Selection guide

Nucleic acid purification

Choose from our wide range of solutions designed for rapid nucleic acid purification and amplification of DNA and RNA. From spin columns to amplification kits, we can support your purification workflows in multiple applications.

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Isolation

Link	Product name	Product code	Format	Major subsequent applications	Capacity/scale	Typical yield	Total time	Advantages	Notes
→	Sera-Mag™ Carboxyl Beads and SpeedBeads	24152105050250 24152105050350 24152105050450 44152105050250 44152105050350 44152105050450 45152105050250 45152105050350 65152105050250 65152105050350 65152105050450	Magnetic bead (hydrophylic) 15 mL Magnetic bead (hydrophylic) 100 mL Magnetic bead (hydrophylic) 1000 mL Magnetic bead (hydrophobic) 15 mL Magnetic bead (hydrophobic) 100 mL Magnetic bead (hydrophobic) 1000 mL Magnetic SpeedBead (hydrophylic) 15 mL Magnetic SpeedBead (hydrophylic) 100 mL Magnetic SpeedBead (hydrophobic) 15 mL Magnetic SpeedBead (hydrophobic) 100 mL Magnetic SpeedBead (hydrophobic) 1000 mL	DNA sample preparation and clean-up/size-selection, proteomics and immunoassays.	50 mg/mL			Wide application range. Convenient one-step or two-step coupling. Fast magnetic separation. High performance.	Unkitted for kit development. Beads = single shell vs SpeedBeads = double shell
→	Sera-Mag Oligo dT	38152103011150 38152103010150 38152103010350	Magnetic bead 1 mL Magnetic bead 5 mL Magnetic bead 100 mL	RT-PCR, cDNA library construction, cDNA microarrays, affinity purification, primer extension and subtractive hybridization.	> 300 pmoL (dA)30 per mg	10 mg/mL	5–15 mins	Very high, specific poly A+ binding capacity ensures maximum extraction of mRNA. Fast reaction kinetics increase throughput and precision, also enabling faster movement through viscous solutions. Uniform, nominal 1 µm diameter provides high surface area and excellent lot-to-lot reproducibility.	
→	SeraSil-Mag™	29357369 29357371 29357372 29357373 29357374 29357375	Magnetic bead 400 nm × 5 mL Magnetic bead 400 nm × 60 mL Magnetic bead 400 nm × 450 mL Magnetic bead 700 nm × 5 mL Magnetic bead 700 nm × 60 mL Magnetic bead 700 nm × 450 mL	DNA isolation from all sources for subsequent molecular or NGS applications.	8 µg of genomic DNA from a 200 µL alloquot	20 mg/mL in water (0.05% sodium azide)	120 minutes	Beads are monodispersed with narrow size distribution for consistent, reproducible results. Silanol hydroxyl groups on the bead surface give efficient, high purity isolation of nucleic acids. Tested for microbial contamination.	Unkitted for kit development
→	Sera-Xtracta™ Cell-Free DNA Kit	29437807	Magnetic bead 96 reactions	NGS, qPCR, ddPCR, other amplication and genotyping applications.	50–300 bp fragments	Up to 4 mL input volume of plasma or serum	< 120 mins	Scalability from 5–4 mL input plasma. Minimal copurification of high molecular weight gDNA.	
→	Sera-Xtracta Virus/ Pathogen Kit	29506009 29514201	Magnetic bead 96 reactions Magnetic bead 1000 reactions	PCR, Real Time PCR and qPCR .	1 copy per micorliter minimum detection	Reproducible detection of low viral titer from 10 pfu/mL	30 minutes or less	High throughput; sensitive; scalable up to 400 µL	
→	Sera-Xtracta Genomic DNA Kit	29429140	Magnetic bead 96 reactions	NGS, restriction enzyme digestion, PCR and other genotyping applications.	4–8 µg from 200 µL whole blood	Up to 200 µL	< 45 mins	Removes the need for RNAse treatment in most applications $A_{260}/A_{280} > 1.7$	Greater than 100 kb

Isolation (continued)

Link	Product name	Product code	Format	Major subsequent applications	Capacity/scale	Typical yield	Total time	Advantages	Notes
→	Nucleon BACC 1 Genomic DNA Extraction Kit	RPN8501	26 preparations	PCR, sequencing, restriction, BAC Constructs, Southerns.	50 µL–10 mL whole blood 1×10^6 to 1×10^7 cultured cells	370–440 µg DNA/10 mL whole blood. 8–12 µg DNA/10^6 cultured cells.	30 mins	Purity, scalable, non-column format allows for high molecualr weight DNA, no phenol	Genreates high molecular weight DNA, Novel protein binding resin, protocol modifications for buccal swabs, mouthwashes, soft tissue, sperm, gram negative bacteria
	Nucleon BACC 3 Genomic DNA Extraction Kit	RPN8512	60 preparations						
→	Nucleon HT Genomic DNA Kit	RPN8509	50 preparations of up to 25 mg of hard tissue or 50 paraffin sections	PCR, sequencing, restriction, can be used with hard to process tissues e.g. FFPE, Southerns.	25 mg tissue sample 30 µm paraffin section	70–200 µg DNA/cm mouse tall. Yields from sections not quantified.	3 h to overnight Proteinase K digest followed by 30 mins extraction	Purity, non-column format gives high yields	Novel protein binding resin
→	Nucleon PhytoPure	RPN8510 RPN8511	50 × 0.1 g preps 50 × 1 g preps	PCR, RAPDs, restriction, for plant tissues with high phenolics, Southerns, AFLP.	Up to 0.1 g (small-scale) Up to 1.0 g (large-scale)	Variable depending on species, age and part of plant used, approx. 10–60 µg per 0.1 g prep.	1–1.5 hours	Purity, scalable, dedicated plant kit	Novel polysaccharide binding resin
→	RNASpin Mini Kit	25050070 25050071 25050072	20 preps 50 preps 250 preps	Quantitative reverse transcriptase PCR (qRT-PCR), Northern blot and microarray experiments.	Binding capacity of 100 µg	Up to 100 µg	< 30 min/6 preps	High-quality output RNA from diverse sample types. Recovers high-quality total RNA since genomic DNA is removed via on-column DNase I treatment. Results can be obtained with even small amounts of sample. Lysis buffer is less susceptible to foaming to ensure valuable RNA sample is not wasted. Simple and convenient format suitable for all levels of expertise.	
→	Blood genomicPrep Mini Spin Kit	28904263 28904264 28904265	10 preparations 50 preparations 250 preparations	Real-time PCR, endpoint PCR, multiplex PCR, and restriction enzyme digests Suitable for use in molecular biology applications including standard, multiplex and quantitative PCR; cloning; haplotyping; restriction enzyme digestion; and genotyping	Binding capacity 60 µg	4–6 µg/200 µL whole blood	Total preparation time < 20 minutes	Greater proportion of higher molecular weight DNA and less shearing. Demonstrated application to various types of whole blood including human, horse, rabbit, rat, and mouse. Reduced pipetting volume changes, one centrifugation setting	
→	Bacteria genomicPrep Mini Spin Kit	28904258 28904259	50 preparations 250 preparations	Molecular biology applications including cloning, restriction enzyme digestion, PCR and genotyping	Gram-negative: 4–12 µg gDNA Gram-positive: 5–10 µg gDNA	4–8 µg of genomic DNA from 2×10^9 bacteria cells	Total preparation time: 40 minutes (Gram-negaitive Bacteria), 55 minutes (Gram-positive Bacteria)	Rapid extraction and purification of high molecular weight genomic DNA (gDNA) from Gram-negative (G-) and Gram-positive (G+) bacteria. Reduced lysis time. Capable of handling input amounts ranging from 1×10^9 to 4×10^9 bacteria cells.	
→	Tissue and cells genomicPrep Mini Spin Kit	28904275 28904276	50 purifications 250 purifications	Restriction enzyme analysis, ligation, cloning, DNA sequencing and PCR	Binding capacity >35 µg	Up to 1.5 µg/mg of tissue from an input tissue sample range of 5 to 50 mg, and up to 40 µg of genomic DNA per 5×10^6 cells depending on cell type	90 minutes (Animal Tissue), 45 minutes (Cultured cells)	Rapid procedure produces high molecular weight gDNA with minimal shearing. Total DNA extraction time reduced significantly to 90 min Produces high-quality high molecular weight DNA and less degradation	
→	TriplePrep Kit	28942544	50 kit	Restriction enzyme digestion, PCR, sequencing, array CGH, RT-PCR, cDNA synthesis, expression array, SDS-PAGE, Western Blotting, 2-D DIGE, LCMS.	Binding capacity of 20–60 µg	80–160 µg	< 45 minutes	Fast: less than one hour. High yield: enough DNA and RNA, together with protein to allow gene, transcriptome and protein to be studied from one sample simultaneously. Easy to use: color-coded tubes.	

Amplification

Link	Product name	Product code	Format	Major subsequent applications	Capacity/scale	Typical yield	Total time	Advantages	Notes
→	GenomiPhi™ Single Cell DNA Amplification Kit	29108107 29108039	25 reactions (performed in tubes or microplates) 100 reactions (performed in tubes or microplates)	Whole-genome amplification from 1–1000 cells, used to amplify DNA samples for genotyping (single nucleotide polymorphism [SNP], short tandem repeats [STR], comparative genomic hybridization [CGH]), sequencing, or PCR assays, where starting materials are limited.	1 fg of input DNA	4–7 µg	< 3 hours	UV and enzymatic cleanup steps during manufacture keep kit free of detectable DNA. Propritary sample clean up step in protocol reduces unwanted background amplifictation.	Product Size > 10 kb. *See* Brochure: KA10877280120DF.
→	GenomiPhi V2 DNA Amplification Kit	25660030 25660031 25660032	25 reactions 100 reactions 500 reactions	Whole-genome amplification from nanogram amounts of DNA, used to amplify DNA samples for genotyping (single nucleotide polymorphism [SNP], short tandem repeats [STR], comparative genomic hybridization [CGH]), hybridization studies, cloning, sequencing, DNA archiving, transfection or PCR assays.	10 ng input DNA or cell lysate	4–7 µg	< 2 hours	Isothermal amplification (no thermocycler required). Phi29 DNA polymerase carries proofreading activity. Independent amplification products from random priming events. Uniform coverage of the genome.	Simple, robust, reliable setup for whole genome amplification (for all genomiphi kits) compared to other PCR based methods. Verified for use with FTA cards, blood or buccal swabs. Store at -70°C. Average product size > 10 Kb.
→	GenomiPhi V3 (RTG) DNA Amplification Kit	25660124 25600196 25660197	24 rxns (3 × 8-well strip) 96 rxns (1 × 96-well plate) 480 rxns (5 × 96-well plate)	Whole-genome amplification from nanogram amounts of DNA, used to amplify DNA samples for genotyping (single nucleotide polymorphism [SNP], short tandem repeats [STR], comparative genomic hybridization [CGH]), hybridization studies, cloning, sequencing, DNA archiving, transfection, or PCR assays.	10 ng input DNA or cell lysate	12–20 µg	< 2 hours	Preformatted, predispensed single dose lyophilized cake. Room temperature stable. Isothermal amplification (no thermocycler required). Uniform coverage of the genome. Phi29 DNA polymerase has proofreading activity. Independant amplification products from random priming events.	Verified for use with FTA cards, blood or buccal swabs. Average product size > 10 Kb. *See* App Note: 29-0245-46 AA 7.
→	TempliPhi™ Sequence Resolver Kit	28903529 28903530 28903531	20 reactions 50 reactions 200 reactions	Amplification of single or double stranded circular DNA from difficult to sequence viral isolates, glycerol stock, or bacterial culture, for the amplification of difficult to sequence templates (repeats, sequencing stops, and compressions) for successful DNA sequencing.	1–2 ng of input DNA	1 µg	18 hours	Simple isothermal workflow. Thermocycler not required. Consistent yield per reaction. Target-specific primer sequence/primers not needed as random priming is utilized.	800 bases. Phred20. Useful for both small (plasmid) and large (BAC) circular constructs.
→	TempliPhi 100/500 Amplification Kit	25640010 25640050	100 reactions (performed in tubes or microplates) 500 reactions (performed in tubes or microplates)	Amplification of single or double stranded circular DNA from viral isolates, glycerol stock, or bacterial culture prior to restriction anlaysis, labeling, sequencing, or transfection.	Small portion of a colony 0.2–0.5 µL liquid culture or glycerol stock or viral isolate 1–10 pg of purified plasmid	1–1.5 µg	< 20 mins hands on 4–6 hours amplification time	Simple isothermal workflow. Thermocycler not required. Consistent yield per reaction. Target-specific primer sequence/primers not needed as random priming is utilized.	Can be used to prepare templates for cell free protein expression, mRNA synthesis, circular viral genome enrichment, synthetic biology. Phi29 has proof reading activity. *See* Brochure: 28-9622-94 AD 10/2014.

Amplification (continued)

Link	Product name	Product code	Format	Major subsequent applications	Capacity/scale	Typical yield	Total time	Advantages	Notes
→	TempliPhi 2000 Amplification Kit	28964286	2000 reactions (performed in tubes or microplates)	Amplification of single or double stranded circular DNA from viral isolates, glycerol stock, or bacterial culture prior to restriction anlaysis, labeling, sequencing, or transfection.	Small portion of a colony 0.2–0.5 µL liquid culture or glycerol stock or viral isolate 1–10 pg of purified plasmid	1–1.5 µg	< 20 mins hands on 4–6 hours amplification time	Simple isothermal workflow. Thermocycler not required. Consistent yield per reaction. Target-specific primer sequence/primers not needed as random priming is utilized.	Phi 29 has proof reading activity. *See* Brochure: 28-9622-94 AD 10/2014.
→	Templiphi Large Construct Kit	25640080	1000 reactions	Prepare DNA for sequencing from very large single- or double-stranded circular constructs, for the amplification of very large sequence templates (BAC or Fosmid) for successful DNA sequencing.	1–10 ng BAC or Fosmid input DNA, glycerol stocks, bacterial culture	5 µg	18 hours	Simple isothermal workflow Thermocycer is not needed. Consistent yield per reaction. Target-specific primer sequence/primers not needed as random priming is utilized.	Phi 29 has proof reading activity.
→	PureTaq Ready-To-Go PCR Beads	27955701 27955702 27955801 27955901	Multiwell plate, 96 Reactions Multiwell plate, 5 × 96 Reactions 0.5 mL tubes, 100 Reactions 0.2 mL hinged tube with cap, 96 Reactions	Reliable and robust end point PCR, PCR amplification, compatible with TaqMan probes and MGB Eclipse Probes, intercalating dye for real time PCR systems, minimizes assay variability for large sample sets.	Pre-dispensed 25 µL reactions	NA	NA	Room temperature stable, sustainable, low non-specific background amplification, pre-dispensed reactions reduce training time.	*See* App Note: 07/2008 63-0054-46 AB.
→	RAPD (RTG) Analysis Kit/Beads	27950001 27950201	100 reactions 100 reactions and 6 primers	Rapidly detect genomic polymorphisms, DNA profiling experiments using randomly amplified polymorphic DNA (RAPD) techniques, used for gene mapping, determining strain diversity, population analysis, taxonimic relationships, microbial QC testing.	ng amounts of DNA	NA	NA	Performatted, predispensed, single dose. Room temperature stable. Controls provided for development studies (kit).	Customer specific primer set is required to use RAPD beads. *See* App Note: 80-6334-41 Rev A / 5–96.
→	RTG RT-PCR Beads	27925901 27926601 27927601	0.2 mL hinged tube with cap 0.5 mL tubes 0.2 mL tubes	Reliable and robust end point Reverse Trascriptase-PCR, used for detection of RNA in a species, determining relative RNA levels, gene-specfic amplfication of known mRNAs.	Pre-dispensed 50 µL reactions	NA	NA	Long term stabiltiy at room temperature reduces shipping and freezer requirements, reagents are optimized for full-length cDNA synthesis to > 7.5 kb, rabbit globin mRNA and primer controls included.	M-MuLV reverse trascriptase and RNAguard. *See* Datafile: 11-0026-06 AC 04/2013.
→	Direct RT-qPCR Kit	29656615	AIC Mix, 100 preparations RT-qPCR Kit Mastermix and reconstitution buffer, 100 preparations	Real-time and endpoint RT-PCR	Reaction volume 20 µL	10 copies per reaction		Capable of detecting low viral loads even when the sample-transport media volume reaches 45% of the final reaction volume. Increased RNA stability in the sample. Detection of SARS-CoV-2 viral particles down to approximately 10 copies per reaction	

Clean-up

Link	Product name	Product code	Format	Major subsequent applications	Capacity/scale	Typical yield	Total time	Advantages	Notes
→	Sera-Mag Select	29343045	5 mL liquid reagent containing Sera-Mag Carboxyl beads	Removal of unincorporated primers, linkers, probes in library construction. Fragment size selection for next-genreation sequencing (NGS).		> 80% recovery of 250 bp DNA fragments	Protocol dependant (e.g. SPRI, PCR)	Single reagent for PCR clean-up and size selection. Manufacturer of beads contained in reagent = security of supply. Direct replacement from AMPure. Options for customization.	Selection of fragment size is determined by adjusting ratio of reagent to fixed volume of sample.
		29343052	60 mL liquid reagent containing Sera-Mag Carboxyl beads						
		29343057	450 mL liquid reagent containing Sera-Mag Carboxyl beads						
		29453302	20 × 5 mL liquid reagent containing Sera-Mag Carboxyl beads						
→	Sera-Mag Carboxyl Beads and SpeedBeads	24152105050250	Magnetic bead (hydrophylic) 15 mL	Library prep, next-generation sequencing, SP3 Protocols	50 mg/mL		< 45 minutes	Wide application range. Convenient one-step or two-step coupling. Fast magnetic separation. High performance.	Unkitted for kit development. Beads = single shell vs SpeedBeads = double shell.
		24152105050350	Magnetic bead (hydrophylic) 100 mL						
		24152105050450	Magnetic bead (hydrophylic) 1000 mL						
		44152105050250	Magnetic bead (hydrophobic) 15 mL						
		44152105050350	Magnetic bead (hydrophobic) 100 mL						
		44152105050450	Magnetic bead (hydrophobic) 1000 mL						
		45152105050250	Magnetic SpeedBead (hydrophylic) 15 mL						
		45152105050350	Magnetic SpeedBead (hydrophylic) 100 mL						
		65152105050250	Magnetic SpeedBead (hydrophobic) 15 mL						
		65152105050350	Magnetic SpeedBead (hydrophobic) 100 mL						
		65152105050450	Magnetic SpeedBead (hydrophobic) 1000 mL						
→	ExoProStar™ 1-Step	US77702	100 reactions, mixed enzymes Exo I and Alkaline Phosphatase	Sequencing, cloning, genotyping		100% recovery	30 minutes	Enzymatic PCR clean up of unicorporated primers and dNTPs. Scalable. No product loss, one pipetting step.	Temperature inactivation of the enzymes once reaction completes.
		US77705	500 reactions, mixed enzymes Exo I and Alkaline Phosphatase						
		US77720	2000 reactions, mixed enzymes Exo I and Alkaline Phosphatase						
		US77750	5000 reactions, mixed enzymes Exo I and Alkaline Phosphatase						
→	GFX™ PCR DNA and Gel Band Purification Kit	28903466	10 reactions	Prior to next-generation sequencing, cloning, PCR	100 µL liquid reaction. Up to 900 mg agarose slice	90% from solution. 60%–80% from agarose	5 minutes from solution, 15 minutes from agarose	Purification and concentration of PCR products/DNA (100 bp–10 kbp) from solution or from gel bands. Speed, purity, both gel band and PCR clean up in same kit.	No glass slurry, elution in low-salt buffer, for agarose gel slices buffered in Tris-borate-EDTA (TBE) or Tris-acetate-EDTA (TAE).
		28903470	100 reactions						
		28903471	250 reactions						
→	AutoSeq G-50 Columns	27534001	50 columns, spin-column, microfuge, tabletop centrifuge	Molecular biology assays	10–100 µL	80% recovery	4 minutes	Rapid DNA purification by removal unincorporated fluorescent dye-terminators from cycle sequencing reactions prior to analysis on sequencing platforms. Excellent recovery.	Prepacked and pre-equilibrated with Sephadex G-50 resin.
		27534002	250 columns, spin-column, microfuge, tabletopcentrifuge						
		27534003	1000 columns, spin-column, microfuge, tabletop centrifuge						

Clean-up (continued)

Link	Product name	Product code	Format	Major subsequent applications	Capacity/scale	Typical yield	Total time	Advantages	Notes
→	MicroSpin™ G-25 Columns	27532501	Spin-column, microfuge, tabletop centrifuge	Molecular biology assays	10–100 µL	90% recovery	4 minutes	Rapid purification of DNA > 10 bp for buffer exchange, desalting and removal of unincorporated nucleotides following synthesis and labeling reactions. Excellent recovery.	Prepacked and pre-equilibrated with Sephadex G-25 resin.
→	MicroSpin G-50 Columns	27533001 27533002	50 columns, spin-column, microfuge, tabletop centrifuge 250 columns, spin-column, microfuge, tabletopcentrifuge	Molecular biology assays	10–100 µL	80% recovery	4 minutes	Rapid purification of DNA > 20 bp for buffer exchange, desalting and removal of unincorporated nucleotides following synthesis and labeling reactions. Excellent recovery.	Prepacked and pre-equilibrated with Sephadex G-50 resin.
→	MicroSpin S-200 HR Columns	27512001	Spin-column, microfuge, tabletop centrifuge	Molecular biology assays	25–100 µL	70%–80% recovery	4 minutes	Rapid purification of labeled single-stranded or double-stranded DNA ≥ 50 bases. Excellent recovery.	Prepacked and pre-equilibrated with Sephacryl S-200 HR resin.
→	MicroSpin S-300 HR Columns	27513001	Spin-column, microfuge, tabletop centrifuge	Molecular biology assays	25–125 µL	70%–80% recovery	4 minutes	Rapid purification of DNA > 20 mers (primers) and nucleotides; for example plasmid purification prior to sequencing templates. Excellent recovery.	Prepacked and pre-equilibrated with Sephacryl S-300 HR resin.
→	MicroSpin S-400 HR Columns	27514001	Spin-column, microfuge, tabletop centrifuge	Molecular biology assays	25–50 µL prior to subsequent PCR or cloning; 51–100 µL prior to sequencing	50%–70% recovery	4 min/2 columns	For rapid purification of PCR products (> 200 bp) from unincorporated primers (< 32-mers) and nucleotides including desalting, buffer exchange, and primer removal using spin-column chromatography. Speed and excellent recovery.	Prepacked and pre-equilibrated with Sephacryl S-300 HR resin.
→	NICK Columns	17085501 17085502	20 columns, gravity flow chromatography 50 columns, gravity flow chromatography	Molecular biology assays	Concentration ≤ 1 mg/mL; ≤ 100 µL	90% recovery	< 15 min	Rapid nick-translated > 20 DNA fragments and for separation of any labeled probe from unincorporated labeled nucleotides. Excellent recovery.	No centrifuge required.
→	ProbeQuant™ G-50 Micro Columns	28903408	Spin-column, microfuge, tabletop centrifuge	Molecular biology assays	25–50 µL	80% recovery	4 minutes	Rapid purification of labeled DNA > 20 bases from unincorporated labeled nucleotides. Excellent recovery	Prepacked and pre-equilibrated with Sephadex G-50 resin.
→	Sephadex™ G-25 DNA Grade SF	17057202	Spin-column or gravity flow chromatography	Molecular biology assays	Varies with end user	90% recovery	Varies with end user	Size exclusion chromatography resin designed for desalting and buffer exchange, and for purification of DNA and oligonucleotides > 20 base pairs for use in spin columns and gravity flow chromatography. End user can pack their own column.	
→	Sephadex G-50 DNA Grade F	17057301 17057302	25 g, spin-column or gravity flow chromatography 100 g, spin-column or gravity flow chromatography	Molecular biology assays	Varies with end user	90% recovery	Varies with end user	Size exclusion chromatography resin designed for desalting and buffer exchange, and for purification of DNA and oligonucleotides > 20 bp. End user can pack their own column.	Can be spin columns or gravity flow chromatography.

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CY12531-06Jun21-SG

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