OligoSep™ Columns for Oligo Prep & Analysis

Access our Best-in-class Chromatography for your Oligo Pipeline!

With the advent of FDA-approved antisense and siRNA therapeutics, and parallel approvals of LNP technology, your oligonucleotide candidates have a clear path to the clinic. ADS Biotec has quietly supplied best-in-class analytical chromatography columns — OligoSep, RNASep, and DNASep — to enable critical proof of concept data without unwanted variables or contaminants. Recent "N of 1" disease opportunities also match well with ADS Biotec's small-scale preparative chromatography products.

All ADS columns are supplied with the highest quality buffers on the market, which are used in quality release prior to delivery. ADS is also honored to have our columns and buffers cited in the recent USP analytical guidelines for mRNA (https://go.usp.org/mRNAVaccineQuality). ADS also has been audited for GMP supply to several global CMOs, if scaleup is in your plans.

Following are a series of data figures showcasing the clean baselines and excellent purification dynamics provided by ADS columns and buffers, available exclusively from ADS Biotec.

Contact us anytime for a confidential review of how our Oligo Column and Buffers can assist you!

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Duplex Short Oligo (siRNA) Performance – Either via Denaturing or Non-Denaturing Approaches

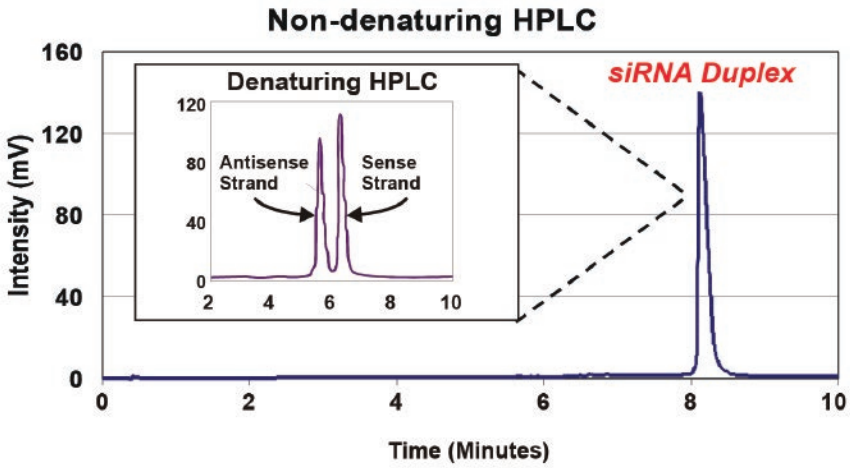


Figure 1. Analysis of duplex siRNA purified from 50 OD units of crude, annealed oligonucleotides (100 OD units total). Crude sense and antisense fire-fly luciferase siRNA oligonucleotides were annealed, and duplex siRNAs were purified using the optimized siRNA purification protocol Purified duplex siRNA was dried, resuspended in water and 1 µg was analyzed on the WAVE System 3500HT using the OligoSep Cartridge and WAVE Optimized TEAA Buffers under non-denaturing conditions to evaluate duplex purity, and under fully-denaturing conditions to confirm absence of synthesis failures in purified duplexes.

Refer to the *Materials and Methods* section in our *Application Note 121 Purification of Duplex siRNAs Directly from Crude, Annealed Oligonucleotides* for more information.

ADS Biotec Columns Offer Excellent Discrimination — Including Detection of N-1 Species

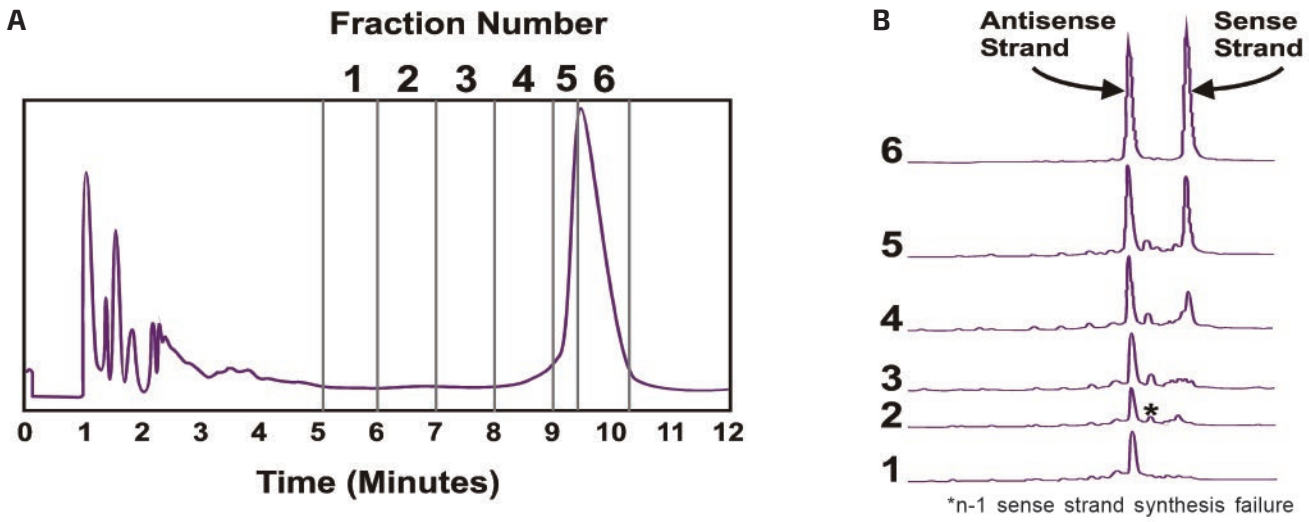
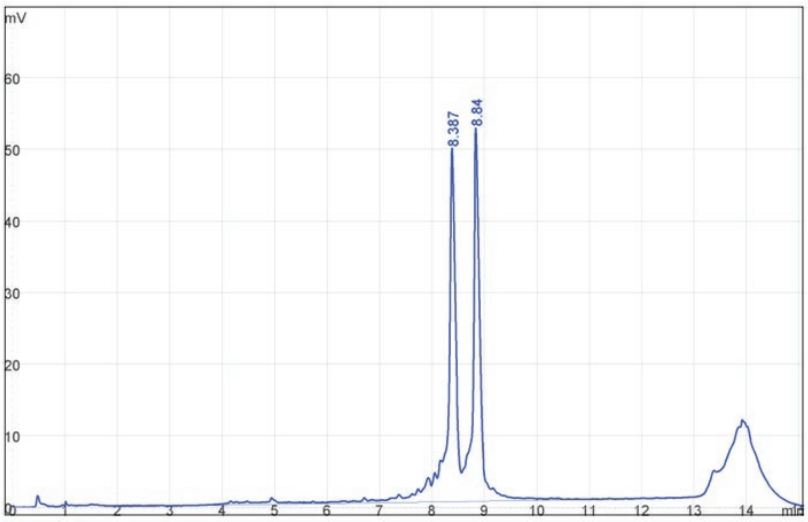


Figure 2. Analysis of fractions collected during separation of annealed Lamin A/C siRNA oligonucleotides under non-denaturing conditions. (**A**) Lamin A/C siRNA oligonucleotides (10 OD units total, 5 OD units of each crude oligonucleotide) were annealed in deprotection milieu and separated on the OligoSep Prep HC Cartridge using WAVE Optimized HA Buffers. Individual fractions were collected at the times shown, dried and resuspended in water. (**B**) Equal amounts (1 µg) of oligonucleotide from each fraction were analyzed under fully-denaturing conditions with the WAVE System 3500HT, OligoSep Cartridge and WAVE Optimized TEAA Buffers.

Refer to the *Materials and Methods* section in our *Application Note 121 Purification of Duplex siRNAs Directly from Crude, Annealed Oligonucleotides* for more information.

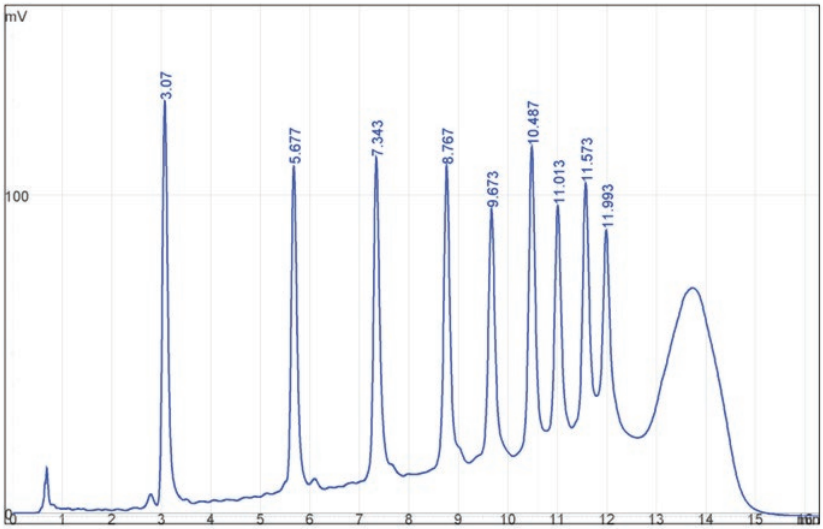
Oligonucleotide Separation and Baseline Performance – 20/21mer Discrimination

Column: NUC-99-3550
Sample: Oligonucleotide Standard 20/21mer
Mobile phase: A-0.1 M TEAA in water B; – 0.1 M TEAA in 25% acetonitrile
System: 0.9 ml/min, 80°C, 5 µL injection



Gradient	Time	%A	%B
Loading	0	90	10
Start Gradient	5	85	15
Stop Gradient	10.5	70	30
Start Clean	10.6	0	100
Stop Clean	11.1	0	100
Start Equilibrate	11.2	90	10
Stop Equilibrate	12.1	90	10

Column: NUC-99-3560
Sample: Oligonucleotide Ladder 20-100 bases
Mobile phase: A-0.1 M HAA in 10% acetonitrile; B – 0.1 M HAA in 50% acetonitrile
System: 0.9 ml/min, 80°C, 0.9 µg/µL



Gradient	Time	%A	%B
Loading	0	49	51
Start Gradient	1	44	56
Stop Gradient	11	20	80
Start Clean	11.1	0	100
Stop Clean	12.1	0	100
Start Equilibrate	12.2	53	47
Stop Equilibrate	14.2	53	47

Order Information

Catalogue Number	Product Name	Product Description
NUC-99-3550	OligoSep™ Column 4.6 mm x 50 mm	The OligoSep™ – HPLC Oligonucleotide analysis column uses alkylated non-porous polystyrene-divinylbenzene (PS-DVB) copolymer microspheres for high performance nucleic acid separations. These versatile columns can be used with a variety of HPLC systems for oligonucleotide QC and high resolution ds/ssDNA analysis to 20 µg.
NUC-99-3560	OligoSep™ HC Column 4.6 mm x 50 mm	The OligoSep™ – High Capacity HPLC Oligonucleotide analysis column uses alkylated macro-porous polystyrene-divinylbenzene (PS-DVB) copolymer microspheres for high performance nucleic acid separations. These versatile columns can be used with a variety of HPLC systems for oligonucleotide purification or analysis of ds/ssDNA analysis. Typically with loading capacity of approximately 1,700 µg.
NUC-99-3860	OligoSep™ Prep HC Column 7.8 mm x 50 mm	The OligoSep™ Prep – High Capacity HPLC Oligonucleotide purification column uses alkylated macro-porous polystyrene-divinylbenzene (PS-DVB) copolymer microspheres for high performance nucleic acid separations. These versatile columns can be used with a variety of HPLC systems for Oligonucleotide Synthesis Purification, up to 5,000 µg.
NUC-99-3870	OligoPrep™ HC3 Column 7.8 mm x 150 mm	The OligoSep™ Prep – High Capacity HPLC Oligonucleotide purification column uses alkylated macro-porous polystyrene-divinylbenzene (PS-DVB) copolymer microspheres for high performance nucleic acid separations. These versatile columns can be used with a variety of HPLC systems for Purification of Oligo Syntheses where the synthesis exceeds 1 µ mole.
RPC-99-3015	RNASep™ Semi-Prep – Ultra High Capacity RNA Purification Column 30 mm x 150 mm	The RNASep™ Semi-Prep is an ultra high capacity HPLC RNA purification column that uses alkylated non-porous polystyrene-divinylbenzene (PS-DVB) copolymer microspheres for high performance nucleic acid separations. These versatile columns can be used with a variety of HPLC systems for RNA purification up to 2 mg. They are also ideal for the development of effective mRNA vaccines and other novel drug candidates.
RPC-99-2110	RNASep™ Semi-Prep – High Capacity RNA Purification Column 21.2 mm x 100 mm	RNASep™ Semi-Prep is a high capacity RNA purification column that uses alkylated non-porous polystyrene-divinylbenzene (PS-DVB) copolymer microspheres for high performance nucleic acid separations. These versatile columns can be used with a variety of HPLC systems for RNA analysis and purification. They are also ideal for the development of effective mRNA vaccines and other novel drug candidates.