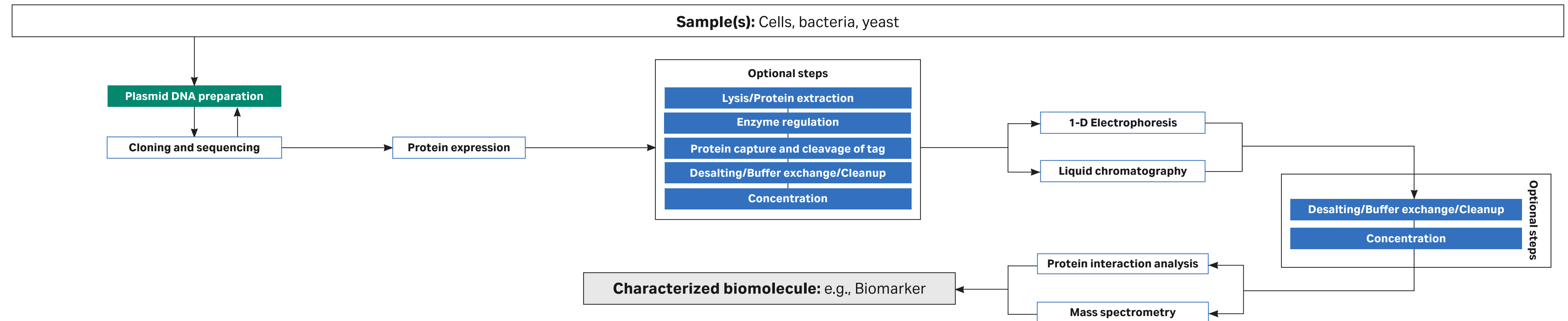
Nucleic acid and protein workflows

Nucleic acid workflow

Construction of expression-ready DNA clones

Protein workflow

Overexpression and purification of specific proteins: Structure and function studies



Protein sample preparation

	Product code	2-D electrophoresis	1-D electrophoresis	Liquid chromatography	From 2-D electrophoresis to MS	From 1-D electrophoresis to MS	From LC to MS	Protein expression	Mass spectrometry	
Untagged protein enrichment										
NHS Mag Sepharose™ beads	28944009 28951380		•						•	Magnetic beads for coupling of an affinity molecule with a primary amine, pull-down applications
Streptavidin HP MultiTrap™ plates	28903131		•						•	Coupling of a biotinylated affinity molecule in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Streptavidin Mag Sepharose™ beads	28985738 28985799		•						•	Magnetic beads for coupling of a biotinylated affinity molecule for IP experiment or direct capture of biotinylated biomolecules
Protein A HP SpinTrap™ columns	28903132		•						•	Coupling of an IgG affinity molecule, spin column format
Protein A HP MultiTrap™ columns	28903133		•						•	Coupling of an IgG affinity molecule in 96-well filter plates by vacuum or centrifuge, large sample series or automation
Protein A Mag Sepharose™ beads	28944006 28951378		•						•	Magnetic beads for coupling of an IgG affinity molecule, immunoprecipitation applications
Protein G HP SpinTrap™ columns	28903134		•						•	Coupling of an IgG affinity molecule, spin column format
Protein A/G HP SpinTrap™ Buffer Kit	28913567		•						•	Buffers for immuno-affinity enrichment using the Protein A HP SpinTrap™ columns, Protein G HP SpinTrap™ columns, and Ab SpinTrap™ columns
Protein G HP MultiTrap™ columns	28903135		•						•	Coupling of an IgG affinity molecule in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Protein G Mag Sepharose™ beads	28944008 28951379		•						•	Magnetic beads for coupling of an IgG affinity molecule, immunoprecipitation applications
Ab SpinTrap™ columns	28408347		•						•	Coupling of an IgG affinity molecule, spin column format, larger pack size
Magnetic Separation Rack 15 mL	29710714									Magnetic separation rack for SeraSil-Mag™ silica coated superparamagnetic particles, Sera-Mag™ SpeedBeads Carboxylate-Modified Magnetic Particles and the Sera-Mag™ Carboxylate-Modified Magnetic Particles, enables preparation of sample volumes up to 15 mL.
MagRack™ 6	28948964									Magnetic separation rack designed for Mag Sepharose™ products, enables preparation of up to six samples in 1.5 mL microcentrifuge tubes
MagRack™ Maxi	28986441									Magnetic separation rack designed for Mag Sepharose™ products, enables preparation of sample volumes up to 50 mL

For more information on protein sample preparation, please visit [cytiva.com/sampleprep](https://www.cytiva.com/sampleprep)

Protein sample preparation (cont.)

	Product code	2-D electrophoresis	1-D electrophoresis	Liquid chromatography	From 2-D electrophoresis to MS	From 1-D electrophoresis to MS	From LC to MS	Protein expression	Mass spectrometry	
Small-scale antibody purification										
Protein A HP SpinTrap™ columns	28903132							•		Purification of IgG, spin column format
Protein A HP MultiTrap™ columns	28903133							•		Purification of IgG in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Protein A Mag Sepharose™ Xtra beads	28967056 28967062							•		Magnetic beads for small-scale purification/screening of monoclonal and polyclonal antibodies from various species
Protein G HP SpinTrap™ columns	28903134							•		Purification of IgG, spin column format
Protein G HP MultiTrap™ plate	28903135							•		Purification of IgG in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Protein G Mag Sepharose™ Xtra beads	28967066 28967070							•		Magnetic beads for small-scale purification/screening of monoclonal and polyclonal antibodies from various species
Ab SpinTrap™ columns	28408347							•		Purification of IgG, spin column format, larger pack size
Ab Buffer Kit	28903059							•		Buffers for antibody purification using the Protein A HP SpinTrap™ columns, Protein G HP SpinTrap™ columns, and Ab SpinTrap™ columns
rProtein A GraviTrap™ columns	28985254		•					•		Purification of antibodies in milligram scale, gravity-flow column
Protein G GraviTrap™ antibody purification columns	28985255		•					•		Purification of antibodies in milligram scale, gravity-flow column
rProtein A and Protein G Sepharose™ 4 FF in GraviTrap™ columns	28985256		•					•		Purification of antibodies in milligram scale, gravity-flow column
Desalting/Buffer exchange/Clean-up										
PD-10 columns packed with Sephadex™ G-25 resin	17085101	•	•	•			•	•	•	Clean-up of proteins/oligosaccharides, sample volumes up to 2.5 mL, gravity-flow/centrifugation
LabMate PD-10 Buffer	18321603	•	•	•			•	•	•	Buffer reservoir for easy equilibration
PD MidiTrap™ G-25 columns with Sephadex™ G-25 resin	28918008	•	•	•			•	•	•	Clean-up of proteins/oligosaccharides, sample volumes up to 1.0 mL, gravity-flow/centrifugation
PD MiniTrap™ columns with Sephadex™ G-25 resin	28918007	•	•	•			•	•	•	Clean-up of proteins/oligosaccharides, sample volumes up to 0.5 mL, gravity-flow/centrifugation
PD SpinTrap™ G-25 columns with Sephadex™ G-25 resin	28918004	•	•	•			•	•	•	Clean-up of proteins/oligosaccharides, sample volumes up to 130 µL, microcentrifugation
PD MultiTrap™ G-25 columns with Sephadex™ G-25 resin	28918006	•	•	•			•	•	•	Clean-up of proteins/oligosaccharides in 96-well plates by centrifuge, sample volumes up to 130, larger sample series or automation
PD MidiTrap™ G-10 columns with Sephadex™ G-10 resin	28918011	•	•	•			•	•	•	Clean-up of peptides/small proteins, sample volumes up to 800 µL, gravity flow
PD MiniTrap™ G-10 columns with Sephadex™ G-10 resin	28918010	•	•	•			•	•	•	Clean-up of peptides/small proteins, sample volumes up to 300 µL, gravity flow
Mini Dialysis Kit – 1 kDa cut-off	80648375 80648394	•	•	•			•	•	•	Dialysis of small sample volumes, 250 µL and 2 mL Dialysis of small sample volumes, max. sample volume 2 mL
Mini Dialysis Kit – 8 kDa cut-off	80648413 80648432	•	•	•			•	•	•	Dialysis of small sample volumes, 250 µL and 2 mL Dialysis of small sample volumes, max. sample volume 2 mL
2-D Clean-Up Kit	80648451	•							•	Removal of interfering contaminants and concentration of total protein
SDS-PAGE Clean-Up Kit	80648470		•						•	Removal of interfering contaminants

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Protein sample preparation (cont.)

	Product code	2-D electrophoresis	1-D electrophoresis	Liquid chromatography	From 2-D electrophoresis to MS	From 1-D electrophoresis to MS	From LC to MS	Protein expression	Mass spectrometry	
Enzyme regulation										
Protease Inhibitor Mix	80650123	•	•	•				•	•	Protease inhibitor cocktail
Nuclease Mix	80650142	•	•	•				•	•	Cocktail of nucleases for the removal of DNA and RNA from the protein sample
Total protein quantitation										
2-D Quant Kit	80648356	•	•	•	•	•	•	•	•	Quantitation of protein amount using a colorimetric assay
Histidine-tagged protein capture										
His GraviTrap™ columns	11003399							•		Purification of histidine-tagged proteins, with high binding capacity, gravity flow column
His GraviTrap™ columns with TALON® resin	29000594									Gravity flow columns for purification of histidine-tagged proteins to high purity
His Mag Sepharose™ Ni beads	28967388 28967390 29104065							•		Magnetic beads for small-scale purification/screening of histidine-tagged proteins
His Mag Sepharose™ excel beads	17371220 17371221 17371222							•		Magnetic beads for small-scale purification/screening of histidine-tagged proteins from expression in mammalian and insect cell systems
His GraviTrap™ Kit	28401351							•		Gravity flow columns for histidine-tagged protein purification and buffers
His MultiTrap™ HP columns	28400989							•		Purification of histidine-tagged proteins with high binding capacity in 96-well filter plates by vacuum or centrifuge, for larger sample series or automation
His MultiTrap™ FF columns	28400990							•		Purification of histidine-tagged proteins with high binding capacity in 96-well filter plates by vacuum or centrifuge, for larger sample series or automation
His MultiTrap™ plates with TALON® resin	29000596							•		Purification of histidine-tagged proteins with high purity in 96-well filter plates by vacuum or centrifuge, for larger sample series or automation
His SpinTrap™ columns	28401353							•		Purification of histidine-tagged proteins with high binding capacity, spin column format
His SpinTrap™ columns with TALON® resin	29000593							•		Purification of histidine-tagged proteins with high purity, spin column format
His SpinTrap™ Kit	28932171							•		MicroSpin™ columns and premade buffers for histidine-tagged protein purification
His Buffer Kit	11003400							•		Buffers for the purification of histidine-tagged proteins using His GraviTrap™ columns, HisTrap™ columns, or His SpinTrap™ columns
HisTrap™ HP His tag protein purification columns	17524701 17524801 29051021 17524805 17524802							•		Simple purification with a syringe or chromatography system such as ÄKTA™ system
HisTrap™ FF columns	17531901 17525501 17531902 17525502							•		Simple purification with a syringe or chromatography system such as ÄKTA™ system
Maltose Binding Protein (MBP)-tagged protein capture										
MBPTrap™ HP columns	28918778 28918779 28918780 29048641							•		Simple purification with a syringe or chromatography system such as ÄKTA™ system

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Protein sample preparation (cont.)

	Product code	2-D electrophoresis	1-D electrophoresis	Liquid chromatography	From 2-D electrophoresis to MS	From 1-D electrophoresis to MS	From LC to MS	Protein expression	Mass spectrometry	
Strep-tag™ II-tagged protein capture										
StrepTrap™ HP columns	28907546 28907547 28907548 29048653							•		Simple purification with a syringe or chromatography system such as ÄKTA™ system
GST-tagged protein capture										
GSTprep™ FF 16/10 columns	28936550							•		Simple purification with a syringe or chromatography system such as ÄKTA™ systems
GSTrap™ HP columns	17528101 17528202 18728201 17528105 17528205							•		Simple purification with a syringe or chromatography system such as ÄKTA™ systems
GSTrap™ FF columns	17513002 17513101 17513003 17513002 17513005							•		Simple purification with a syringe or chromatography system such as ÄKTA™ systems
GSTrap™ 4B columns	28401745 28401748 28401747 29043609							•		Simple purification with a syringe or chromatography system such as ÄKTA™ systems
GST GraviTrap™ columns	28952360							•		Purification of GST-tagged proteins in gravity-flow format
GST MultiTrap™ 4B columns	28405500							•		Purification of GST-tagged proteins in 96-well filter plates by vacuum or centrifuge, for larger sample series or automation
GST SpinTrap™ columns	28952359							•		Purification of GST-tagged proteins, spin column format
GST Buffer Kit	28952361							•		Buffers for purification of GST-tagged proteins using GSTrap™ columns, GST GraviTrap™ columns, or GST SpinTrap™ columns
pGEX vectors	multiple							•		Expression vectors for GST fusion proteins
GST Vector primers for sequencing	multiple							•		Sequencing primers for the pGEX vectors
<i>E. coli</i> BL21	27154201							•		Bacterial strain for the expression of GST fusion protein
M13K07 Helper Phage	27152401							•		M13 phage for the GST expression system
GST Bulk Kit	27457001							•		Bulk Glutathine Sepharose™ 4B and empty gravity columns
PreScission™ Protease	27084301							•		Purified enzyme for site-specific cleavage of the GST tag from fusion proteins expressed using pGEX-P vectors
Thrombin protease for affinity tag removal	27084601							•		Purified enzyme for site-specific cleavage of the GST tag from fusion proteins expressed using pGEX-T vectors
Anti-GST Antibody	27457701							•		Unconjugated antibody with affinity for the GST tag

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Protein sample preparation (cont.)

	Product code	2-D electrophoresis	1-D electrophoresis	Liquid chromatography	From 2-D electrophoresis to MS	From 1-D electrophoresis to MS	From LC to MS	Protein expression	Mass spectrometry	
Protein depletion										
HiTrap™ Albumin and IgG Depletion columns	28946603	•	•	•						Prepacked 1 mL column for the depletion of albumin and IgG from larger sample volumes (~150 µL) of human plasma and serum, for use with a syringe or chromatography system such as ÄKTA™ systems
Albumin and IgG Depletion SpinTrap™ columns	28948020	•	•	•						Depletion of albumin and IgG from smaller sample volumes (~50 µL) of human plasma and serum, spin column format
Lysis/Protein extraction										
Sample Grinding Kit	80648337	•	•	•				•	•	The mechanical breaking up of cells or tissue releasing the total protein content
Yeast Protein Extraction Buffer Kit	28944045	•	•	•				•	•	Extraction of proteins from yeast cells
2-D Protein Extraction Buffer Trial Kit	28943522	•	•	•				•	•	Protein extraction from tissues and cell lines, trial kit with six different buffers for optimization of the method
triplePrep kit	28942544	•	•	•					•	Extraction of DNA, RNA, and protein from the same undivided sample
Protein concentration										
Vivaspin™ 500 MWCO 3000	28932218	•	•	•	•	•	•	•	•	Concentration of up to 500 µL sample through ultrafiltration, 3 kDa cut-off
Vivaspin™ 500 MWCO 5000	28932223	•	•	•	•	•	•	•	•	Concentration of up to 500 µL sample through ultrafiltration, 5 kDa cut-off
Vivaspin™ 500 MWCO 10 000	28932225	•	•	•	•	•	•	•	•	Concentration of up to 500 µL sample through ultrafiltration, 10 kDa cut-off
Vivaspin™ 500 MWCO 30 000	28932235	•	•	•	•	•	•	•	•	Concentration of up to 500 µL sample through ultrafiltration, 30 kDa cut-off
Vivaspin™ 500 MWCO 50 000	28932236	•	•	•	•	•	•	•	•	Concentration of up to 500 µL sample through ultrafiltration, 50 kDa cut-off
Vivaspin™ 500 MWCO 100 000	28932237	•	•	•	•	•	•	•	•	Concentration of up to 500 µL sample through ultrafiltration, 100 kDa cut-off
Vivaspin™ 2 MWCO 3000	28932240	•	•	•	•	•	•	•	•	Concentration of up to 2 mL sample through ultrafiltration, 3 kDa cut-off
Vivaspin™ 2 MWCO 5000	28932245	•	•	•	•	•	•	•	•	Concentration of up to 2 mL sample through ultrafiltration, 5 kDa cut-off
Vivaspin™ 2 MWCO 10 000	28932247	•	•	•	•	•	•	•	•	Concentration of up to 2 mL sample through ultrafiltration, 10 kDa cut-off
Vivaspin™ 2 MWCO 30 000	28932248	•	•	•	•	•	•	•	•	Concentration of up to 2 mL sample through ultrafiltration, 30 kDa cut-off
Vivaspin™ 2 MWCO 50 000	28932257	•	•	•	•	•	•	•	•	Concentration of up to 2 mL sample through ultrafiltration, 50 kDa cut-off
Vivaspin™ 2 MWCO 100 000	28932258	•	•	•	•	•	•	•	•	Concentration of up to 2 mL sample through ultrafiltration, 100 kDa cut-off
Vivaspin™ 6 MWCO 3000	28932293	•	•	•	•	•	•	•	•	Concentration of up to 6 mL sample through ultrafiltration, 3 kDa cut-off
Vivaspin™ 6 MWCO 5000	28932294	•	•	•	•	•	•	•	•	Concentration of up to 6 mL sample through ultrafiltration, 5 kDa cut-off
Vivaspin™ 6 MWCO 10 000	28932296	•	•	•	•	•	•	•	•	Concentration of up to 6 mL sample through ultrafiltration, 10 kDa cut-off
Vivaspin™ 6 MWCO 30 000	28932317	•	•	•	•	•	•	•	•	Concentration of up to 6 mL sample through ultrafiltration, 30 kDa cut-off
Vivaspin™ 6 MWCO 50 000	28932318	•	•	•	•	•	•	•	•	Concentration of up to 6 mL sample through ultrafiltration, 50 kDa cut-off
Vivaspin™ 6 MWCO 100 000	28932319	•	•	•	•	•	•	•	•	Concentration of up to 6 mL sample through ultrafiltration, 100 kDa cut-off
Vivaspin™ 20 MWCO 3000	28932358	•	•	•	•	•	•	•	•	Concentration of up to 20 mL sample through ultrafiltration, 3 kDa cut-off
Vivaspin™ 20 MWCO 5000	28932359	•	•	•	•	•	•	•	•	Concentration of up to 20 mL sample through ultrafiltration, 5 kDa cut-off
Vivaspin™ 20 MWCO 10 000	28932360	•	•	•	•	•	•	•	•	Concentration of up to 20 mL sample through ultrafiltration, 10 kDa cut-off
Vivaspin™ 20 MWCO 30 000	28932361	•	•	•	•	•	•	•	•	Concentration of up to 20 mL sample through ultrafiltration, 30 kDa cut-off
Vivaspin™ 20 MWCO 50 000	28932362	•	•	•	•	•	•	•	•	Concentration of up to 20 mL sample through ultrafiltration, 50 kDa cut-off
Vivaspin™ 20 MWCO 100 000	28932363	•	•	•	•	•	•	•	•	Concentration of up to 20 mL sample through ultrafiltration, 100 kDa cut-off

For more information on protein sample preparation, please visit [cytiva.com/sampleprep](https://www.cytiva.com/sampleprep)

Buffer and sample filtration, sample collection

	Filter size	Pack size	Product code
Whatman™ Polycap PES filter capsules for sterile filtration			
Polycap TC 36 Capsule Filter (sterile) with MNPT inlet and SB outlet plus filling bell	0.2/0.2 µm	1/pk	67153602
Polycap TC 75 Capsule Filter (sterile) with SB inlet and outlet plus filling bell	0.2/0.2 µm	1/pk	67157502
Whatman™ SPARTAN™ 13 mm syringe filters			
SPARTAN™ HPLC Syringe Filter, regenerated cellulose	0.2 µm	100/pk	10463100
SPARTAN™ HPLC Syringe Filter, regenerated cellulose	0.45 µm	100/pk	10463110
Whatman™ SPARTAN™ 30 mm syringe filters			
SPARTAN™ HPLC Syringe Filter, regenerated cellulose	0.2 µm	100/pk	10463060
SPARTAN™ HPLC Syringe Filter, regenerated cellulose	0.45 µm	100/pk	10463050
Whatman GD/X™ 24 mm syringe filter for lysate clarification			
GD/X Sterile Syringe Filter, PES filtration medium	0.2 µm	50/pk	68962502
GD/X Sterile Syringe Filter, PES filtration medium	0.45 µm	50/pk	68962504
Whatman™ syringe filters for sterile filtration			
Puradisc™ 4 mm Polyvinylidene Difluoride Syringe Filter	0.2 µm	50/pk	67910402
Puradisc™ 25 mm Polyvinylidene Difluoride Syringe Filter	0.2 µm	50/pk	67802502
Puradisc™ 25 mm Polyvinylidene Difluoride Syringe Filter	0.45 µm	50/pk	67802504
Whatman™ Mini-UniPrep™ syringeless filters for LC and LC-MS			
Mini-UniPrep™ Syringeless Filter, translucent housing, slit septum cap, PES filtration med	0.2 µm	100/pk	US203NPEPES
Mini-UniPrep™ Syringeless Filter, translucent housing, std cap, RC filtration med	0.2 µm	100/pk	UN203NPERC
Sample collection card			
Whatman™ 903 ProteinSaver card (US)	N/A	100/pk	10534612
Whatman™ 903 ProteinSaver card (EU)	N/A	100/pk	10531018

For more information on buffer and sample filtration, please visit [cytiva.com/whatman](https://www.cytiva.com/whatman)

Nucleic acid sample preparation

DNA preparation

Sample types	Starting quantity (DNA yield)	Tissue and cells genomicPrep Mini Spin Kit	Blood genomicPrep Mini Spin Kit	Bacteria genomicPrep Mini Spin Kit	Nucleon™ BACC1 Genomic DNA Kit	Nucleon™ BACC3 Genomic DNA Kit	Nucleon™ PhytoPure	GenomiPhi™ V2 Amplification Kit	GenomiPhi™ V3 Amplification Kit	GenomiPhi™ Single Cell Amplification Kit	GenomiPhi™ HY Amplification Kit	Sera-Xtracta™ Cell-Free DNA Kit	Sera-Xtracta™ HMW DNA Kit	Sera-Xtracta™ Virus/Pathogen Kit
Animal tissue	As low as 1 cell (4 to 7 µg DNA yield)									•				
	< 300 cells (4 to 7 µg DNA yield)							•			•			
	< 300 cells (12 to 20 µg DNA yield)								•					
	> 300 cells (40 to 50 µg DNA yield)										•			
	Up to 25 mg												•	
Paraffin-embedded tissue or difficult samples	5 to 50 mg	•												
	Up to 30 mg												•	
Cultured cells	As low as 1 cell (4 to 7 µg DNA yield)									•				
	< 300 cells (4 to 7 µg DNA yield)							•						
	< 300 cells (12 to 20 µg DNA yield)								•					
	> 300 cells (40 to 50 µg DNA yield)										•			
	Up to 5.0 × 10 ⁵ cells	•												
	1 to 3 × 10 ⁵ cells				•									
Blood	Up to 1 × 10 ⁶ cells												•	
	3 × 10 ⁶ to 1 × 10 ⁷ cells					•								
	As low as 1 µL (4 to 7 µg DNA yield)									•				
	5 to 10 µL (4 to 7 µg DNA yield)							•						
	5 to 10 µL (12 to 20 µg DNA yield)								•					
	5 to 10 µL (40 to 50 µg DNA yield)										•			
	50 to 300 µL		•											
1 mL				•										
Plasma	Up to 2 mL												•	
	10 mL					•								
	Up to 4 mL											•		
Serum	Up to 4 mL											•		
Urine	Up to 4 mL											•		

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Nucleic acid sample preparation (cont.)

DNA preparation

Sample types	Starting quantity (DNA yield)	Tissue and cells genomicPrep Mini Spin Kit	Blood genomicPrep Mini Spin Kit	Bacteria genomicPrep Mini Spin Kit	Nucleon™ BACC1 Genomic DNA Kit	Nucleon™ BACC3 Genomic DNA Kit	Nucleon™ PhytoPure	GenomiPhi™ V2 Amplification Kit	GenomiPhi™ V3 Amplification Kit	GenomiPhi™ Single Cell Amplification Kit	GenomiPhi™ HY Amplification Kit	Sera-Xtracta™ Cell-Free DNA Kit	Sera-Xtracta™ HMW DNA Kit	Sera-Xtracta™ Virus/Pathogen Kit
Buffy coat	As low as 1 µL (4 to 7 µg DNA yield)									•				
	5 to 10 µL (4 to 7 µg DNA yield)							•						
	5 to 10 µL (12 to 20 µg DNA yield)								•					
	5 to 10 µL (40 to 50 µg DNA yield)										•			
	50 to 300 µL		•											
	Up to 2 mL (6.6 × 10 ⁶ cells)												•	
Nucleated red blood cells	As low as 1 µL (4 to 7 µg DNA yield)									•				
	10 µL (4 to 7 µg DNA yield)							•						
	10 µL (12 to 20 µg DNA yield)								•					
	10 µL (40 to 50 µg DNA yield)										•			
	10 µL		•											
	Up to 2 mL												•	
Bone marrow (suspended cells)	As low as 1 µL (4 to 7 µg DNA yield)									•				
	5 to 10 µL (4 to 7 µg DNA yield)							•						
	5 to 10 µL (12 to 20 µg DNA yield)								•					
	5 to 10 µL (40 to 50 µg DNA yield)										•			
	200 µL		•											
	Up to 2 mL												•	
Bacteria (Gram - and +)	As low as 1 cell (4 to 7 µg DNA yield)									•				
	< 300 cells (4 to 7 µg DNA yield)							•						
	< 300 cells (12 to 20 µg DNA yield)								•					
	> 300 cells (40 to 50 µg DNA yield)										•			
	Up to 4.0 × 10 ⁹			•										
	Up to 2 mL (1 × 10 ⁶ cells)												•	
Plants	1 cm leaf (4 to 7 µg DNA yield)							•		•				
	1 cm leaf (12 to 20 µg DNA yield)								•					
	1 cm leaf (40 to 50 µg DNA yield)			•							•			
	1 seed (4 to 7 µg DNA yield)							•						
	1 seed (12 to 20 µg DNA yield)								•					
	1 seed (40 to 50 µg DNA yield)										•			
	Up to 1.0 g						•							

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Nucleic acid sample preparation (cont.)

DNA preparation

Sample types	Starting quantity (DNA yield)	Tissue and cells genomicPrep Mini Spin Kit	Blood genomicPrep Mini Spin Kit	Bacteria genomicPrep Mini Spin Kit	Nucleon™ BACC1 Genomic DNA Kit	Nucleon™ BACC3 Genomic DNA Kit	Nucleon™ PhytoPure	GenomiPhi™ V2 Amplification Kit	GenomiPhi™ V3 Amplification Kit	GenomiPhi™ Single Cell Amplification Kit	GenomiPhi™ HY Amplification Kit	Sera-Xtracta™ Cell-Free DNA Kit	Sera-Xtracta™ HMW DNA Kit	Sera-Xtracta™ Virus/Pathogen Kit
Collection paper/ Guthrie card	3 × 3 mm piece (4 to 7 µg DNA yield)							•		•				•
	3 × 3 mm piece (12 to 20 µg DNA yield)								•					
	3 × 3 mm piece (40 to 50 µg DNA yield)										•			
Buccal swab	Single swab		•					•						
	Single swab (4 to 7 µg DNA yield)							•						•
	Single swab (12 to 20 µg DNA yield)								•					
	Single swab (40 to 50 µg DNA yield)										•			
	Up to 2 mL												•	
Universal transport media	Up to 400 µL													•
Purified genomic DNA	As low as 1 fg (4 to 7 µg DNA yield)									•				
	> 10 ng (4 to 7 µg DNA yield)							•						
	> 10 ng (12 to 20 µg DNA yield)								•					
	> 10 ng (40 to 50 µg DNA yield)										•			
Downstream applications	Genotyping	•	•	•	•	•	•	•	•	•	•	•	•	•
	Cloning and sequencing	•	•	•	•	•	•	•	•	•	•	•	•	•

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Nucleic acid sample preparation (cont.)

Plasmid DNA preparation

Sample types	Starting quantity	PlasmidPrep Mini Spin Kit	PlasmidPrep Midi Flow Kit	TempliPhi™ 100/500 Amplification Kit*	TempliPhi™ Large Construct Kit*	TempliPhi™ Sequence Resolver Kit*
Bacterial culture	1 µL (high-throughput)			•	•	•
	1 µL (low- to medium-throughput)			•		
	1 to 3 mL	•				
	25 to 500 mL		•			
Bacterial colony	< 1 colony (high-throughput)			•	•	•
	< 1 colony (low- to medium-throughput)			•		
Bacteria glycerol stock	< 1 µL (high-throughput)			•	•	•
	< 1 µL (low- to medium-throughput)			•		
Purified DNA (small vectors)	> 1 ng (high-throughput)			•	•	•
	> 1 ng (low- to medium-throughput)			•		
Purified BAC/fosmid DNA	> 1 ng				•	
Difficult templates (GC rich, secondary structures)	0.1 to 1 ng					•
M13 phage plaque	< 1 plaque			•		
M13 phage glycerol stock	< 1 µL			•		
	Cloning	•	•			
Downstream applications	Sequencing	•	•	•	•	•

* Can be used directly for PCR and subcloning. Additional steps will be needed for transformation or transfection.

RNA preparation

Sample type and format	Starting quantity	RNAspin Mini Kit	RNAspin 96 Kit	Sera-Mag™ Oligo (dT) Beads	Sera-Xtracta™ Virus/Pathogen Kit
Total RNA					
Cultured cells and tissue	Up to 200 mg tissue or 5 × 10 ⁷ cells			•	
Tube format	10 to 30 mg or up to 2 × 10 ⁶ cells	•		•	
96-well plate vacuum	10 to 30 mg or up to 2 × 10 ⁶ cells		•	•	
96-well plate centrifuge	30 mg or up to 1 × 10 ⁷ cells		•	•	
mRNA purification	1 to 5 × 10 ⁷ cells or 0.5 g tissue			•	
Eukaryotic cells or tissue	1 to 1 × 10 ⁷ cells or 100 mg tissue			•	
Eukaryotic total RNA	Total RNA or 25 mg to 1 g tissue			•	
Buccal	Down to 1 copy/µL				•
Collection paper	Down to 50 copies/µL				•
Downstream applications	Gene expression	•	•	•	

For more information on nucleic acid sample preparation, please visit [cytiva.com/sampleprep](https://www.cytiva.com/sampleprep)

Nucleic acid sample preparation (cont.)

DNA, RNA, and protein preparation

Sample type	Starting quantity	TriplePrep Kit
Cultured cells	0.3 to 5 × 10 ⁷ cells	•
Animal tissue	1 to 20 mg tissue	•
Downstream applications	Cloning and sequencing	•
	Gene expression	•
	Genotyping	•
	Protein analysis (1-D, 2-D, LCMS)	•

For more information on nucleic acid sample preparation, please visit [cytiva.com/sampleprep](https://www.cytiva.com/sampleprep)

PCR and RT-PCR

Amplification method	Starting quantity	Amersham™ Hot Start Mix in Ready-To-Go™ format*	Amersham™ Hot Start Master Mix	PuReTaq™ PCR Beads in Ready-To-Go™ format*	Ready-To-Go™ RAPD Analysis Beads/Kits	Ready-To-Go™ RT-PCR beads*
PCR	Basic PCR (amplicon up to 3 kb)	•	•	•	•	
	Hot start PCR (amplicon up to 3 kb)	•	•			
RT-PCR	Basic RT-PCR (amplicon up to 3 kb)					•
Downstream applications	Genotyping	•	•	•	•	•
	Cloning and sequencing	•	•	•	•	•
	Gene expression	•	•	•	•	•

* Ready-To-Go™/RTG™ is a single-dose, room temperature stable bead format that contains all PCR or RT-PCR components. You only need to add DNA template, primer, and water for a reaction.

Nucleic acid sample preparation (cont.)

DNA clean-up

Sample types	Starting quantity	ExoProStar™ enzyme kits	GFX™ PCR and Gel Band Kit	GFX™ 96 PCR Kit	AutoSeq G-50	ProbeQuant™ G-50 columns	NICK columns	NAP™-5 columns	NAP™-10 columns	NAP™-25 columns	Sera-Mag™ Select	MicroSpin™ G-25 columns	MicroSpin™ G-50 columns	MicroSpin™ S-200 columns	MicroSpin™ S-300 columns	MicroSpin™ S-400 columns
PCR products	Any size, for sequencing only	•									•					
	50 bp to 10 kb, few samples	•	•								•					
	100 bp to 10 kb, many samples	•		•							•					
	10 to 50 bp	•									•	•				
Agarose gel slices or enzyme removal	50 kbp to 10 bp		•													
Sequencing reactions	12 to 25 µL	•			•						•					
Labeled DNA fragments	> 20 bases	•				•										
	> 10 bases	•										•				
	100 µg sample in 100 µL or no microcentrifuge						•									
Oligonucleotides	100 to 150 µL											•				
	0.1 to 0.5 mL							•								
	0.5 to 1 mL								•							
	1 to 2.5 mL									•						
A range of sample types	25 to 50 µL for labeled DNA	•														
	PCR, sequencing, and labeling reactions												•			
A range of volumes and sample sizes	PCR (25 to 50 µL) or labeling reaction (25 to 50 µL) < 100 bp	•												•		
	PCR (25 to 50 µL) or labeling reaction (50 to 75 µL) or fragment < 200 bp	•									•				•	
	PCR (50 to 100 µL) or labeling reaction (75 to 100 µL) or remove primers > 24 bases	•									•					•
Downstream applications	Cloning and sequencing	•	•	•	•			•	•	•	•	•	•	•	•	•
	Gene expression		•	•		•	•	•	•	•	•	•	•	•	•	•
	Genotyping		•	•							•	•	•	•	•	•

For more information on nucleic acid sample preparation, please visit [cytiva.com/sampleprep](https://www.cytiva.com/sampleprep)

Ordering information – nucleic acid sample preparation

Product	Pack size	Product code
DNA preparation		
DNA purification		
Sera-Xtracta™ HMW DNA Kit	96 purifications	29429140
Sera-Xtracta™ Cell-Free DNA Kit	96 purifications	29437807
Sera-Xtracta™ Virus/Pathogen Kit	96 purifications	29506009
	1000 purifications	29514201
Tissue and cells genomicPrep Mini Spin Kit	50	28904275
	250	28904276
Blood genomicPrep Mini Spin Kit	50	28904264
	250	28904265
Bacteria genomicPrep Mini Spin Kit	50	28904258
	250	28904259
Nucleon™ BACC1 Genomic DNA Kit	50	RPN8501
Nucleon™ BACC3 Genomic DNA Kit	50	RPN8512
Nucleon™ PhytoPure	50 × 0.1 g	RPN8510
	50 × 1.0 g	RPN8511
Whole genome amplification		
GenomiPhi™ V2 DNA Amplification Kit	25	25660030
	100	25660031
	500	25660032
GenomiPhi™ V3 Amplification Kit	24 reactions	25660124
	96 reactions	25660196
	480 reactions	25660197
GenomiPhi™ Single Cell Amplification Kit	24 reactions	25660124
	96 reactions	25660196
	480 reactions	25660197
GenomiPhi™ HY Amplification Kit	25	25660022
	100	25660020
	1000	25660025

Product	Pack size	Product code
Plasmid DNA preparation		
Plasmid DNA purification		
PlasmidPrep Mini Spin Kit	50	28904269
	250	28904270
	10	28904271
PlasmidPrep Midi Flow Kit	25	28904267
	100	28904268
Rolling circle amplification – Template amplification		
TempliPhi™ 100 Amplification Kit	100	25640010
TempliPhi™ 500 Amplification Kit	500	25640050
TempliPhi™ Large Construct Kit	1000	25640080
TempliPhi™ Sequence Resolver Kit	20 rxns	28903529
	200 rxns	28903531
RNA preparation		
Total RNA		
RNAspin Mini Kit	10	25050087
	20	25050070
	50	25050071
	250	25050072
RNAspin 96 Kit	4 × 96	25050075
Sera-Mag™ Oligo (dT) Beads	1 mL	38152103011150
	5 mL	38152103010150
	100 mL	38152103010350
Sera-Xtracta™ Virus/Pathogen Kit	96 purifications	29506009
	1000 purifications	29514201
DNA, RNA, and protein preparation		
TriplePrep Kit	50	28942544

Product	Pack size	Product code
PCR		
PCR kits and components		
Amersham™ Hot Start Mix in Ready-To-Go™ format 0.5 mL	100 rxn	28900646
Amersham™ Hot Start Mix in Ready-To-Go™ format 0.2 mL	96 rxn	28900653
	480 rxn	28900654
Amersham™ Hot Start Master Mix	100	25150001
PuReTaq™ PCR Beads in Ready-To-Go™ format 0.2 mL	96 rxn plate	27955701
	5 × 96 rxn plate	27955702
PuReTaq™ PCR Beads in Ready-To-Go™ format 0.5 mL	100 rxn tubes	27955801
PuReTaq™ PCR Beads in Ready-To-Go™ format 0.2 mL	96 rxn h-tube	27955901
Ready-To-Go™ RAPD Analysis Beads	100	27950001
Ready-To-Go™ RAPD Analysis Kit	100 + 6 Primers	27950201
RT-PCR		
RT-PCR kits and components		
Ready-To-Go™ RT-PCR beads 0.5 mL	100 rxn tubes	27926601
Ready-To-Go™ RT-PCR beads 0.2 mL	96 rxn tube	27926701
	96 rxn h-tube	27925901

Ordering information

Product	Pack size	Product code
DNA clean-up		
Purification of PCR products and restriction fragments		
Sera-Mag™ Select	5 mL	29343045
	60 mL	29343052
	450 mL	29343057
	20 × 5 mL	29453302
GFX™ PCR DNA and Gel Band Purification Kit	10	28903466
	100	28903470
	250	28903471
GFX™ 96 PCR Purification Kit	10 × 96	28903445
MicroSpin™ S-400 HR columns	50	27514001
MicroSpin™ S-300 HR columns	50	27513001
MicroSpin™ G-25 columns	50	27532501
ExoProStar™ enzyme kit	20	US78220
	100	US78210
	500	US78211
	2000	US78212
	5000	US78225
ExoProStar™ 1-Step*	20	US77701
	100	US77702
	500	US77705
	2000	US77720
	5000	US77750
ExoProStar™ S	20	US79002
	100	US79010
	500	US79050
	2000	US79200
	5000	US79500

* Not available in North America or Japan

Product	Pack size	Product code
DNA clean-up		
Dye terminator removal		
AutoSeq G-50	50	27534001
	250	27534002
	1000	27534003
MicroSpin™ G-50 columns	50	27533001
	250	27533002
MicroSpin™ S-200 HR columns	50	27512001
Labeling and clean-up		
NICK columns	20	17085501
	50	17085502
ProbeQuant™ G-50 Micro columns	50	28903408
Desalting and nucleotide removal		
MicroSpin™ G-25 columns	50	27532501
NAP™-5 columns	20	17085301
	50	17085302
NAP™-10 columns	20	17085401
	50	17085402
NAP™-25 columns	20	17085201
	50	17085202
Sephadex™ G-25 DNA Grade SF	100 g	17057202
Sephadex™ G-50 DNA Grade F	25 g	17057301
	100 g	17057302
Sephadex™ G-100 DNA Grade SF	100 g	17057402

Related products	Pack size	Product code
Nucleotides		
Amersham™ PCR Nucleotide Mix dNTP Set (10 mM each A,C,G,T)	500 µmol	28406564
Amersham™ PCR Nucleotide Mix dNTP Set (25 mM each A,C,G,T)	500 µmol	28406560
Amersham™ 2'-Deoxyadenosine 5'-Triphosphate Solution, 100 mM	25 µmol	28406501
	100 µmol	28406502
Amersham™ 2'-Deoxyguanosine 5'-Triphosphate Solution, 100 mM	100 µmol	28406522
Amersham™ 2'-Deoxycytidine 5'-Triphosphate Solution, 100 mM	100 µmol	28406512
Amersham™ DNA Polymerization Mix dNTP Set (20 mM each A,C,G,T)	100 µmol	28406557
Amersham™ 2'-Deoxythymidine 5'-Triphosphate Solution, 100 mM	100 µmol	28406532
Amersham™ 2'-Deoxyuridine 5'-Triphosphate Solution, 100 mM	25 µmol	28406541
	100 µmol	28406542
Amersham™ dNTP Set (100 mM each A,C,G,T)	4 × 10 µmol	28406558
	4 × 25 µmol	28406551
	4 × 100 µmol	28406552
	4 × 500 µmol	28406553

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