YMC

Bioinert Columns
YMC Accura Triart

Oligonucleotides

Peptides/proteins

Metal coordinating compounds

Highly accurate results

Exceptional peak shapes

Excellent recoveries

No carry-over

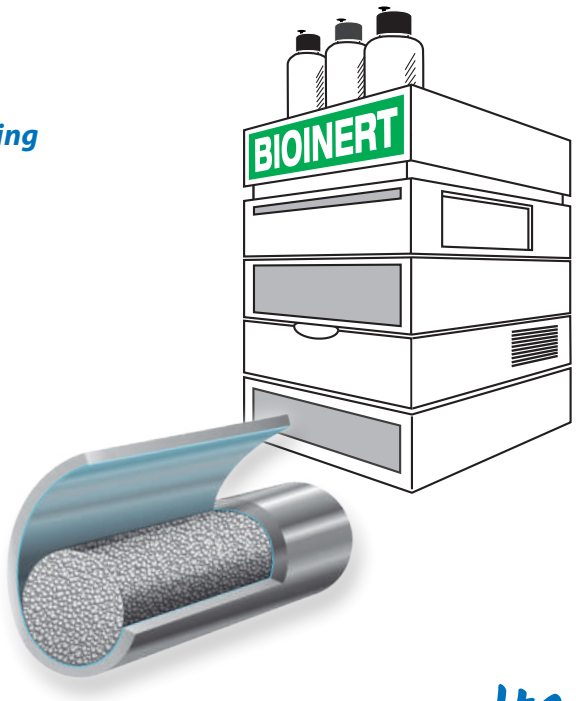
Bioinert coated YMC Accura Triart

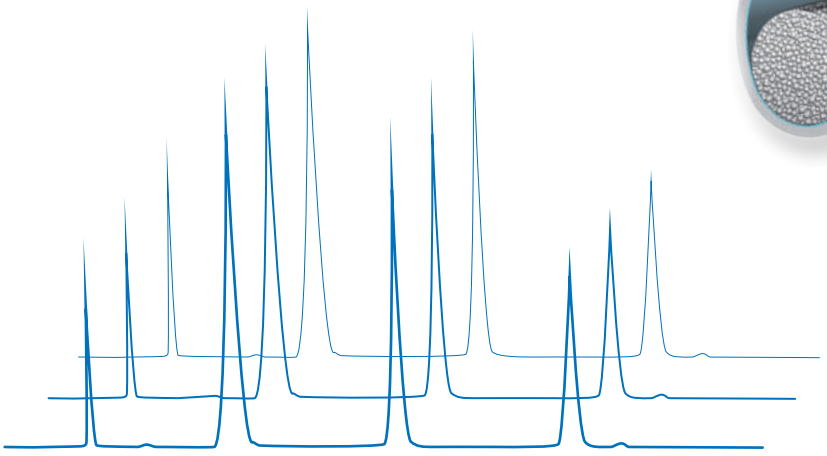
Features

- *Exceptional peak shapes with high sensitivities*
- *Excellent recoveries without column preconditioning*
- *Superior reproducibility and no carry-over effects*
- *Ideal for highly sensitive LC/MS analyses*
- *New surface coated hardware*

Ideal choice for

- *Oligonucleotides, nucleotides*
- *Peptides and proteins*
- *Metal coordinating compounds*





Reliable results without preconditioning!

Specifications

YMC-Triart Phases	C18, C18 ExRS, Bio C18, C8, Bio C4, Phenyl, PFP, Diol-HILIC
Particle Size	1.9, 3, 5 µm
Hardware	Bioinert coated stainless steel (all wetted parts incl. frits)
Pressure Limit	1.9 µm: 100 MPa / 1,000 bar / 15,000 psi 3 / 5 µm: 45 MPa / 450 bar / 6,525 psi
Column Connection	No special connections required

YMC Accura Triart columns are an alternative to the already existing YMC-Triart metal-free, PEEK-lined columns from YMC. As the used column coating is less hydrophobic compared to the PEEK-lining, YMC Accura columns are the ideal choice for e.g. more hydrophobic peptides which tend to show pronounced interactions with PEEK.

Available inert stationary phases

YMC-Triart C18

versatile applications

first choice for method development

pH 1–12/90 °C max.

100% aqueous eluents

YMC-Triart C18 ExRS

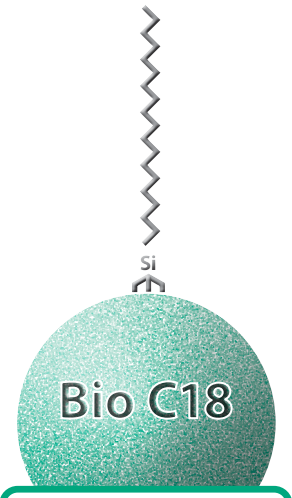
extended pH and stability

hydrophobic substances

positional isomers

pH 1–12/90 °C max.

YMC-Triart Bio C18



peptides/proteins/ oligonucleotides

300 Å widepore

pH 1–12/90 °C max.

100% aqueous eluents

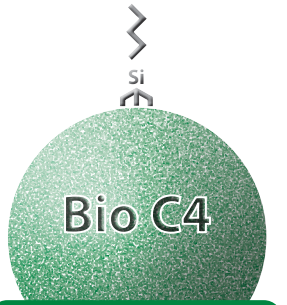
YMC-Triart C8

alternative to C18

short retention time

pH 1–12/90 °C max.

YMC-Triart Bio C4



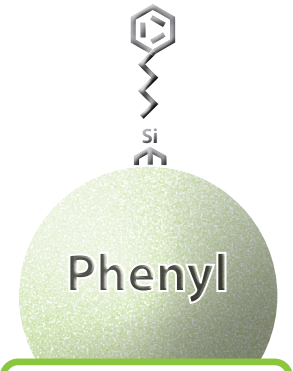
proteins/antibodies/peptides

300 Å widepore

pH 1–10/90 °C max.

100% aqueous eluents

YMC-Triart Phenyl

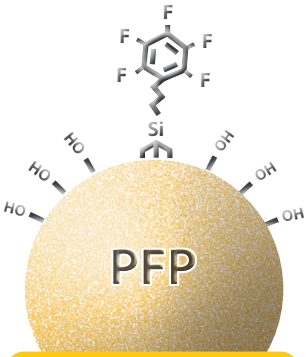


aromatic compounds (π-electron donor)

conjugated systems

100% aqueous eluents

YMC-Triart PFP



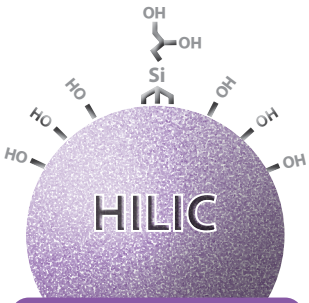
aromatic compounds (π-electron donor)

cis-trans isomers

polar halogenated compounds

100% aqueous eluents

YMC-Triart Diol-HILIC



very polar compounds

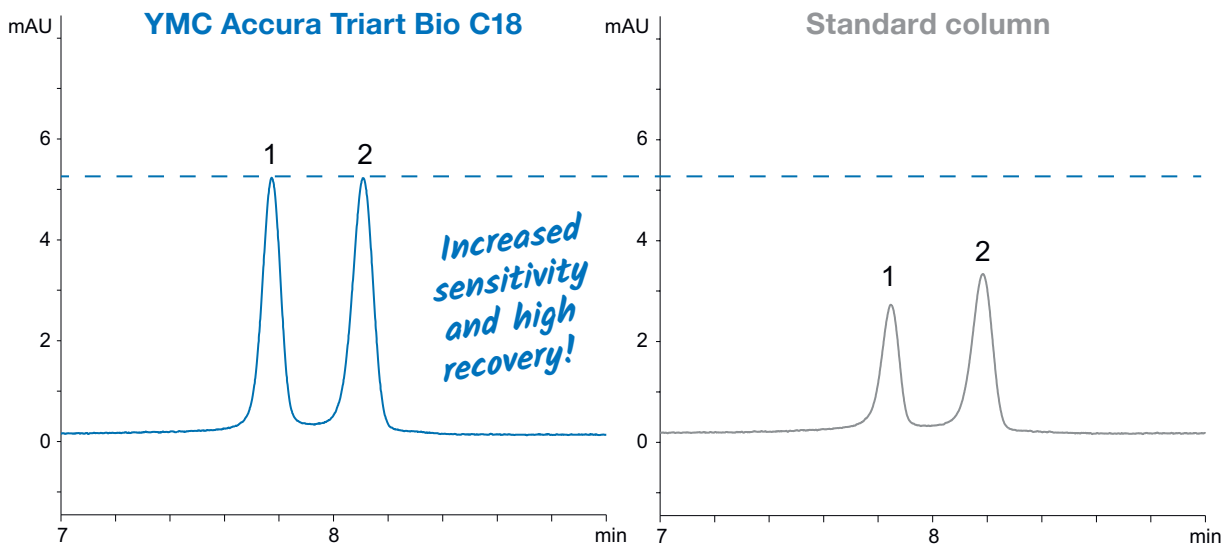
less ionic adsorption

ideal choice for SFC

100% aqueous eluents

Ensured sensitivity and recovery

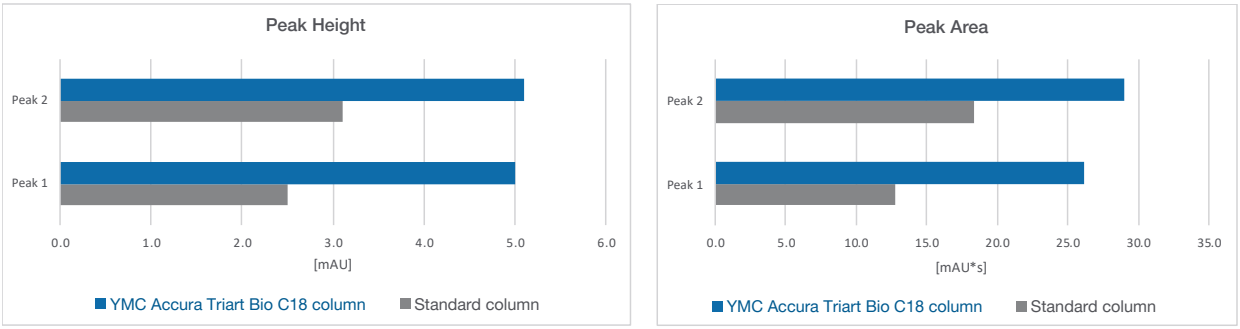
Ideal choice for challenging analytes such as phosphorothioate oligonucleotides



Column:	YMC Accura Triart Bio C18 (1.9 µm, 30 nm) 50 x 2.1 mm ID
Part No.:	TA30SP9-05Q1PTC
Eluent:	A) 15 mM triethylamine - 400 mM HFIP*
	B) methanol
Gradient:	8–18%B (0–10 min)
Flow rate:	0.42 mL/min
Temperature:	65°C
Detection:	UV at 260 nm
Injection:	1 µL
Sample:	All PS RNA 20mer (1) (5'-U^C^A^U^C^A^C^A^C^U^G^A^A^U^A^C^C^A^A^U-3')
	All PS RNA 21mer (2) (5'-G^U^C^A^U^C^A^C^A^C^U^G^A^A^U^A^C^C^A^A^U-3')
	^=Phosphorothioate

*1,1,1,3,3,3-hexafluoro-2-propanol

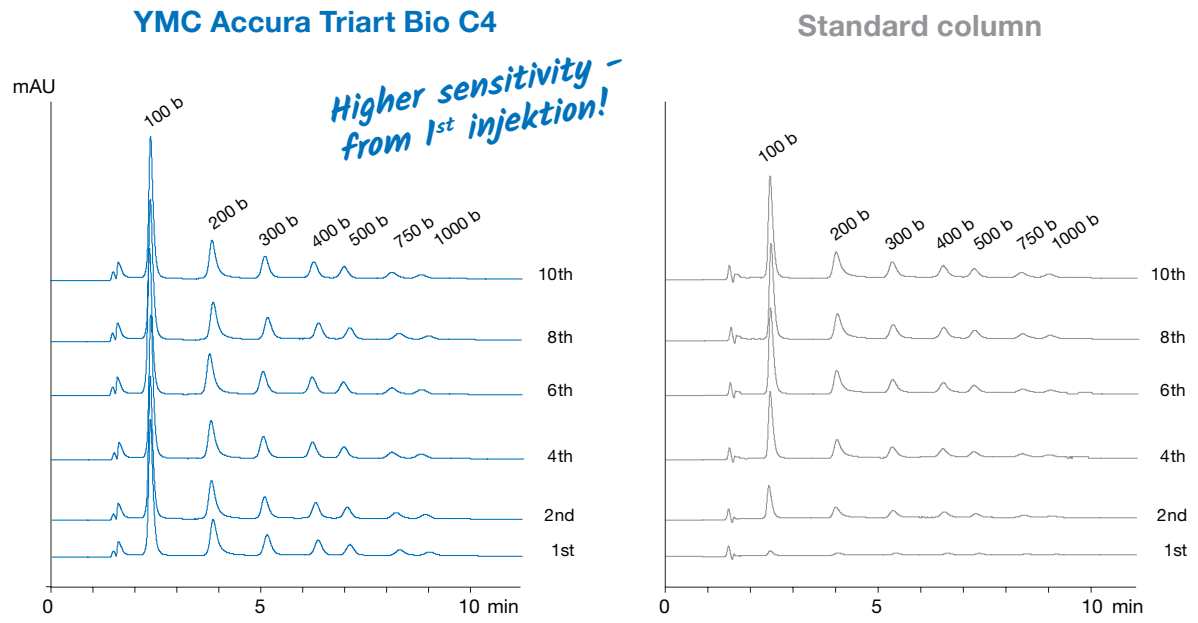
High sensitivity and recovery



Doubled peak height and area!

The YMC Accura Triart Bio C18 column provides double peak heights and peak areas for the oligonucleotides compared to those for regular stainless-steel columns. YMC Accura Triart columns enhance the sensitivity significantly and help to save precious samples without any loss.

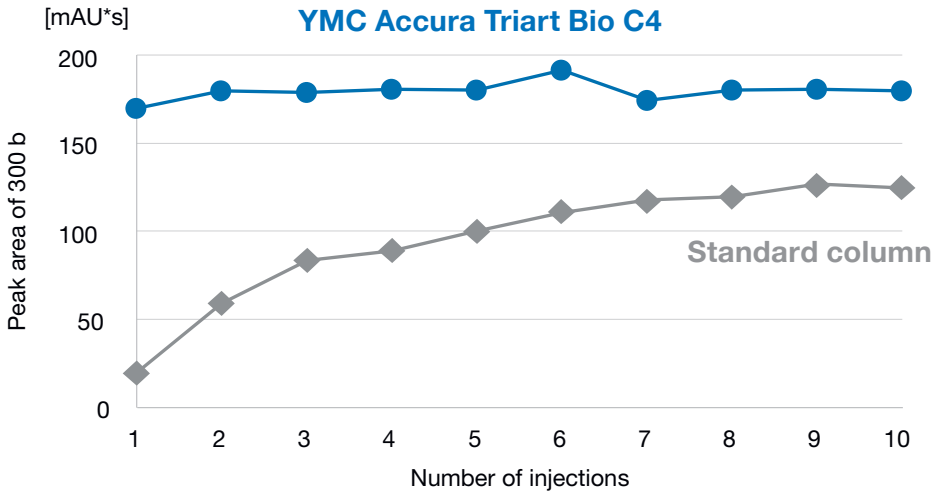
No preconditioning required for reliable results from the 1st injection



Column: YMC Accura Triart Bio C4 (3 µm, 30 nm) 100 x 2.1 mm ID
Part No.: TA30S03-10Q1PTC
Eluent: A) 50 mM TEAA* (pH 7.0)/acetonitrile (95/5)
B) 50 mM TEAA (pH 7.0)/acetonitrile (50/50)
Gradient: 9–14%B (0–10 min), 80%B (10–15 min)
Flow rate: 0.2 mL/min
Temperature: 80 °C
Detection: UV at 254 nm
Injection: 1 µL (0.25 mg/mL)
Sample: 100–1,000 bases (Century™-Plus RNA Markers)

* Triethylammonium acetate

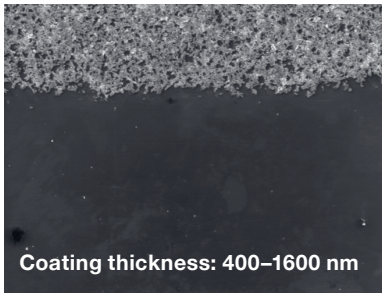
Constantly higher peak areas and therefore recoveries



The YMC Accura Triart Bio C4 column shows stable peak areas from the first injection, while the standard stainless-steel column provides only 10% of the peak area (for the 300 base marker) with the first injection. Even after the tenth injection, the peak areas of the stainless-steel column are considerably less than those of the YMC Accura Triart column.

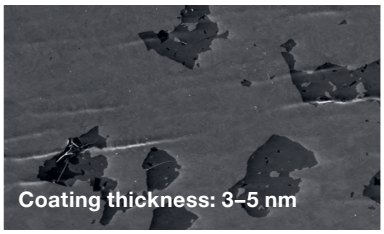
Robust coating for high inertness

Durable bioinert coating



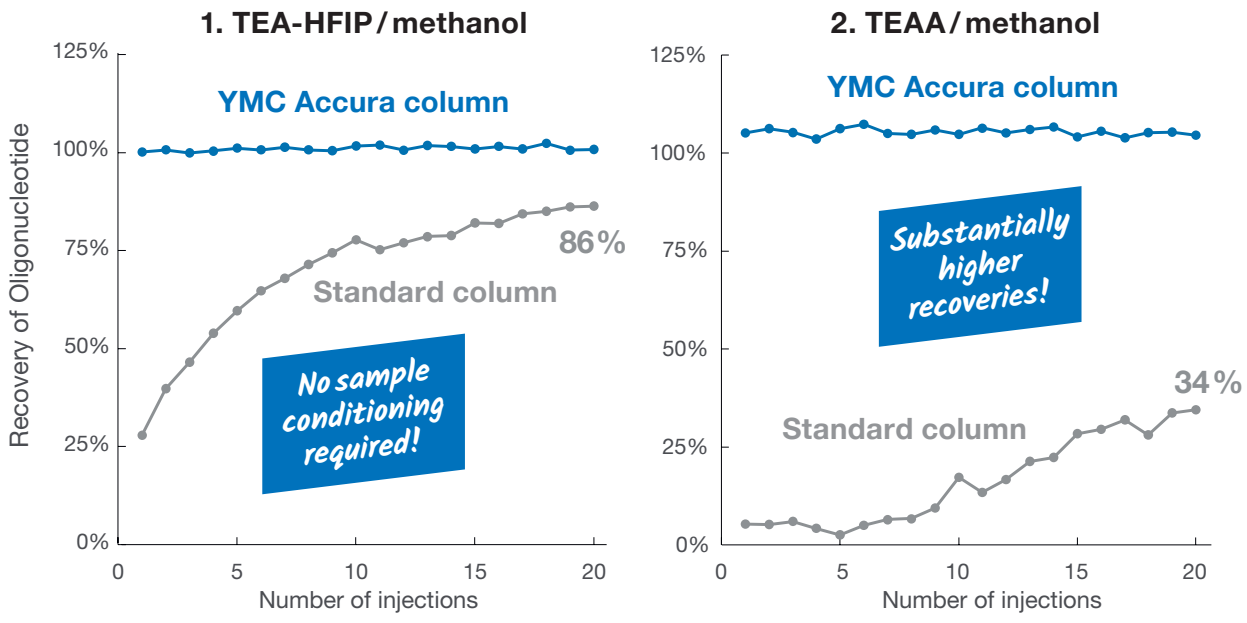
The robust bioinert coating used on YMC Accura hardware is 130 to 320-fold thicker making it more durable than other similar hardware concepts. A long-term inertness against sensitive substances is ensured.
In order to demonstrate its robustness, a YMC Accura column was packed multiple times. Even though this is quite a challenge for the column surface, the coating remains unaffected (SEM* picture: top area is bare steel for comparison).

Other coated columns can lose their inertness over time. This will again lead to adsorption of sensitive compounds on the uncovered metallic surfaces. Peak tailing, loss of recovery and sample carry-over are typical results of the delamination of the coating. After only unpacking a coated competitor column most of the coating is already delaminated (dark spots: remaining coating).



*Scanning Electron Microscope

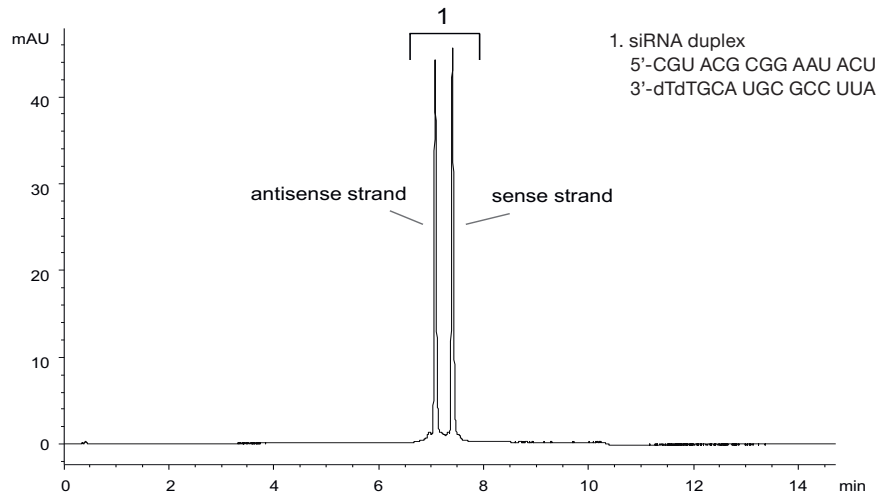
High surface inertness without any adsorption



Column:	*Empty* YMC Accura (without stationary phase)
Eluent:	1) 8 mM TEA 200 mM HFIP / methanol (82/18) 2) 100 mM TEAA / methanol (82/18)
Flow rate:	0.42 mL/min
Detection:	UV at 260 nm
Temperature:	65°C
Injection:	1 µL
Sample:	All PS RNA 20mer (1) (5'-U^C^A^U^C^A^C^A^C^U^G^A^A^U^A^C^C^A^A^U-3') ^=Phosphorothioate

The YMC Accura hardware with its inert surface area prevents adsorption of oligonucleotides using a range of different buffers. No sample conditioning is required.
YMC Accura columns further provide significantly higher recoveries and sensitivities that cannot be achieved with regular stainless steel columns – even after conditioning with 20 sample injections. These ready-to-use columns ensure high recovery and reproducibility from the very first use.

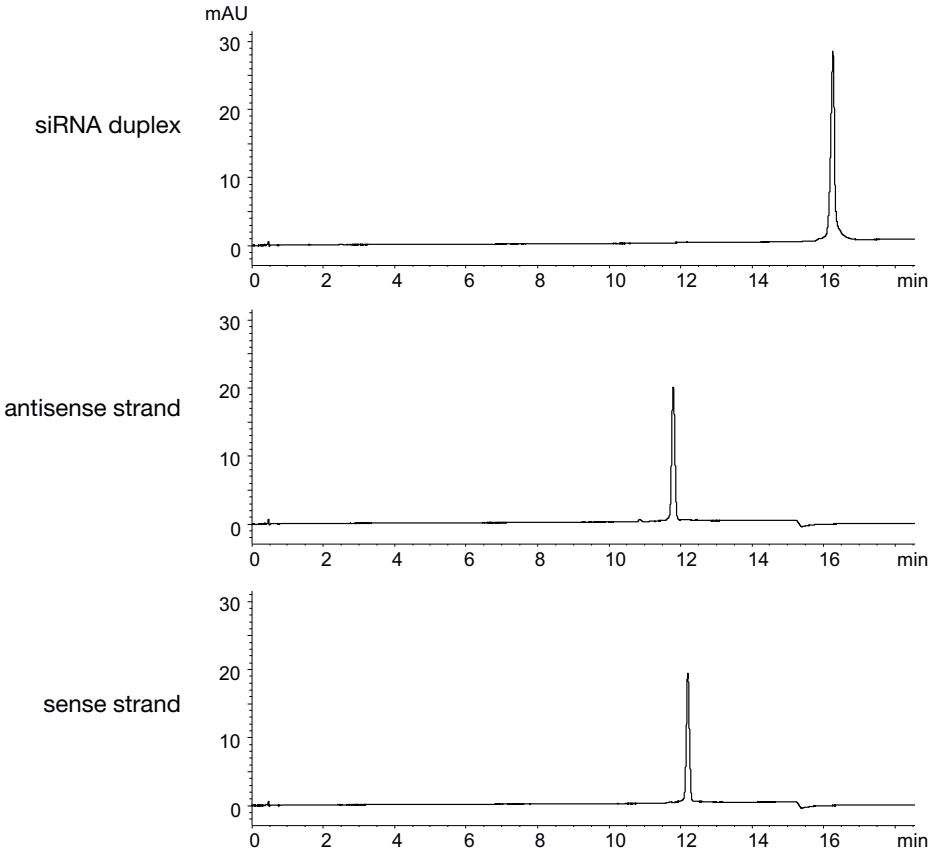
siRNA duplex under denaturing conditions



1. siRNA duplex
   5'-CGU ACG CGG AAU ACU UCG AdTdT-3' antisense strand
   3'-dTdTGCA UGC GCC UUA UGA AGC U-5' sense strand

Column:	YMC Accura Triart Bio C18 (1.9 µm, 30 nm) 50 x 2.1 mm ID	Flow rate:	0.42 ml/min
Part No.:	TA30SP9-05Q1PTC	Temperature:	65 °C
Eluent:	A) 15 mM TEAA (pH 8)	Detection:	UV at 260 nm
	B) methanol	Injection:	1 µl (5 nmol/ml)
Gradient:	5%–20%B (0–15 min)	Sample:	siRNA duplex

siRNA duplex and its single strands under non-denaturing conditions



Column:	YMC Accura Triart Bio C18 (1.9 µm, 30 nm) 50 x 2.1 mm ID	Flow rate:	0.42 ml/min
Part No.:	TA30SP9-05Q1PTC	Temperature:	25 °C
Eluent:	A) 15 mM triethylamine-400 mM HFIP (pH 8)	Detection:	UV at 260 nm
	B) methanol	Injection:	1 µl (5 nmol/ml)
Gradient:	10%–28%B (0–18 min)	Sample:	siRNA duplex & single strands

Ordering information

YMC Accura Triart 1.9 µm UHPLC columns (max. pressure 100 MPa)

Phase	Column ID (mm)	Column length (mm)		
		50	100	150
C18	2.1	TA12SP9-05Q1PTC	TA12SP9-10Q1PTC	TA12SP9-15Q1PTC
C18 ExRS	2.1	TAR08SP9-05Q1PTC	TAR08SP9-10Q1PTC	TAR08SP9-15Q1PTC
Bio C18	2.1	TA30SP9-05Q1PTC	TA30SP9-10Q1PTC	TA30SP9-15Q1PTC
C8	2.1	TO12SP9-05Q1PTC	TO12SP9-10Q1PTC	TO12SP9-15Q1PTC
Bio C4	2.1	TB30SP9-05Q1PTC	TB30SP9-10Q1PTC	TB30SP9-15Q1PTC
Phenyl	2.1	TPH12SP9-05Q1PTC	TPH12SP9-10Q1PTC	TPH12SP9-15Q1PTC
PFP	2.1	TPF12SP9-05Q1PTC	TPF12SP9-10Q1PTC	TPF12SP9-15Q1PTC
Diol-HILIC	2.1	TDH12SP9-05Q1PTC	TDH12SP9-10Q1PTC	TDH12SP9-15Q1PTC

YMC Accura Triart 3 µm HPLC columns (max. pressure 45 MPa)

Phase	Column ID (mm)	Column length (mm)		
		50	100	150
C18	2.1 4.6	TA12S03-05Q1PTC TA12S03-0546PTC	TA12S03-10Q1PTC TA12S03-1046PTC	TA12S03-15Q1PTC TA12S03-1546PTC
C18 ExRS	2.1 4.6	TAR08S03-05Q1PTC TAR08S03-0546PTC	TAR08S03-10Q1PTC TAR08S03-1046PTC	TAR08S03-15Q1PTC TAR08S03-1546PTC
Bio C18	2.1 4.6	TA30S03-05Q1PTC TA30S03-0546PTC	TA30S03-10Q1PTC TA30S03-1046PTC	TA30S03-15Q1PTC TA30S03-1546PTC
C8	2.1 4.6	TO12S03-05Q1PTC TO12S03-0546PTC	TO12S03-10Q1PTC TO12S03-1046PTC	TO12S03-15Q1PTC TO12S03-1546PTC
Bio C4	2.1 4.6	TB30S03-05Q1PTC TB30S03-0546PTC	TB30S03-10Q1PTC TB30S03-1046PTC	TB30S03-15Q1PTC TB30S03-1546PTC
Phenyl	2.1 4.6	TPH12S03-05Q1PTC TPH12S03-0546PTC	TPH12S03-10Q1PTC TPH12S03-1046PTC	TPH12S03-15Q1PTC TPH12S03-1546PTC
PFP	2.1 4.6	TPF12S03-05Q1PTC TPF12S03-0546PTC	TPF12S03-10Q1PTC TPF12S03-1046PTC	TPF12S03-15Q1PTC TPF12S03-1546PTC
Diol-HILIC	2.1 4.6	TDH12S03-05Q1PTC TDH12S03-0546PTC	TDH12S03-10Q1PTC TDH12S03-1046PTC	TDH12S03-15Q1PTC TDH12S03-1546PTC

YMC Accura Triart 5 µm HPLC columns (max. pressure 45 MPa)

Phase	Column ID (mm)	Column length (mm)		
		50	100	150
C18	2.1 4.6	TA12S05-05Q1PTC TA12S05-0546PTC	TA12S05-10Q1PTC TA12S05-1046PTC	TA12S05-15Q1PTC TA12S05-1546PTC
C18 ExRS	2.1 4.6	TAR08S05-05Q1PTC TAR08S05-0546PTC	TAR08S05-10Q1PTC TAR08S05-1046PTC	TAR08S05-15Q1PTC TAR08S05-1546PTC
Bio C18	2.1 4.6	TA30S05-05Q1PTC TA30S05-0546PTC	TA30S05-10Q1PTC TA30S05-1046PTC	TA30S05-15Q1PTC TA30S05-1546PTC
C8	2.1 4.6	TO12S05-05Q1PTC TO12S05-0546PTC	TO12S05-10Q1PTC TO12S05-1046PTC	TO12S05-15Q1PTC TO12S05-1546PTC
Bio C4	2.1 4.6	TB30S05-05Q1PTC TB30S05-0546PTC	TB30S05-10Q1PTC TB30S05-1046PTC	TB30S05-15Q1PTC TB30S05-1546PTC
Phenyl	2.1 4.6	TPH12S05-05Q1PTC TPH12S05-0546PTC	TPH12S05-10Q1PTC TPH12S05-1046PTC	TPH12S05-15Q1PTC TPH12S05-1546PTC
PFP	2.1 4.6	TPF12S05-05Q1PTC TPF12S05-0546PTC	TPF12S05-10Q1PTC TPF12S05-1046PTC	TPF12S05-15Q1PTC TPF12S05-1546PTC
Diol-HILIC	2.1 4.6	TDH12S05-05Q1PTC TDH12S05-0546PTC	TDH12S05-10Q1PTC TDH12S05-1046PTC	TDH12S05-15Q1PTC TDH12S05-1546PTC

Your local contact: