

GE Healthcare  
Life Sciences

# Protein and Nucleic Acid Sample Preparation

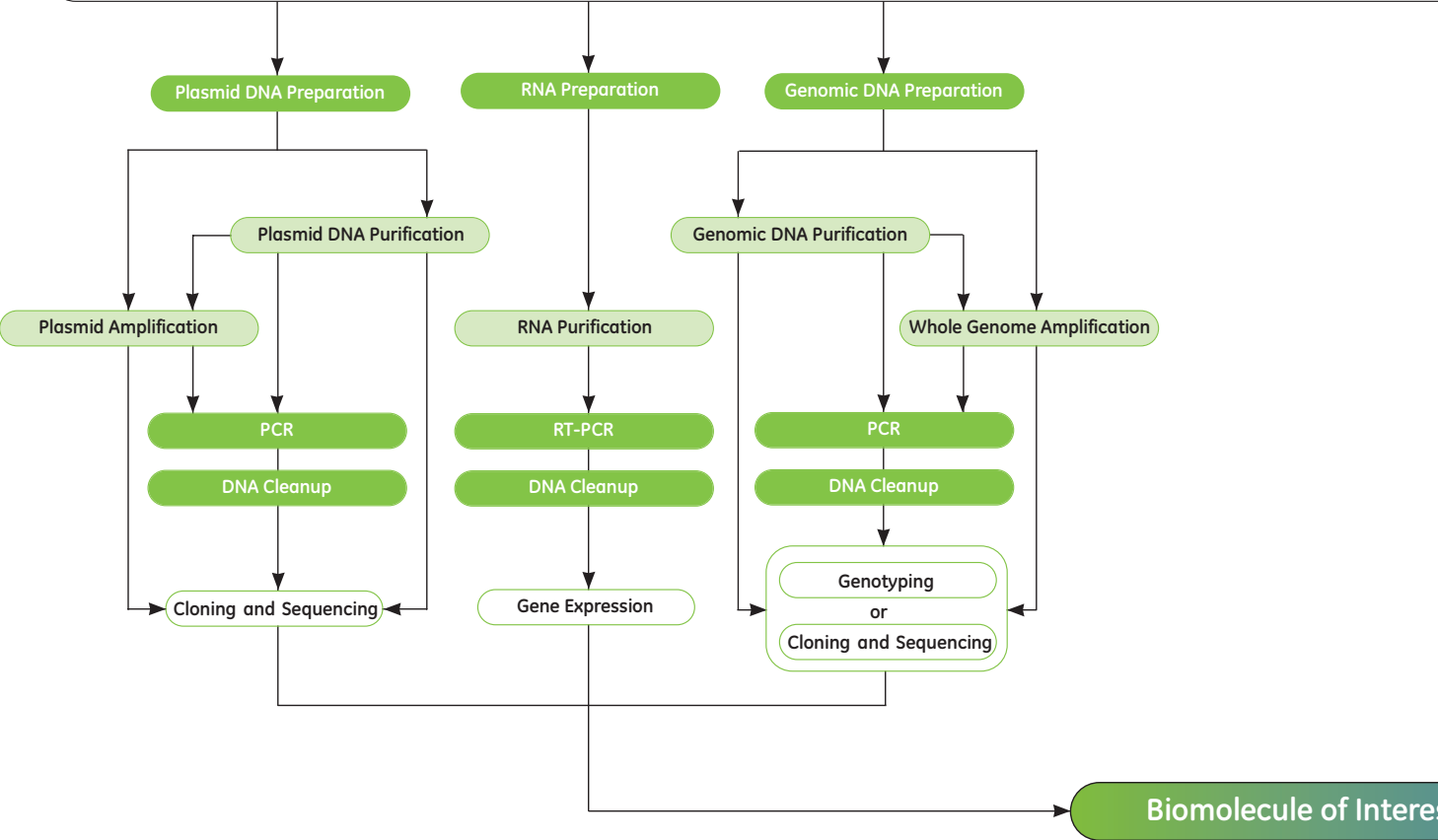
Selection Guide



# Nucleic Acid and Protein Workflows

## Nucleic Acid Workflow Genome and Gene Analysis

Sample(s): Blood, Tissue, E



## Construction of Expression-ready DNA Clones

Sample(s): Cells, E

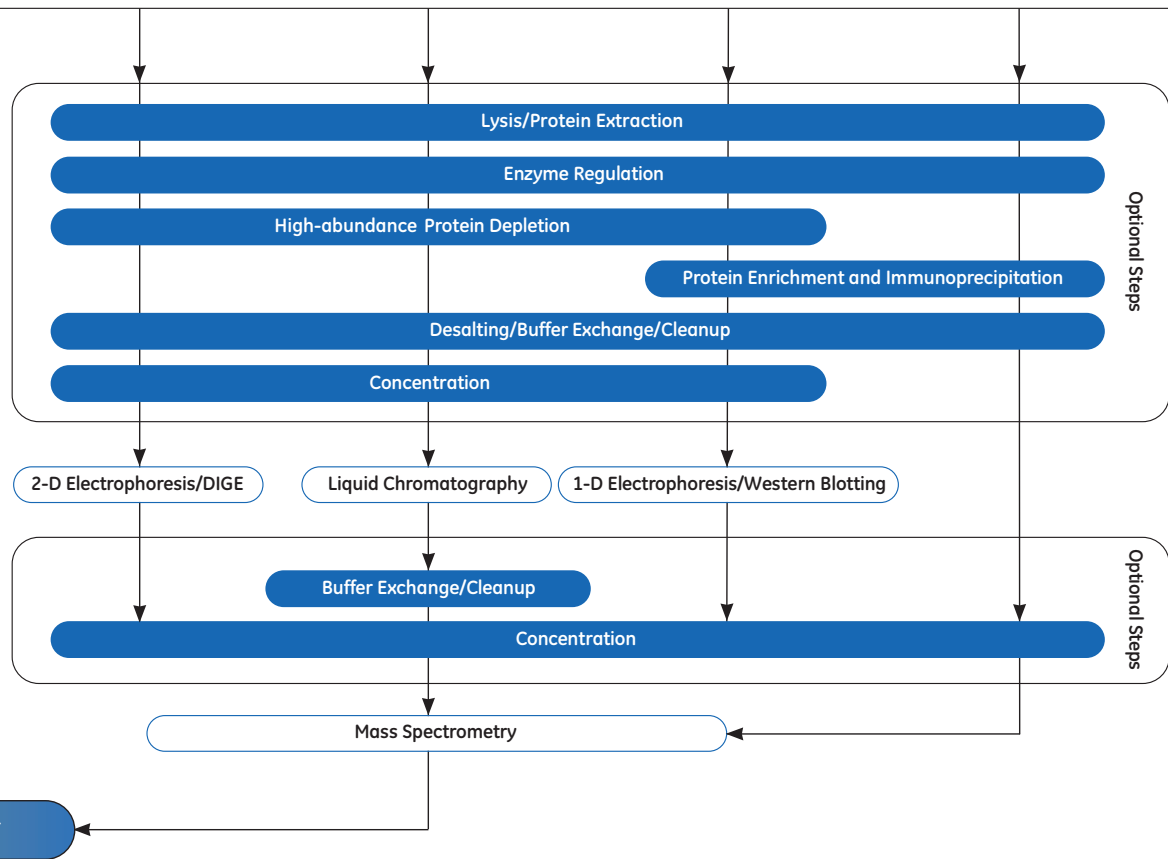


Characterized Biomole

# Protein Workflow

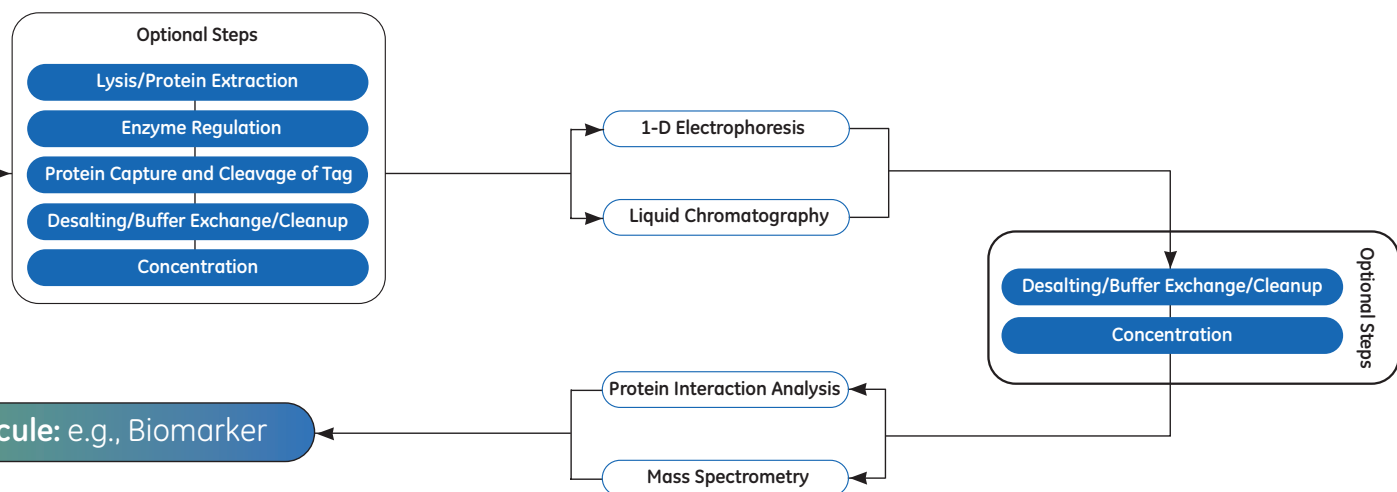
## Differential Expression Analysis Protein Mapping

Cells, Bacteria, Yeast

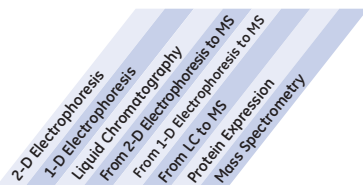


## Overexpression and Purification of Specific Proteins: Structure and Function Studies

Bacteria, Yeast



# Protein Sample Preparation



Untagged Protein Enrichment	Code No.									
NHS HP SpinTrap™	28-9031-28	•								• Bulk NHS HP Sepharose™ and empty spin columns for coupling of an affinity molecule with a primary amine
NHS Mag Sepharose	28-9440-09 28-9513-80	•								• Magnetic beads for coupling of an affinity molecule with a primary amine, pull-down applications
NHS HP SpinTrap Buffer Kit	28-9135-69	•								• Buffers for immuno-affinity enrichment using NHS HP SpinTrap
Streptavidin HP SpinTrap	28-9031-30	•								• Coupling of a biotinylated affinity molecule, spin column format
Streptavidin HP SpinTrap Buffer Kit	28-9135-68	•								• Buffers for immuno-affinity enrichment using Streptavidin HP SpinTrap
Streptavidin HP MultiTrap™	28-9031-31	•								• Coupling of a biotinylated affinity molecule in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Streptavidin Mag Sepharose	28-9857-38 28-9857-99	•								• Magnetic beads for coupling of a biotinylated affinity molecule for IP experiment or direct capture of biotinylated biomolecules
Protein A HP SpinTrap	28-9031-32	•								• Coupling of an IgG affinity molecule, spin column format
Protein A HP MultiTrap	28-9031-33	•								• Coupling of an IgG affinity molecule in 96-well filter plates by vacuum or centrifuge, large sample series or automation
Protein A Mag Sepharose	28-9440-06 28-9513-78	•								• Magnetic beads for coupling of an IgG affinity molecule, immunoprecipitation applications
Protein G HP SpinTrap	28-9031-34	•								• Coupling of an IgG affinity molecule, spin column format
Protein A/G HP SpinTrap Buffer Kit	28-9135-67	•								• Buffers for immuno-affinity enrichment using the Protein A HP SpinTrap, Protein G HP SpinTrap, and Ab SpinTrap
Protein G HP MultiTrap	28-9031-35	•								• Coupling of an IgG affinity molecule in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Protein G Mag Sepharose	28-9440-08 28-9513-79	•								• Magnetic beads for coupling of an IgG affinity molecule, immunoprecipitation applications
Ab SpinTrap	28-4083-47	•								• Coupling of an IgG affinity molecule, spin column format, larger pack size
Immunoprecipitation Starter Pack	17-6002-35	•								• Coupling of an IgG affinity molecule, batch application
Phos SpinTrap Fe	28-9298-81	•								• Enrichment of phosphorylated peptides, spin column format, IMAC precharged with Fe
TiO <sub>2</sub> Mag Sepharose	28-9440-10 28-9513-77	•								• Magnetic beads, titanium dioxide chromatography for enrichment of phosphorylated peptides
MagRack 6	28-9489-64									Magnetic rack designed for Mag Sepharose products, enables preparation of up to six samples in 1.5 ml microcentrifuge tubes
MagRack Maxi	28-9864-41									Magnetic rack designed for Mag Sepharose, enables preparation of sample volumes up to 50 ml

## Small-scale Antibody Purification

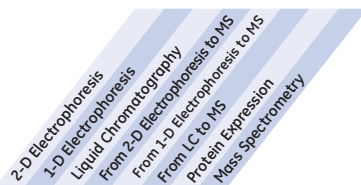
Protein A HP SpinTrap	28-9031-32	•								• Purification of IgG, spin column format
Protein A HP MultiTrap	28-9031-33	•								• Purification of IgG in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Protein A Mag Sepharose Xtra	28-9670-56 28-9670-62	•								• Magnetic beads for small-scale purification/screening of monoclonal and polyclonal antibodies from various species
Protein G HP SpinTrap	28-9031-34	•								• Purification of IgG, spin column format
Protein G HP MultiTrap	28-9031-35	•								• Purification of IgG in 96-well filter plates by vacuum or centrifuge, larger sample series or automation
Protein G Mag Sepharose Xtra	28-9670-66 28-9670-70	•								• Magnetic beads for small-scale purification/screening of monoclonal and polyclonal antibodies from various species
Ab SpinTrap	28-4083-47	•								• Purification of IgG, spin column format, larger pack size
Ab Buffer Kit	28-9030-59	•								• Buffers for antibody purification using the Protein A HP SpinTrap, Protein G HP SpinTrap, and Ab SpinTrap
rProtein A GraviTrap™	28-9852-54	•								• Purification of antibodies in milligram scale, gravity-flow column
Protein G GraviTrap	28-9852-55	•								• Purification of antibodies in milligram scale, gravity-flow column
rProtein A/Protein G GraviTrap	28-9852-56	•								• Purification of antibodies in milligram scale, gravity-flow column

## Desalting/Buffer Exchange/Clean-up

Disposable PD-10 Desalting	17-0851-01	•	•				•	•		• Clean-up of proteins/oligosaccharides, sample volumes up to 2.5 ml, gravity-flow/centrifugation
LabMate™ PD-10 Buffer	18-3216-03	•	•				•	•		• Buffer reservoir for easy equilibration
PD MidiTrap™ G-25	28-9180-08	•	•				•	•		• Clean-up of proteins/oligosaccharides, sample volumes up to 1.0 ml, gravity-flow/centrifugation
PD MiniTrap™ G-25	28-9180-07	•	•				•	•		• Clean-up of proteins/oligosaccharides, sample volumes up to 0.5 ml, gravity-flow/centrifugation
PD SpinTrap G-25	28-9180-04	•	•				•	•		• Clean-up of proteins/oligosaccharides, sample volumes up to 130 µl, microcentrifugation
PD MultiTrap G-25	28-9180-06	•	•				•	•		• 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	28-9180-11	•	•				•	•		• Clean-up of peptides/small proteins, sample volumes up to 800 µl, gravity flow
PD MiniTrap G-10	28-9180-10	•	•				•	•		• Clean-up of peptides/small proteins, sample volumes up to 300 µl, gravity flow

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

# Protein Sample Preparation (cont.)



## Desalting/Buffer Exchange/Clean-up (cont.)

Mini Dialysis Kit – 1 kDa cut-off	80-6483-75	•	•	•	•	•	•	•	•	Dialysis of small sample volumes, 250 µl and 2 ml
	80-6483-94	•	•	•	•	•	•	•	•	Dialysis of small sample volumes, max. sample volume 2 ml
Mini Dialysis Kit – 8 kDa cut-off	80-6484-13	•	•	•	•	•	•	•	•	Dialysis of small sample volumes, 250 µl and 2 ml
	80-6484-32	•	•	•	•	•	•	•	•	Dialysis of small sample volumes, max. sample volume 2 ml
2-D Clean-Up Kit	80-6484-51	•	•	•	•	•	•	•	•	Removal of interfering contaminants and concentration of total protein
SDS-PAGE Clean-Up Kit	80-6484-70	•	•	•	•	•	•	•	•	Removal of interfering contaminants

## Enzyme Regulation

Protease Inhibitor Mix	80-6501-23	•	•	•	•	•	•	•	•	Protease inhibitor cocktail
Nuclease Mix	80-6501-42	•	•	•	•	•	•	•	•	Cocktail of nucleases for the removal of DNA and RNA from the protein sample

## Fractionation

2-D Fractionation Kit	80-6501-04	•	•	•	•	•	•	•	•	Fractionation of the total protein in the sample into six discrete fractions
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## Total Protein Quantitation

2-D Quant Kit	80-6483-56	•	•	•	•	•	•	•	•	Quantitation of protein amount using a colorimetric assay
NanoVue™ Plus	28-9569-65	•	•	•	•	•	•	•	•	UV/Visible spectrophotometer for quick and accurate quantitation of nucleic acids and proteins, 0.5 to 2 µl sample volumes

## Histidine-tagged Protein Capture

His GraviTrap	11-0033-99	•	•	•	•	•	•	•	•	Purification of histidine-tagged proteins, with high binding capacity, gravity flow column
His GraviTrap TALON	29-0005-94	•	•	•	•	•	•	•	•	Gravity flow columns for purification of histidine-tagged proteins to high purity
His Mag Sepharose Ni	28-9673-88 28-9673-90 28-9799-17	•	•	•	•	•	•	•	•	Magnetic beads for small-scale purification/screening of histidine-tagged proteins
His Mag Sepharose excel	17-3712-20 17-3712-21 17-3712-22	•	•	•	•	•	•	•	•	Magnetic beads for small-scale purification/screening of histidine-tagged proteins from expression in mammalian and insect cell systems
His GraviTrap Kit	28-4013-51	•	•	•	•	•	•	•	•	Gravity flow columns for histidine-tagged protein purification and buffers
His MultiTrap HP	28-4009-89	•	•	•	•	•	•	•	•	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	28-4009-90	•	•	•	•	•	•	•	•	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 TALON	29-0005-96	•	•	•	•	•	•	•	•	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	28-4013-53	•	•	•	•	•	•	•	•	Purification of histidine-tagged proteins with high binding capacity, spin column format
His SpinTrap TALON	29-0005-93	•	•	•	•	•	•	•	•	Purification of histidine-tagged proteins with high purity, spin column format
His SpinTrap Kit	28-9321-71	•	•	•	•	•	•	•	•	Microspin columns and premade buffers for histidine-tagged protein purification
His Buffer Kit	11-0034-00	•	•	•	•	•	•	•	•	Buffers for the purification of histidine-tagged proteins using His GraviTrap, HisTrap, or His SpinTrap
Anti-His Antibody	27-4710-01	•	•	•	•	•	•	•	•	Unconjugated antibody with affinity for the histidine tag
HisTrap™ HP columns	17-5247-01	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA™
HisTrap FF columns	17-5319-01	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
HisPrep™ FF 16/10 column	17-5256-01	•	•	•	•	•	•	•	•	Easy scale-up purification of histidine-tagged proteins
HisTrap FF crude Kit	28-4014-77	•	•	•	•	•	•	•	•	Purification with a syringe or chromatography system such as ÄKTA, no filtration of the sample

## Maltose Binding Protein (MBP)-tagged Protein Capture

MBPTrap™ HP	28-9187-78	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
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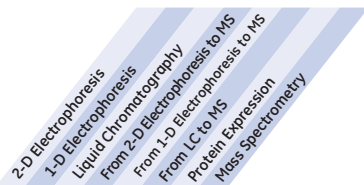
## Strep-tag™ II-tagged Protein Capture

StrepTrap™ HP	28-9075-46	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
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## GST-tagged Protein Capture

GST Detection Module	27-4590-01	•	•	•	•	•	•	•	•	Identification of GST-tagged proteins by biochemical or immunological assay
GST 96-well Detection Module	27-4592-01	•	•	•	•	•	•	•	•	Reagents and plates with precoated wells for the detection of GST-tagged proteins
GSTPrep™ FF 16/10 column	28-9365-50	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
GSTPrep™ HP columns	17-5281-01	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
GSTrap FF columns	17-5130-02	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
GSTrap 4B columns	28-4017-45	•	•	•	•	•	•	•	•	Simple purification with a syringe or chromatography system such as ÄKTA
GST GraviTrap	28-9523-60	•	•	•	•	•	•	•	•	Purification of GST-tagged proteins in gravity-flow format
GST MultiTrap FF	28-4055-01	•	•	•	•	•	•	•	•	Purification of GST-tagged proteins in 96-well filter plates by vacuum or centrifuge, for larger sample series or automation

# Protein Sample Preparation (cont.)



## GST-tagged Protein Capture (cont.)

GST MultiTrap 4B	28-4055-00									•	Purification of GST-tagged proteins in 96-well filter plates by vacuum or centrifuge, for larger sample series or automation
GST SpinTrap	28-9523-59									•	Purification of GST-tagged proteins, spin column format
GST Buffer Kit	28-9523-61									•	Buffers for purification of GST-tagged proteins using GSTrap, GST GraviTrap, or GST SpinTrap
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	27-1542-01									•	Bacterial strain for the expression of GST fusion protein
M13K07 Helper Phage	27-1524-01									•	M13 phage for the GST expression system
GST Bulk Kit	27-4570-01									•	Bulk Glutathione Sepharose 4B and empty gravity columns
PreScission™ Protease	27-0843-01									•	Purified enzyme for site-specific cleavage of the GST tag from fusion proteins expressed using pGEX-P vectors
Thrombin	27-0846-01									•	Purified enzyme for site-specific cleavage of the GST tag from fusion proteins expressed using pGEX-T vectors
Factor Xa	27-0849-01									•	Purified enzyme for site-specific cleavage of the GST tag from fusion proteins expressed using pGEX-X vectors
Anti-GST Antibody	27-4577-01									•	Unconjugated antibody with affinity for the GST tag

## Protein Depletion

HiTrap™ Albumin & IgG Depletion	28-9466-03	•	•	•							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
Albumin & IgG Depletion SpinTrap	28-9480-20	•	•	•							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	80-6483-37	•	•	•	•					•	The mechanical breaking up of cells or tissue releasing the total protein content
Yeast Protein Extraction Buffer Kit	28-9440-45	•	•	•						•	Extraction of proteins from yeast cells
Mammalian Protein Extraction Buffer	28-9412-79	•	•	•						•	Extraction of proteins from mammalian cells
2-D Protein Extraction Buffer Trial Kit	28-9435-22	•	•	•						•	Protein extraction from tissues and cell lines, trial kit with six different buffers for optimization of the method
2-D Protein Extraction Buffer-I	28-9435-23	•	•	•						•	Protein extraction buffer - larger volume of Buffer-I from the trial kit
2-D Protein Extraction Buffer-II	28-9435-24	•	•	•						•	Protein extraction buffer - larger volume of Buffer-II from the trial kit
2-D Protein Extraction Buffer-III	28-9435-25	•	•	•						•	Protein extraction buffer - larger volume of Buffer-III from the trial kit
2-D Protein Extraction Buffer-IV	28-9435-26	•	•	•						•	Protein extraction buffer - larger volume of Buffer-IV from the trial kit
2-D Protein Extraction Buffer-V	28-9435-27	•	•	•						•	Protein extraction buffer - larger volume of Buffer-V from the trial kit
2-D Protein Extraction Buffer-VI	28-9435-28	•	•	•						•	Protein extraction buffer - larger volume of Buffer-VI from the trial kit
illustra™ triplePrep Kit	28-9425-44	•	•	•						•	Extraction of DNA, RNA, and protein from the same undivided sample

## Protein Concentration

Vivaspin 500, 3 kDa MWCO PES	28-9322-18	•	•	•	•	•	•	•	•	•	Concentration of up to 500 µl sample through ultrafiltration, 3 kDa cut-off
Vivaspin 500, 5 kDa MWCO PES	28-9322-23	•	•	•	•	•	•	•	•	•	Concentration of up to 500 µl sample through ultrafiltration, 5 kDa cut-off
Vivaspin 500, 10 kDa MWCO PES	28-9322-25	•	•	•	•	•	•	•	•	•	Concentration of up to 500 µl sample through ultrafiltration, 10 kDa cut-off
Vivaspin 500, 30 kDa MWCO PES	28-9322-35	•	•	•	•	•	•	•	•	•	Concentration of up to 500 µl sample through ultrafiltration, 30 kDa cut-off
Vivaspin 500, 50 kDa MWCO PES	28-9322-36	•	•	•	•	•	•	•	•	•	Concentration of up to 500 µl sample through ultrafiltration, 50 kDa cut-off
Vivaspin 500, 100 kDa MWCO PES	28-9322-37	•	•	•	•	•	•	•	•	•	Concentration of up to 500 µl sample through ultrafiltration, 100 kDa cut-off
Vivaspin 2, 3 kDa MWCO PES	28-9322-40	•	•	•	•	•	•	•	•	•	Concentration of up to 2 ml sample through ultrafiltration, 3 kDa cut-off
Vivaspin 2, 5 kDa MWCO PES	28-9322-45	•	•	•	•	•	•	•	•	•	Concentration of up to 2 ml sample through ultrafiltration, 5 kDa cut-off
Vivaspin 2, 10 kDa MWCO PES	28-9322-47	•	•	•	•	•	•	•	•	•	Concentration of up to 2 ml sample through ultrafiltration, 10 kDa cut-off
Vivaspin 2, 30 kDa MWCO PES	28-9322-48	•	•	•	•	•	•	•	•	•	Concentration of up to 2 ml sample through ultrafiltration, 30 kDa cut-off
Vivaspin 2, 50 kDa MWCO PES	28-9322-57	•	•	•	•	•	•	•	•	•	Concentration of up to 2 ml sample through ultrafiltration, 50 kDa cut-off
Vivaspin 2, 100 kDa MWCO PES	28-9322-58	•	•	•	•	•	•	•	•	•	Concentration of up to 2 ml sample through ultrafiltration, 100 kDa cut-off
Vivaspin 6, 3 kDa MWCO PES	28-9322-93	•	•	•	•	•	•	•	•	•	Concentration of up to 6 ml sample through ultrafiltration, 3 kDa cut-off
Vivaspin 6, 5 kDa MWCO PES	28-9322-94	•	•	•	•	•	•	•	•	•	Concentration of up to 6 ml sample through ultrafiltration, 5 kDa cut-off
Vivaspin 6, 10 kDa MWCO PES	28-9322-96	•	•	•	•	•	•	•	•	•	Concentration of up to 6 ml sample through ultrafiltration, 10 kDa cut-off
Vivaspin 6, 30 kDa MWCO PES	28-9323-17	•	•	•	•	•	•	•	•	•	Concentration of up to 6 ml sample through ultrafiltration, 30 kDa cut-off
Vivaspin 6, 50 kDa MWCO PES	28-9323-18	•	•	•	•	•	•	•	•	•	Concentration of up to 6 ml sample through ultrafiltration, 50 kDa cut-off
Vivaspin 6, 100 kDa MWCO PES	28-9323-19	•	•	•	•	•	•	•	•	•	Concentration of up to 6 ml sample through ultrafiltration, 100 kDa cut-off
Vivaspin 20, 3 kDa MWCO PES	28-9323-58	•	•	•	•	•	•	•	•	•	Concentration of up to 20 ml sample through ultrafiltration, 3 kDa cut-off
Vivaspin 20, 5 kDa MWCO PES	28-9323-59	•	•	•	•	•	•	•	•	•	Concentration of up to 20 ml sample through ultrafiltration, 5 kDa cut-off
Vivaspin 20, 10 kDa MWCO PES	28-9323-60	•	•	•	•	•	•	•	•	•	Concentration of up to 20 ml sample through ultrafiltration, 10 kDa cut-off
Vivaspin 20, 30 kDa MWCO PES	28-9323-61	•	•	•	•	•	•	•	•	•	Concentration of up to 20 ml sample through ultrafiltration, 30 kDa cut-off
Vivaspin 20, 50 kDa MWCO PES	28-9323-62	•	•	•	•	•	•	•	•	•	Concentration of up to 20 ml sample through ultrafiltration, 50 kDa cut-off
Vivaspin 20, 100 kDa MWCO PES	28-9323-63	•	•	•	•	•	•	•	•	•	Concentration of up to 20 ml sample through ultrafiltration, 100 kDa cut-off

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

# Buffer and Sample Filtration, Sample Collection

	Pack Size	Code No.
<b>Klari-Flex™ Bottle Top Filtration System for Sterile Filtration</b>		
KF 250 ml 0.22 PES Funl Sterile	12/pk	6515-2502
KF 500 ml 0.22 PES Funl Sterile	12/pk	6515-5002
KF 1000 ml 0.22 PES Funl Sterile	12/pk	6515-1002
<b>Klari-Flex Bottle Top System Hardware for Sterile Filtration</b>		
KF Cradle Ring	1/pk	6517-0001
KF Pedestal Stand	1/pk	6517-0002
<b>Polycap PES Filter Capsules for Sterile Filtration</b>		
Polycap 36 0.2/0.2 PES with filling bell/Sterile	1/pk	6715-3602
Polycap 36 0.2/0.2 PES with filling bell/Sterile	1/pk	6715-7502
Polycap 150 0.2/0.2 PES with filling bell/Sterile	1/pk	6718-9502
<b>SPARTAN™ 13 mm Syringe Filters</b>		
13 mm Spartan, 0.2 µm RC	100/pk	10463100
13 mm Spartan, 0.45 µm RC	100/pk	10463110
<b>SPARTAN 30 mm Syringe Filters</b>		
30 mm Spartan, 0.2 µm RC	100/pk	10463060
30 mm Spartan, 0.45 µm RC	100/pk	10463050
<b>GD/X Syringe Filter for Lysate Clarification</b>		
25 mm GD/X 0.2 µm PES (Sterile)	50/pk	6896-2502
25 mm GD/X 0.45 µm PES (Sterile)	50/pk	6896-2504
<b>Syringe filters for Sterile Filtration</b>		
4 mm Puradisc 0.2 µm PVDF (Sterile)	50/pk	6791-0402
25 mm Puradisc 0.2 µm PES (Sterile)	50/pk	6780-2502
25 mm Puradisc 0.45 µm PES (Sterile)	50/pk	6780-2504
<b>Mini-UniPrep™ Syringeless Filters for LC and LC-MS</b>		
Mini-UniPrep 0.2 µm PES (with Slit Septum Cap)	100/pk	US203NPEPES
Mini-UniPrep 0.2 µm RC (with Standard Cap)	100/pk	UN203NPERC
<b>Sample Collection Card</b>		
ProteinSaver US	100/pk	10534612
ProteinSaver EU	100/pk	10531018

# Nucleic Acid Sample Preparation

## PCR and RT-PCR

Amplification method	Starting quantity	ExoProStar™	GPX PCR and Gel Band	GPX 96 PCR	MicroSpin G-25	AutoSeq G-25	ProbeQuant G-50	NICK columns	NAP-5 columns	NAP-10 columns	NAP-25 columns	CyScribe GPX	MicroSpin G-50	MicroSpin S-200	MicroSpin S-300	MicroSpin S-400	Hot Start Mix Ready-To-Go*	Hot Start Master Mix Ready-To-Go*	PureTaq Ready-To-Go* PCR	RTG RT-PCR*	
PCR	Basic PCR (amplicon up to 3 kb)																				
	Hot start PCR (amplicon up to 3 kb)																				
	Long-range PCR (amplicon up to 20 kb)																				
RT-PCR	Basic RT-PCR (amplicon up to 3 kb)																				
	Long-range RT-PCR (amplicon up to 6 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.

## DNA Clean-up

Sample types	Starting quantity	ExoProStar™	GPX PCR and Gel Band	GPX 96 PCR	MicroSpin G-25	AutoSeq G-25	ProbeQuant G-50	NICK columns	NAP-5 columns	NAP-10 columns	NAP-25 columns	CyScribe GPX	MicroSpin G-50	MicroSpin S-200	MicroSpin S-300	MicroSpin S-400	
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																
cDNA	CyDye™ labeled probes																
A range of sample types PCR, sequencing, and labeling reactions	25 to 50 µl for labeled DNA																
	10 to 100 µl for buffer exchange or desalting																
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 protein and nucleic acid sample preparation, please visit [www.gelifesciences.com/sampleprep](http://www.gelifesciences.com/sampleprep)



# Nucleic Acid Sample Preparation (cont.)

## Plasmid DNA Preparation

Sample types	Starting quantity	plasmidPrep Mini	plasmidPrep Midi	Tempiphi 100/500*	Tempiphi Large Construct	Tempiphi 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	RNAspin Midi	RNAspin 96	Quickprep mRNA	Quickprep Micro mRNA	mRNA Purification Kit
Total RNA							
Cultured cells and tissue	Up to 200 mg tissue or $5 \times 10^7$ cells	•					
Tube format	10 to 30 mg or up to $2 \times 10^6$ cells	•					
96-well plate vacuum	10 to 30 mg or up to $2 \times 10^6$ cells			•			
96-well plate centrifuge	30 mg or up to $1 \times 10^7$ cells			•			
mRNA purification	1 to $5 \times 10^7$ cells or 0.5 g tissue				•		
Eukaryotic cells or tissue	1 to $1 \times 10^7$ cells or 100 mg tissue					•	
Eukaryotic total RNA	Total RNA or 25 mg to 1 g tissue						•
Downstream applications	Gene expression	•	•	•	•	•	•

## DNA, RNA, and Protein Preparation

Sample type	Starting quantity	triplePrep kit
Cultured cells	$0.3$ to $5 \times 10^7$ 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 [www.gelifsciences.com/sampleprep](http://www.gelifsciences.com/sampleprep)

# Nucleic Acid Sample Preparation (cont.)

## Genomic DNA Preparation

Sample types	Starting quantity (DNA yield)	tissue & cells Mini Spin	tissue & cells Midi Flow	blood Mini Spin	blood Midi Flow	bacteria Mini Spin	BACC1	BACC2 & BACC3	Nucleon HT	Phytopure	GenomiPhi V2	GenomiPhi HV
Animal tissue	> 300 cells (4 to 7 µg DNA yield)									•	•	
	> 300 cells (40 to 50 µg DNA yield)											•
	5 to 50 mg	•										
	Up to 200 mg		•									
Paraffin-embedded tissue or difficult samples	Up to 25 mg							•				
	20 to 30 µm thick paraffin section							•				
Cultured cells	> 300 cells (4 to 7 µg DNA yield)										•	
	> 300 cells (40 to 50 µg DNA yield)											•
	Up to 5.0 × 10 <sup>5</sup> cells	•										
	1 to 3 × 10 <sup>6</sup>					•						
	Up to 2.0 × 10 <sup>7</sup> cells		•									
	3 × 10 <sup>6</sup> to 1 × 10 <sup>7</sup> cells						•					
Blood	5 to 10 µl (4 to 7 µg DNA yield)										•	
	5 to 10 µl (40 to 50 µg DNA yield)											•
	50 to 300 µl			•								
	1 ml					•						
	1 to 8 ml				•							
	10 ml						•					
Buffy coat	5 to 10 µl (4 to 7 µg DNA yield)										•	
	5 to 10 µl (40 to 50 µg DNA yield)											•
	50 to 300 µl			•								
Nucleated red blood cells	10 µl (4 to 7 µg DNA yield)										•	
	10 µl (40 to 50 µg DNA yield)											•
	10 µl			•								
	25 to 200 µl (tested)				•							
Bone marrow (suspended cells)	5 to 10 µl (4 to 7 µg DNA yield)										•	
	5 to 10 µl (40 to 50 µg DNA yield)											•
	200 µl			•								
Bacteria (Gram - and +)	> 300 cells (4 to 7 µg DNA yield)										•	
	> 300 cells (40 to 50 µg DNA yield)											•
	Up to 4.0 × 10 <sup>9</sup>				•							
Plants	1 cm leaf (4 to 7 µg DNA yield)										•	
	1 cm leaf (40 to 50 µg DNA yield)											•
	1 seed (4 to 7 µg DNA yield)										•	
	1 seed (40 to 50 µg DNA yield)											•
	Up to 1.0 g								•			
FTA paper/Guthrie card	3 × 3 mm piece (4 to 7 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 (40 to 50 µg DNA yield)											•
Purified genomic DNA	> 10 ng (4 to 7 µg DNA yield)										•	
	> 10 ng (40 to 50 µg DNA yield)											•
Downstream applications	Genotyping	•	•	•	•	•	•	•	•	•	•	•
	Cloning and sequencing	•	•	•	•	•	•	•	•	•	•	•

# Ordering information

Columns	Pack size	Code No.
<b>Genomic DNA Preparation</b>		
<b>Genomic DNA Purification</b>		
illustra tissue and cells genomicPrep™ Mini Spin Kit	50	28-9042-75
	250	28-9042-76
illustra tissue and cells genomicPrep Midi Flow Kit	25	28-9042-73
illustra blood genomicPrep Mini Spin Kit	50	28-9042-64
	250	28-9042-65
illustra blood genomicPrep Midi Flow Kit	25	28-9042-61
	100	28-9042-62
illustra bacteria genomicPrep Mini Spin Kit	50	28-9042-58
	250	28-9042-59
Nucleon™ BACC1 Genomic DNA Kit	50	RPN8501
Nucleon BACC2 Genomic DNA Kit	50	RPN8502
Nucleon BACC3 Genomic DNA Kit	50	RPN8512
Nucleon PhytoPure	50 × 0.1 g	RPN8510
	50 × 1.0 g	RPN8511
Nucleon HT (hard tissue)	50	RPN8509
<b>Whole Genome Amplification</b>		
illustra GenomiPhi™ V2 DNA Amplification Kit	25	25-6600-30
	100	25-6600-31
	500	25-6600-32
illustra GenomiPhi HY DNA Amplification Kit	25	25-6600-22
	100	25-6600-20
	1000	25-6600-25
<b>Plasmid DNA Preparation</b>		
<b>Plasmid DNA Purification</b>		
illustra plasmidPrep Mini Spin Kit	50	28-9042-69
	250	28-9042-70
illustra plasmidPrep Midi Flow Kit	25	28-9042-67
	100	28-9042-68
Sephacryl™ S-1000 SF	750 ml	17-0476-01
Yeast Plasmid Isolation Kit	50	US79220-50RXNS
<b>Rolling Circle Amplification – Template Amplification</b>		
illustra TempliPhi™ 100 DNA Amplification Kit	100	25-6400-10
illustra TempliPhi 500 DNA Amplification Kit	500	25-6400-50
illustra TempliPhi Large Construct Kit	1000	25-6400-80
illustra TempliPhi Sequence Resolver Kit	20 rxns	28-9035-29
	50 rxns	28-9035-30
	200 rxns	28-9035-31
<b>RNA Preparation</b>		
<b>Total RNA</b>		
illustra RNAspin Mini Kit	20	25-0500-70
	50	25-0500-71
	250	25-0500-72
illustra RNAspin Midi Kit	20	25-0500-73
illustra RNAspin 96 Kit	4 × 96	25-0500-75
illustra RNAspin 96 Filter Plate	1	25-0500-88
illustra CsTFA (solution)	100 ml	17-0847-02
<b>mRNA</b>		
illustra QuickPrep™ Micro mRNA Purification Kit	1	27-9255-01
illustra QuickPrep mRNA Purification Kit	4	27-9254-01
illustra mRNA Purification Kit	2	27-9258-01
	4	27-9258-02
<b>PCR</b>		
<b>PCR Kits &amp; Components</b>		
illustra Hot Start Mix RTG 0.5 ml	100 rxn	28-9006-46
illustra Hot Start Mix RTG 0.2 ml	96 rxn	28-9006-53
	480 rxn	28-9006-54
illustra Hot Start Master Mix	100	25-1500-01
illustra PuReTaq Ready-To-Go™ PCR Beads 0.2 ml	96 rxn plate	27-9557-01
	5 × 96 rxn plate	27-9557-02
illustra PuReTaq Ready-To-Go PCR Beads 0.5 ml	100 rxn tubes	27-9558-01
illustra PuReTaq Ready-To-Go PCR Beads 0.2 ml	96 rxn h-tube	27-9559-01
illustra Ready-To-Go RAPD Analysis Beads	100	27-9500-01
illustra Ready-To-Go RAPD Analysis Kit	100 + 6 Primers	27-9502-01
<b>RT-PCR</b>		
<b>RT-PCR Kits &amp; Components</b>		
illustra Ready-To-Go RT-PCR Beads 0.5 ml	100 rxn tubes	27-9266-01
illustra Ready-To-Go RT-PCR Beads 0.2 ml	96 rxn tube	27-9267-01
	96 rxn h-tube	27-9259-01

Columns	Pack size	Code No.
<b>DNA Clean-up</b>		
<b>Purification of PCR Products and Restriction Fragments</b>		
illustra GFX™ PCR DNA and Gel Band Purification Kit	100	28-9034-70
	250	28-9034-71
illustra GFX 96 PCR Purification Kit	10 × 96	28-9034-45
illustra MicroSpin™ S-400 HR columns	50	27-5140-01
illustra MicroSpin S-300 HR columns	50	27-5130-01
illustra MicroSpin G-25 columns	50	27-5325-01
illustra ExoProStar	20	US78220
	100	US78210
	500	US78211
	2000	US78212
	5000	US78225
illustra ExoProStar 1-Step*	20	US77701
	100	US77702
	500	US77705
	2000	US77720
	5000	US77750
<b>Dye Terminator Removal</b>		
illustra AutoSeq G-50	50	27-5340-01
	250	27-5340-02
	1000	27-5340-03
illustra MicroSpin G-50 columns	50	27-5330-01
	250	27-5330-02
illustra MicroSpin S-200 HR columns	50	27-5120-01
<b>Labeling and Clean-up</b>		
illustra CyScribe GFX Purification Kit	25	27-9606-01
	50	27-9606-02
illustra NICK columns	20	17-0855-01
	50	17-0855-02
illustra ProbeQuant™ G-50 Micro columns	50	28-9034-08
<b>Desalting and Nucleotide Removal</b>		
illustra MicroSpin G-25 columns	50	27-5325-01
illustra NAP™-5	20	17-0853-01
	50	17-0853-02
illustra NAP-10	20	17-0854-01
	50	17-0854-02
illustra NAP-25	20	17-0852-01
	50	17-0852-02
illustra Sephadex™ G-25 DNA Grade SF	100 g	17-0572-02
illustra Sephadex G-50 DNA Grade F	25 g	17-0573-01
	100 g	17-0573-02
illustra Sephadex G-100 DNA Grade SF	100 g	17-0574-02
<b>Nucleotides</b>		
illustra dATP, 100 mM	25 µmol	28-4065-01
	100 µmol	28-4065-02
	500 µmol	28-4065-03
illustra dCTP, 100 mM	25 µmol	28-4065-11
	100 µmol	28-4065-12
	500 µmol	28-4065-13
illustra dGTP, 100 mM	25 µmol	28-4065-21
	100 µmol	28-4065-22
	500 µmol	28-4065-23
illustra dTTP, 100 mM	25 µmol	28-4065-31
	100 µmol	28-4065-32
	500 µmol	28-4065-33
illustra dUTP, 100 mM	25 µmol	28-4065-41
	100 µmol	28-4065-42
illustra dNTP Set (100 mM each A,C,G,T)	4 × 25 µmol	28-4065-51
	4 × 100 µmol	28-4065-52
	4 × 500 µmol	28-4065-53
illustra DNA Polymerization Mix dNTP Set (20 mM each A,C,G,T)	10 µmol	28-4065-57
	40 µmol (4 × 10 µl)	28-4065-58
illustra PCR Nucleotide Mix dNTP Set (25 mM each A,C,G,T)	500 µl	28-4065-60
illustra PCR Nucleotide Mix dNTP Set (2 mM each A,C,G,T)	1 ml	28-4065-62
illustra PCR Nucleotide Mix dNTP Set (10 mM each A,C,G,T)	500 µl	28-4065-64
<b>DNA, RNA and protein preparation</b>		
illustra triplePrep Kit	50	28-9425-44

\* Not available in North America or Japan

For local office contact information, visit  
[www.gelifesciences.com/contact](http://www.gelifesciences.com/contact)

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