



AdvancedSeq LLC,
Your Reliable Sanger Sequencing
Reagents Partner



Make Your Sanger Sequencing Cost Effective

High-Quality Products for Sanger Sequencing



WORLDWIDE ADOPTION



HIGH-QUALITY ASSURANCE



CUSTOMER-APPROVED PERFORMANCE





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Products at a Glance

Workflow Steps	Product Name	Unit Size	Catalog #
Cycle Sequencing Reactions	SupreDye™ v3.1 Cycle Sequencing Kit	24	063001
	SupreDye™ v3.1 Cycle Sequencing Kit	100	063002
	SupreDye™ v3.1 Cycle Sequencing Kit	1,000	063008
	SupreDye™ v3.1 Cycle Sequencing Kit	2,500	063020
	SupreDye™ v3.1 Cycle Sequencing Kit	5,000	063040
	SupreDye™ v3.1 Cycle Sequencing Kit	25,000	063200
	SupreDye™ v1.1 Cycle Sequencing Kit	24	060001
	SupreDye™ v1.1 Cycle Sequencing Kit	100	060002
	SupreDye™ v1.1 Cycle Sequencing Kit	1,000	060008
	SupreDye™ v1.1 Cycle Sequencing Kit	2,500	060020
	SupreDye™ v1.1 Cycle Sequencing Kit	5,000	060040
	SupreDye™ v1.1 Cycle Sequencing Kit	25,000	060200
	SupreDye™ dGTP v3.1 Cycle Sequencing Kit	24	065001
	SupreDye™ dGTP v3.1 Cycle Sequencing Kit	100	065002
	SupreDye™ dGTP v3.1 Cycle Sequencing Kit	1,000	065008
	SupreDye™ dGTP v3.1 Cycle Sequencing Kit	2,500	065020
	SupreDye™ dGTP v3.1 Cycle Sequencing Kit	5,000	065040
	SupreDye™ dGTP v1.1 Cycle Sequencing Kit	24	061001
	SupreDye™ dGTP v1.1 Cycle Sequencing Kit	100	061002
	SupreDye™ dGTP v1.1 Cycle Sequencing Kit	1,000	061008
	SupreDye™ dGTP v1.1 Cycle Sequencing Kit	2,500	061020
	SupreDye™ dGTP v1.1 Cycle Sequencing Kit	5,000	061040
SupreDye™ Enhancer	1 mL	021001	
Sequencing Cleanup	ADS™ Sequencing Reaction Cleaning Beads	8 mL	080008
	ADS™ Sequencing Reaction Cleaning Beads	50 mL	080050
	ADS™ Sequencing Reaction Cleaning Beads	250 mL	080250
	ADS™ Sequencing Reaction Cleaning Beads	1000 mL	081000
	SupreDye™ XT Purification Kit	100 preps (2 mL)	160001
	SupreDye™ XT Purification Kit	1000 preps (20 mL)	160010
	SupreDye™ XT Purification Kit	2500 preps (50 mL)	160025
	SupreDye™ XT Purification Kit	40,000 preps (800 mL)	160400
Sample Loading and Capillary Electrophoresis	PwrPOP™-4 for 310/3100 series	5 mL	034005
	PwrPOP™-4 for 310/3100 series	10 mL	034010
	PwrPOP™-4 for 3130 series	3.5 mL	034003
	PwrPOP™-4 for 3130 series	7 mL	034007
	PwrPOP™-4 for 3130 series	28 mL	034028
	PwrPOP™-6 for 310/3100 series	5 mL	036005
	PwrPOP™-6 for 310/3100 series	10 mL	036010
	PwrPOP™-6 for 3130 series	3.5 mL	036003
	PwrPOP™-6 for 3130 series	7 mL	036007
	PwrPOP™-6 for 3130 series	28 mL	036028





Products at a Glance

Workflow Steps	Product Name	Unit Size	Catalog #
Sample Loading and Capillary Electrophoresis	PwrPOP™-7 for 3130 series	3.5 mL	037003
	PwrPOP™-7 for 3130 series	7 mL	037007
	PwrPOP™-7 for 3730 series	28 mL	037028
	PwrPOP™-7 for 3730 series	5 x 28 mL	037140
	PwrPOP™-7 for 3730 series	10 x 28 mL	037280
	PwrPOP™-7 for 3730 series	30 x 28 mL	037840
	ADS™ Conformational Analysis Polymer (CAP)	25 mL	032025
	TruPure™ Formamide	25 mL	090025
	ADS™ 10x Running Buffer (with EDTA)	25 mL	010025
	ADS™ 10x Running Buffer (with EDTA)	100 mL	010100
	ADS™ 10x Running Buffer (with EDTA)	500 mL	010500
	ADS™ 10x Running Buffer (with EDTA)	2500 mL	012500
Regeneration of Capillary Array	ADS™ Capillary Regeneration Kit for 3130	4 x 7 mL	150007
	ADS™ Capillary Regeneration Kit for 3130 and 3730	4 x 28 mL	150028
Template Preparation	ADS™ PCR Cleaning Beads	1 mL	170001
	ADS™ PCR Cleaning Beads	5 mL	170005
	ADS™ PCR and Cleaning Kits	30 rxns	102040
	ADS™ PCR and Cleaning Kits	150 rxns	102200
	ADS™ Taq Polymerase	400 units (80 uL)	101004
	ADS™ Taq Polymerase	2000 units (400 uL)	101020
	ADS™ phi29 DNA Polymerase	250 units (25 uL)	210025
	ADS™ phi29 DNA Polymerase	1000 units (100 uL)	210100
	ADS™ phi29 DNA Polymerase	5000 units (500 uL)	210500
	ADS™ phi29 RCA DNA Amplification Kit	100 rxns	220100
	ADS™ phi29 RCA DNA Amplification Kit	500 rxns	220500
Fragment Analysis	ADS™ 500-Red Fragment Size Standard (eq. 500ROX)	400 uL	260400
	ADS™ 500-Orange Fragment Size Standard (eq. 500LIZ)	400 uL	250400

SANGER SEQUENCING WORKFLOW



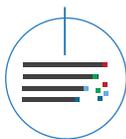
Dideoxy chain-termination Sanger sequencing has been used in the past 40 years as a gold standard for gene mutation analysis, de novo sequencing, resequencing, confirmation of next-generation sequencing (NGS), and gap filling for NGS. As a mature technology, Sanger sequencing will continue to play an important role in the DNA sequencing field.

The experimental workflow for Sanger Sequencing Includes:



STEP 1. Template Preparation

Preparation of high-quality sequencing templates and primers for setting up sequencing reactions. PCR templates need to be purified or cleaned up to remove dNTPS, primers and DNA polymerase.



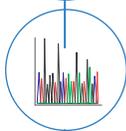
STEP 2. Cycle Sequencing Reaction Set-up

Use of one primer and one template to linearly amplify and generate nested fluorescently labeled extension products with a single nucleotide difference.



STEP 3. Sequencing Cleanup

Cleanup of completed sequencing reactions to remove unincorporated dyes and other reaction components from the end-labeled extension products.



STEP 4. Sample Loading and Capillary Electrophoresis (CE)

Loading extension products with or without resuspension on CE instruments for detecting fluorescent signals, which are converted into DNA sequence using a base calling software.



STEP 5. Regeneration of Capillary Array

As a supplementary workflow step for instrument maintenance, regeneration of the capillary array to remove contaminants accumulated on the array after hundreds of CE runs. Regenerated array regains optimal performance.

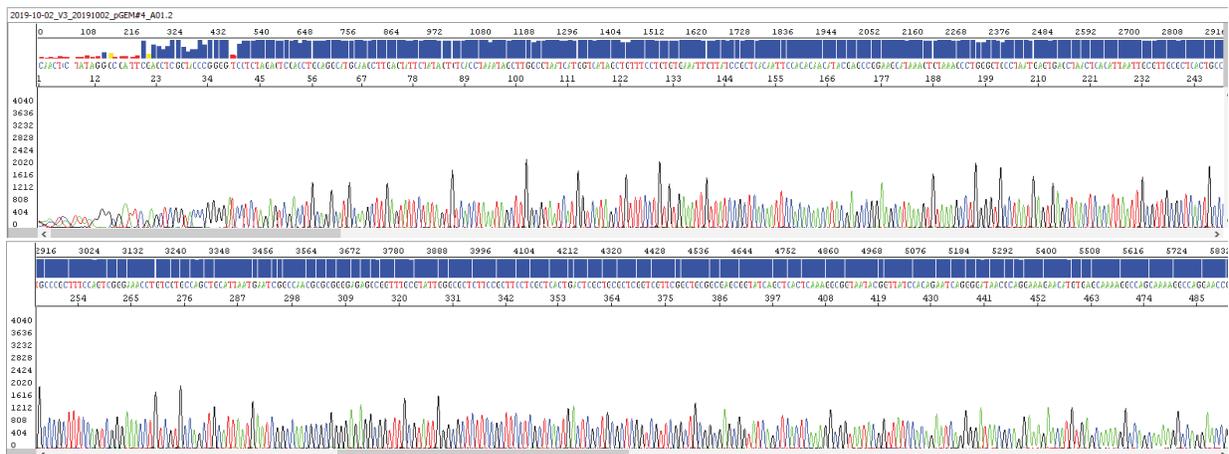
PRODUCT OFFERINGS



AdvancedSeq LLC specializes in making high-quality DNA sequencing (especially Sanger sequencing) and PCR reagents for life science research at competitive prices. Founded by scientists and product managers with extensive knowledge and experience in the life science industry, the company produces products that are trusted and used by many companies and academic labs worldwide. We have distributors and sales force in the US, Europe, and China, and are fully committed to providing high-quality, cost-effective products to our customers with superior technical support.

For Sanger sequencing, we provide products used in all steps of the workflow. The featured products listed below have proven performance and are offered as alternatives for equivalent products used to carry out a daily workflow of a sequencing facility.

FEATURED PRODUCTS



Reliable high-quality system performance: all the sequencing reagents used were from Advancedseq (SupreDye™ Cycle Sequencing Kit, ADS™ Sequencing Reaction Cleaning Beads, and PwrPOP™ -7 Polymer). A sequencing sample was run on a 3130xl Genetic Analyzer and data were analyzed using the Sequencing Analysis v5.4 software.



TEMPLATE PREPARATION



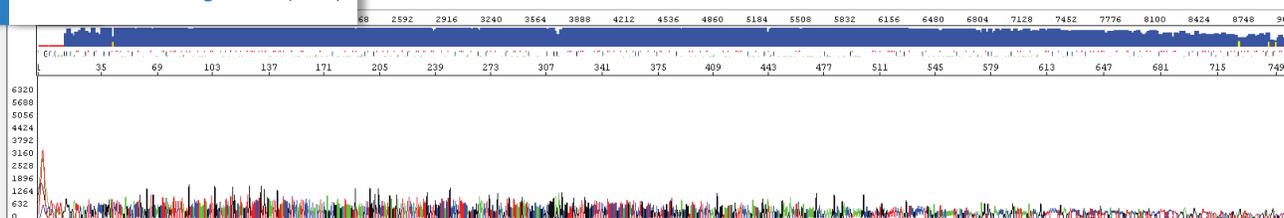
Preparing high-quality sequencing templates is one of the key parameters for sequencing success. Among the various sequencing template types, PCR templates, along with plasmid templates, are the most popular and need careful preparation for optimal sequencing quality.

For PCR templates, conditions should be optimized with high-grade reagents to get a single PCR product so the purification step to remove other non-specific PCR products can be eliminated. Purification of the PCR product from other PCR components, such as primers, dNTPS, and DNA polymerase, is needed. The residual contaminants may cause suboptimal sequencing reactions by changing the reaction conditions or by interfering with the reaction.

Although there are other PCR product cleaning methods, spin column purification and magnetic bead purification are the most common PCR cleanup methods. Of these, spin column purification is more expensive and more time-consuming if high-throughput purification is needed.

Finally, all types of sequencing-ready purified templates must be quantified and the right amount of DNA template should be used for sequencing reactions according to the sequencing guide.

ADSTM PCR Cleaning Beads (1.5X)



Electropherogram data from Sanger sequencing of a 1.2 kb PCR fragment using ADSTM PCR Cleaning Beads at 1.5 volume of the PCR reaction volume.

ADS™ PCR Cleaning Beads

PRODUCT IMAGE

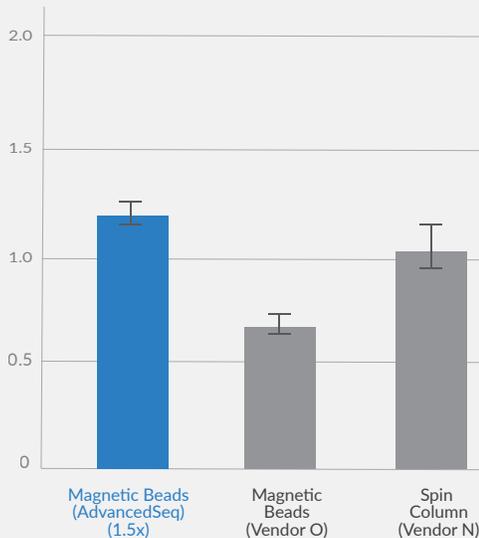


PRODUCT KEY HIGHLIGHT

- Adaptable with high-throughput template preparation
- Compatible with DNA sequencing workflow
- High DNA recovery
- Uniform bead suspension



SUPPORTING DATA



High DNA recovery using AdvancedSeq magnetic beads. Products used from different vendors for PCR product purification.

ORDERING INFORMATION

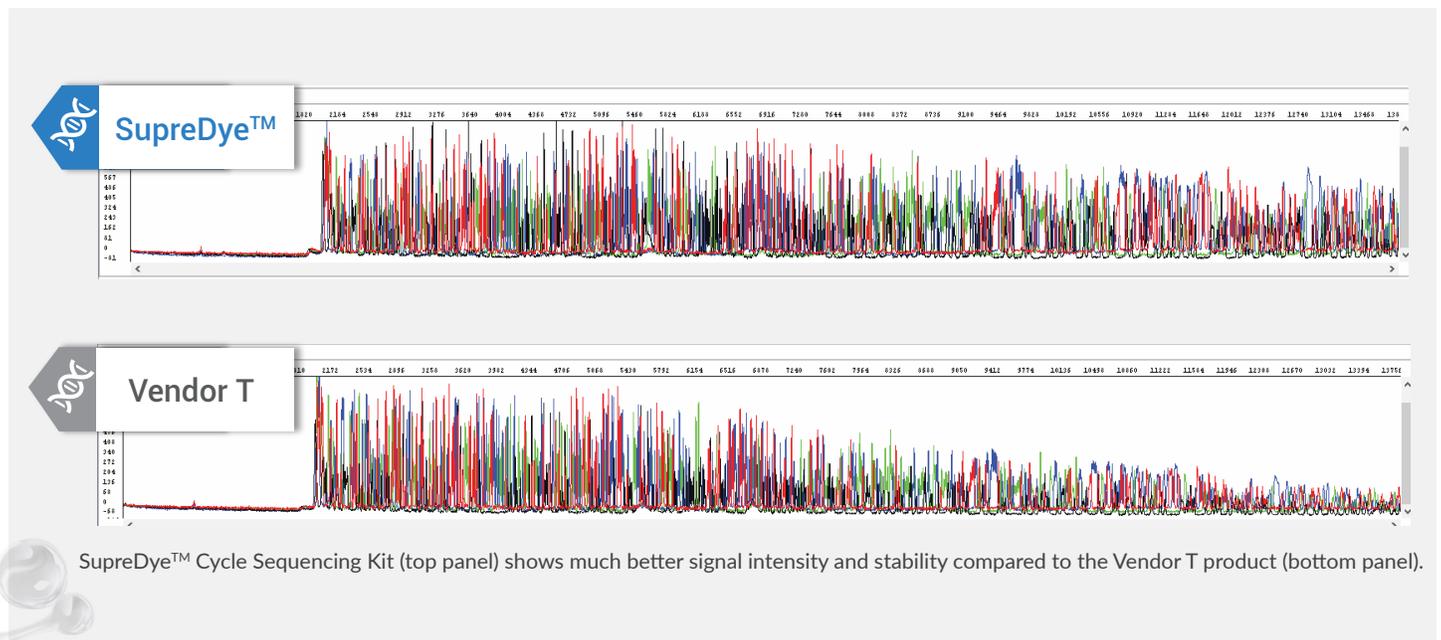
Product Name	Unit Size	Catalog #
ADS™ PCR Cleaning Beads	1 mL	170001
ADS™ PCR Cleaning Beads	5 mL	170005
ADS™ PCR and Cleaning Kits	30 rxns	102040
ADS™ PCR and Cleaning Kits	150 rxns	102200
ADS™ Taq Polymerase	400 units (80 uL)	101004
ADS™ Taq Polymerase	2000 units (400 uL)	101020
ADS™ phi29 DNA Polymerase	250 units (25 uL)	210025
ADS™ phi29 DNA Polymerase	1000 units (100 uL)	210100
ADS™ phi29 DNA Polymerase	5000 units (500 uL)	210500
ADS™ phi29 RCA DNA Amplification Kit	100 rxns	220100
ADS™ phi29 RCA DNA Amplification Kit	500 rxns	220500

CYCLE SEQUENCING REACTIONS



Cycle sequencing reactions use linear amplification to produce end-labeled extension products based on one primer and one template in a reaction. A nest of extension products with only one nucleotide difference is made due to chain-termination resulting from incorporation of fluorescent dideoxynucleotides (ddNTPs).

In regular cycle sequencing kits, dITP is used to replace dGTP to reduce peak compression in CE. However, for high G- templates (GT or GC), dITP in a regular kit is replaced with dGTP to optimize sequencing performance.



SupreDye™ Cycle Sequencing Kit (top panel) shows much better signal intensity and stability compared to the Vendor T product (bottom panel).

SupreDye™ Cycle Sequencing Kits

PRODUCT IMAGE

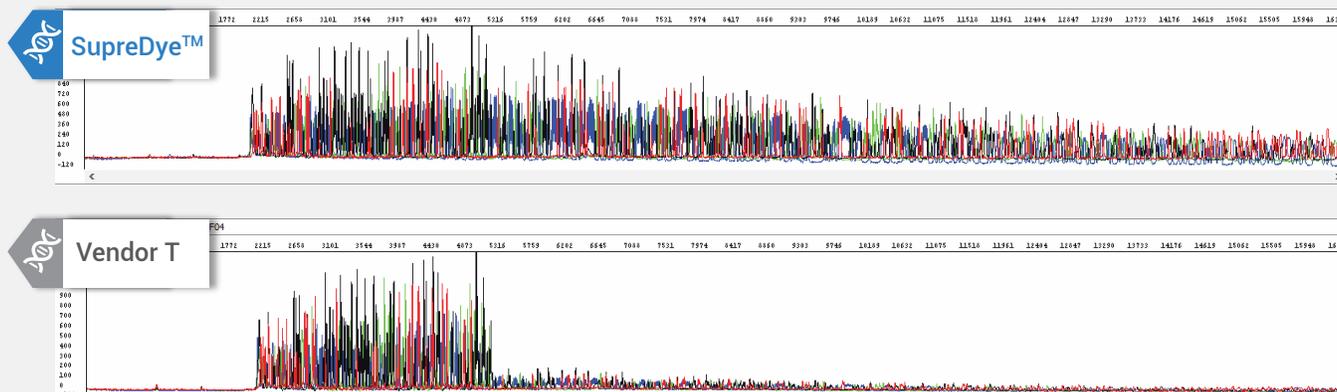


PRODUCT KEY HIGHLIGHT

- Proven high-performance
- Broadly accepted in community
- Increased robustness for difficult templates
- Even peak heights and long read lengths



SUPPORTING DATA



Compared to the Vendor T product (bottom panel), SupreDye™ chemistry (top panel) shows much better performance for sequencing a difficult template with secondary structures by generating strong and long-read signal.

ORDERING INFORMATION

Product Name	Unit Size	Catalog #
SupreDye™ v3.1 Cycle Sequencing Kit	24	063001
SupreDye™ v3.1 Cycle Sequencing Kit	100	063002
SupreDye™ v3.1 Cycle Sequencing Kit	1,000	063008
SupreDye™ v3.1 Cycle Sequencing Kit	2,500	063020
SupreDye™ v3.1 Cycle Sequencing Kit	5,000	063040
SupreDye™ v3.1 Cycle Sequencing Kit	25,000	063200
SupreDye™ v1.1 Cycle Sequencing Kit	24	060001
SupreDye™ v1.1 Cycle Sequencing Kit	100	060002
SupreDye™ v1.1 Cycle Sequencing Kit	1,000	060008
SupreDye™ v1.1 Cycle Sequencing Kit	2,500	060020
SupreDye™ v1.1 Cycle Sequencing Kit	5,000	060040
SupreDye™ v1.1 Cycle Sequencing Kit	25,000	060200

Product Name	Unit Size	Catalog #
SupreDye™ dGTP v3.1 Cycle Sequencing Kit	24	065001
SupreDye™ dGTP v3.1 Cycle Sequencing Kit	100	065002
SupreDye™ dGTP v3.1 Cycle Sequencing Kit	1,000	065008
SupreDye™ dGTP v3.1 Cycle Sequencing Kit	2,500	065020
SupreDye™ dGTP v3.1 Cycle Sequencing Kit	5,000	065040
SupreDye™ dGTP v1.1 Cycle Sequencing Kit	24	061001
SupreDye™ dGTP v1.1 Cycle Sequencing Kit	100	061002
SupreDye™ dGTP v1.1 Cycle Sequencing Kit	1,000	061008
SupreDye™ dGTP v1.1 Cycle Sequencing Kit	2,500	061020
SupreDye™ dGTP v1.1 Cycle Sequencing Kit	5,000	061040
SupreDye™ Enhancer	1 ml	021001

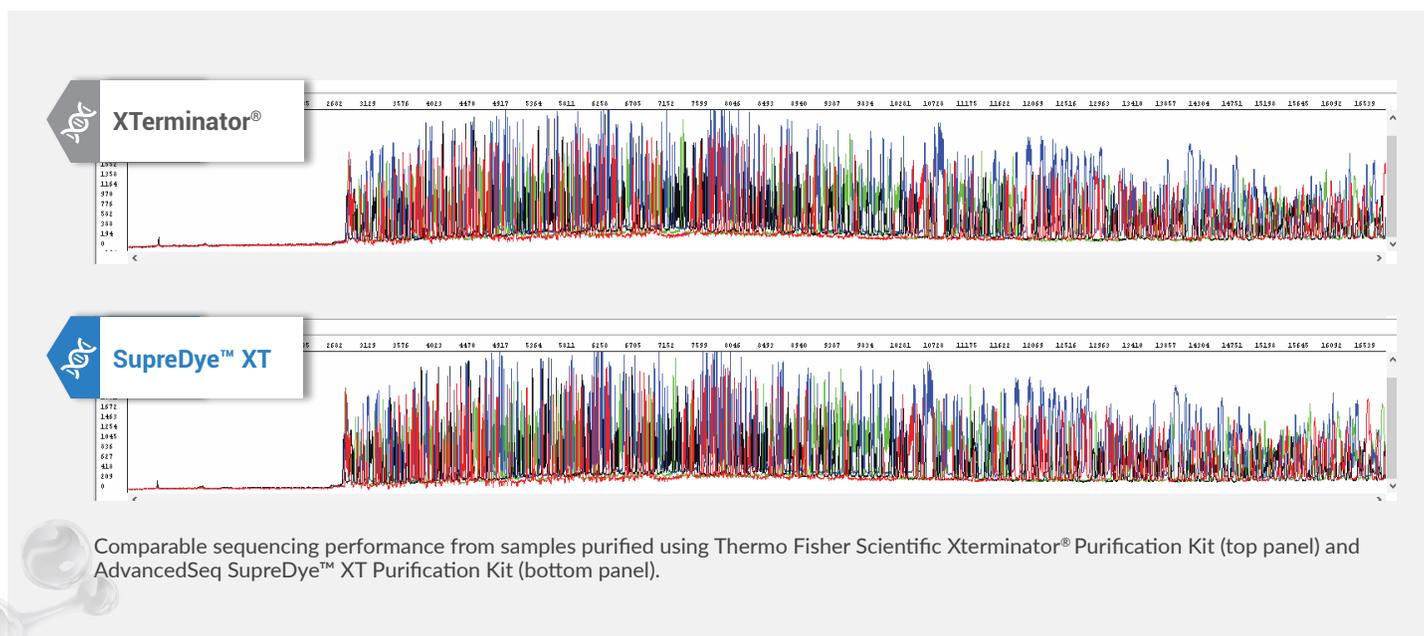
SEQUENCING CLEANUP



It is essential to remove the contaminants, especially the unincorporated ddNTP dyes, from the completed sequencing reaction. Failure to remove these contaminants results in signal reduction and interference of peak separation and reading.

Different mechanisms are available for cleaning up the sequencing reactions. In one mechanism, contaminants bind to special resins and get removed. In another mechanism, extension products bind to magnetic beads and are separated from contaminants. Contaminants can also be removed by ethanol precipitation of DNA, a time-consuming procedure. It is important to compare the performance of different purification kits in terms of downstream sequencing quality.

We provide SupreDye™ XT Purification Kit and ADS™ Sequencing Reaction Cleaning Beads, both of which are optimized to produce highly purified samples for exceptional downstream sequencing performance.



SupreDye™ XT Purification Kit

PRODUCT IMAGE AND KEY HIGHLIGHTS



- Fast, reliable, reproducible
- Complete dye blob removal
- Simple workflow, minimal hands-on time
- Excellent short and long fragment recovery, higher signal



ADS™ Sequencing Reaction Cleaning Beads

PRODUCT IMAGE AND KEY HIGHLIGHTS



- Specially optimized for DNA sequencing
- Ensuring product integrity and high recovery
- Minimal wash steps and simple workflow
- Cost-effective cleaning



ORDERING INFORMATION

Product Name	Unit Size	Catalog #
SupreDye™ XT Purification Kit	100 preps (2 mL)	160001
SupreDye™ XT Purification Kit	1000 preps (20 mL)	160010
SupreDye™ XT Purification Kit	2500 preps (50 mL)	160025
SupreDye™ XT Purification Kit	40,000 preps (800 mL)	160400

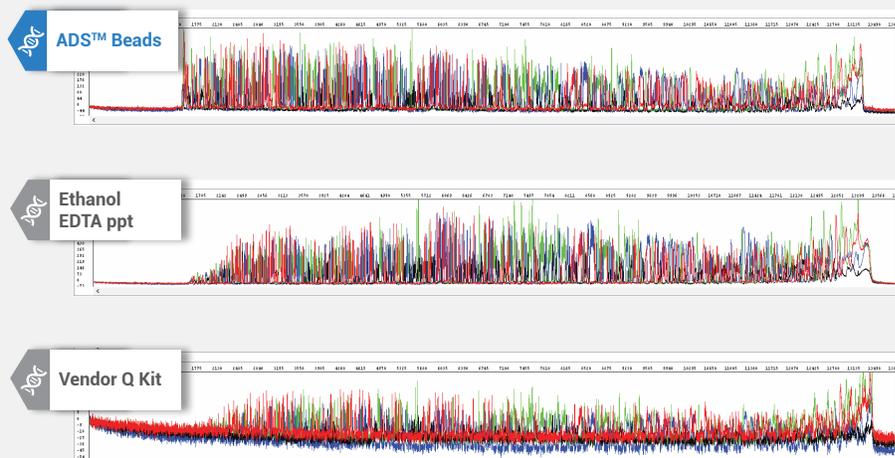
ORDERING INFORMATION

Product Name	Unit Size	Catalog #
ADS™ Sequencing Reaction Cleaning Beads	8 mL	080008
ADS™ Sequencing Reaction Cleaning Beads	50 mL	080050
ADS™ Sequencing Reaction Cleaning Beads	250 mL	080250
ADS™ Sequencing Reaction Cleaning Beads	1000 mL	081000

Choosing the Right Kit for Sequencing Reaction Clean-up

Both kits can effectively remove sequencing contaminants and achieve the desired sequencing results. The SupreDye™ Purification Kit reduces processing time by eliminating wash steps which are included in the ADS™ Sequencing Reaction protocol. However, the ADS™ Sequencing Reaction Cleaning Beads are more cost-effective and compared to other magnetic beads used for the same application, the ADS™ beads are optimized to achieve high-quality sequencing that significantly reduces dye-blobs with fewer wash steps. Purified products from SupreDye™ Purification Kit and ADS™ Sequencing Reaction Cleaning Beads can then be directly loaded on the sequencer without sample resuspension, which is necessary for products purified by ethanol precipitation.

SUPPORTING DATA



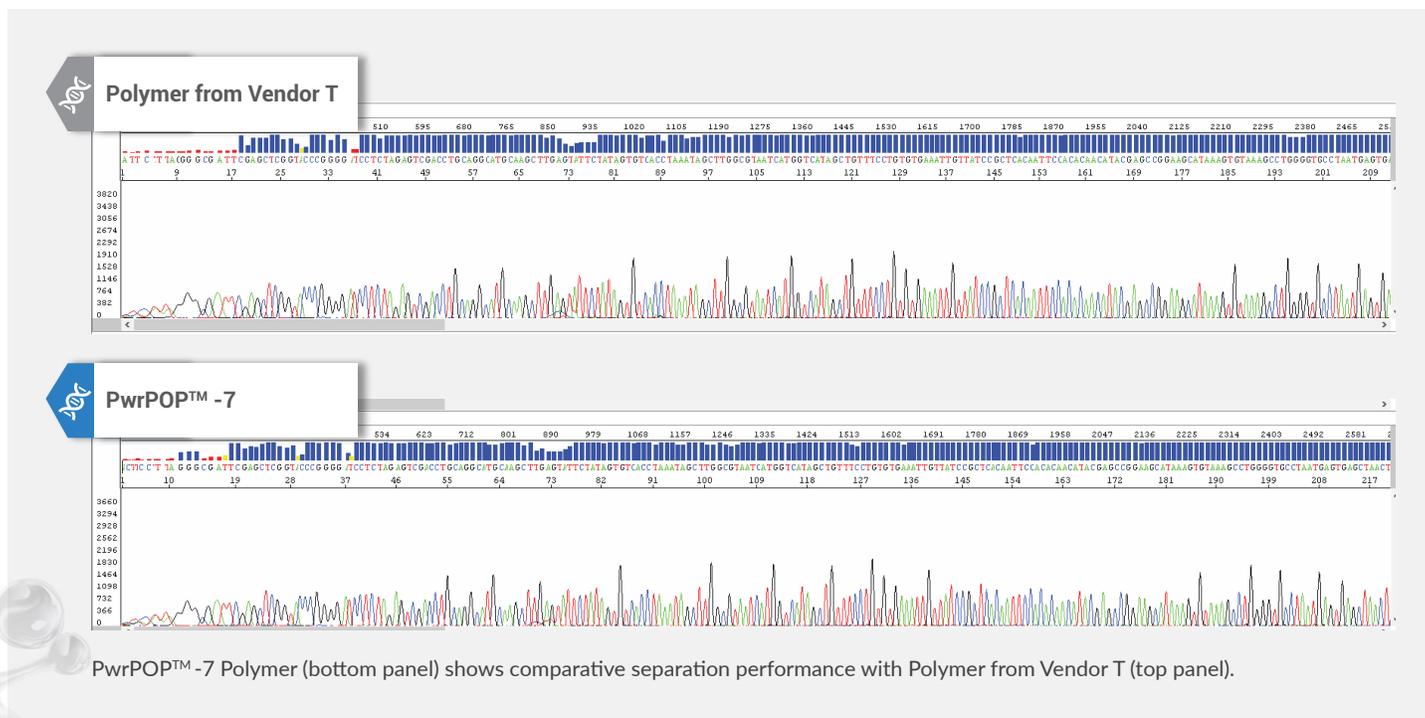
Sequencing raw data comparison for the same sequencing reaction purified by ADS™ Beads (top panel), ethanol purification (middle panel), and Vendor Q kit spin column purification (bottom panel). Both ethanol precipitation and Vendor Q kit lose small extension products and generate significantly reduced signals near the primer site.

SAMPLE LOADING AND CAPILLARY ELECTROPHORESIS



After sequencing reactions are cleaned up or purified, they are ready to be loaded on genetic analyzers for capillary electrophoresis. Depending on the purification methods or products used, the samples may be directly loaded to CE or need to be resuspended either in water/buffer or formamide before loading. Sequencing reactions purified by ethanol precipitation are often resuspended in highly deionized formamide for optimal signal intensity and stability.

Polymers as separation matrices are important for effective separation of extension products. It is critical to use high-quality polymer products to get traces with good signal intensity, even peak heights and spaces for accurate basecalls and long reads.



TruPure™ Formamide

PRODUCT IMAGE



PRODUCT KEY HIGHLIGHT

- High purity
- High signal intensity
- Great signal stability



PwrPOP™ Polymers

PRODUCT IMAGE



PRODUCT KEY HIGHLIGHT

- Optimized for DNA sequencing and fragment analysis
- Even peak separation for long reads
- Cost-effective



ORDERING INFORMATION

Product Name	Unit Size	Catalog #
PwrPOP™-4 for 310/3100 series	5 mL	034005
PwrPOP™-4 for 310/3100 series	10 mL	034010
PwrPOP™-4 for 3130 series	3.5 mL	034003
PwrPOP™-4 for 3130 series	7 mL	034007
PwrPOP™-4 for 3130 series	28 mL	034028
PwrPOP™-6 for 310/3100 series	5 mL	036005
PwrPOP™-6 for 310/3100 series	10 mL	036010
PwrPOP™-6 for 3130 series	3.5 mL	036003
PwrPOP™-6 for 3130 series	7 mL	036007
PwrPOP™-6 for 3130 series	28 mL	036028
PwrPOP™-7 for 3130 series	3.5 mL	037003

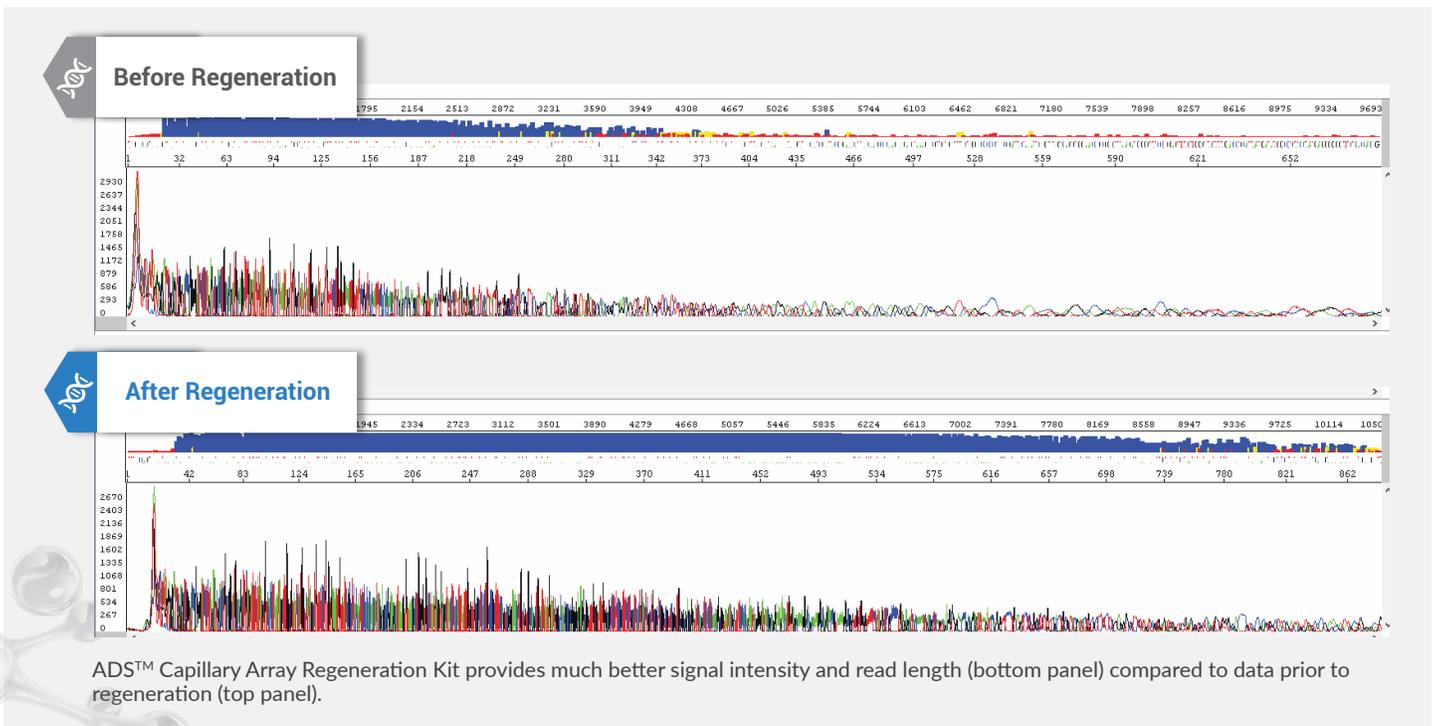
Product Name	Unit Size	Catalog #
PwrPOP™-7 for 3130 series	7 mL	037007
PwrPOP™-7 for 3730 series	28 mL	037028
PwrPOP™-7 for 3730 series	5 x 28 mL	037140
PwrPOP™-7 for 3730 series	10 x 28 mL	037280
PwrPOP™-7 for 3730 series	30 x 28 mL	037840
ADS™ Conformational Analysis Polymer (CAP)	25 mL	032025
TruPure™ Formamide	25 mL	090025
ADS™ 10x Running Buffer (with EDTA)	25 mL	010025
ADS™ 10x Running Buffer (with EDTA)	100 mL	010100
ADS™ 10x Running Buffer (with EDTA)	500 mL	010500
ADS™ 10x Running Buffer (with EDTA)	2500 mL	012500

REGENERATION OF CAPILLARY ARRAY



After extensive usage, capillary arrays need to be regenerated to remove debris accumulated inside the capillaries. This helps restore normal performance in the separation of extension products. Without proper regeneration, the lifetime of the capillary array can be short and the replacement cost becomes significant.

Experienced users are able to recognize the appropriate time to regenerate the capillary array based on substandard array performance such as the uneven peak space and shortened reading length. Once the array is regenerated, it will return to its optimal operating conditions. We recommend ADS™ Capillary Regeneration Kit be used after every 500 runs to keep the performance of the capillaries optimal.



ADS™ Capillary Regeneration Kits

PRODUCT IMAGE



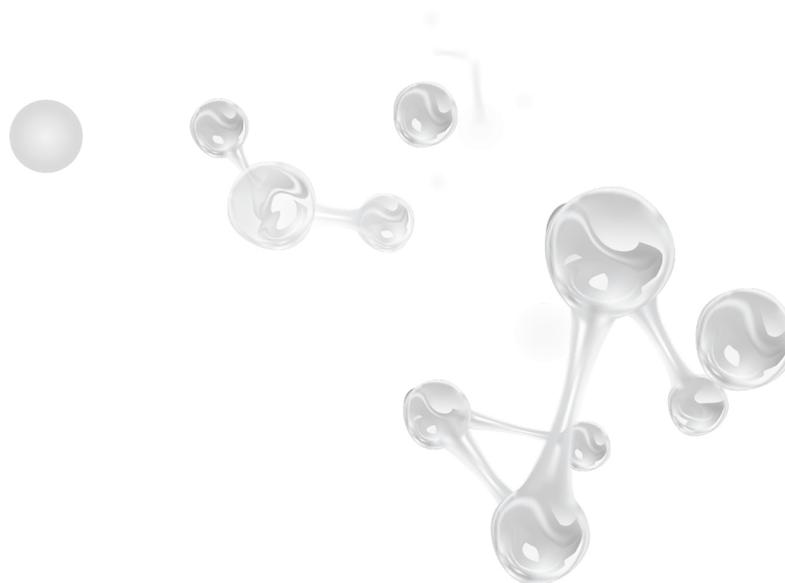
PRODUCT KEY HIGHLIGHT

- Easy implementation
- On instrument protocol
- No capillary assembly/disassembly
- Short hands-on time
- Cost-effective



ORDERING INFORMATION

Product Name	Unit Size	Catalog #
ADS™ Capillary Regeneration Kit for 3130	4x 7 mL	150007
ADS™ Capillary Regeneration Kit for 3130 and 3170	4x 28 mL	150028





AdvancedSeq LLC,
Your Reliable Sanger Sequencing
Reagents Partner



AdvancedSeq provides high-quality Sanger Sequencing products distributed worldwide.

To purchase AdvancedSeq products, or for more information, visit: EdgeBio.com