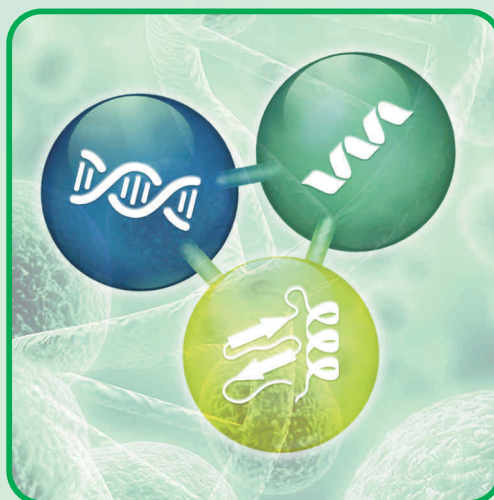




Bioinert Columns

YMC-Accura Triart

Oligonucleotides
Peptides/proteins
Metal coordinating
compounds



Highly accurate results
Exceptional peak shapes
Excellent recoveries
No carry-over

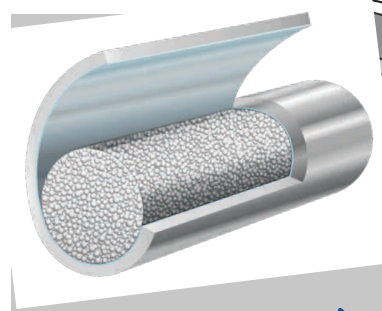
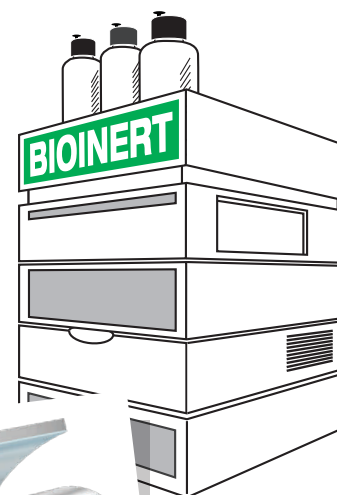
Bioinert coated YMC-Accura Triart

Features

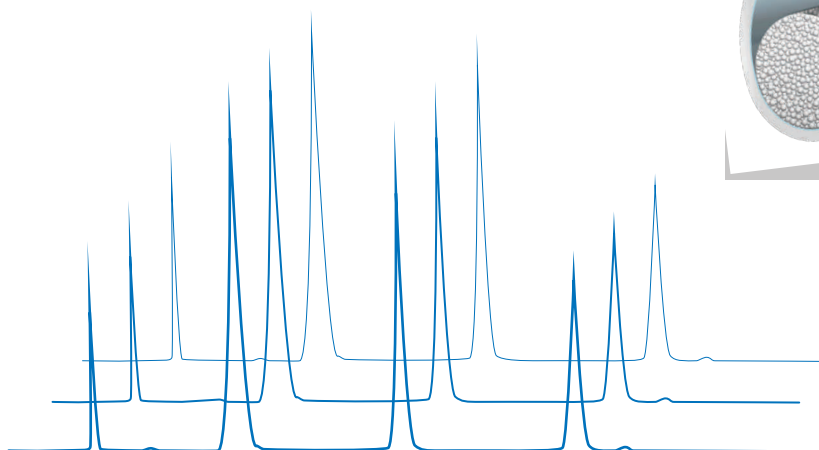
- *Exceptional peak shapes with high sensitivities*
- *Excellent recoveries without column preconditioning*
- *Superior reproducibility and no carry-over effects*
- *Ideal for highly sensitive LC/MS analyses*
- *New surface coated hardware*

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

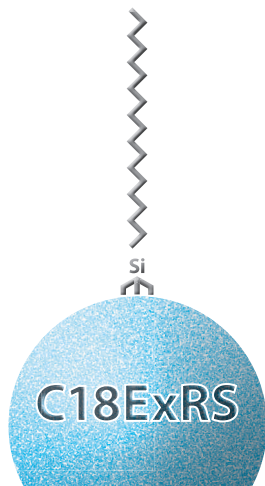
YMC-Accura Triart columns are an alternative to the already existing YMC-Triart metal-free, PEEK-lined columns from YMC. As the used column coating is less hydrophobic compared to the PEEK-lining, YMC-Accura columns are the ideal choice for e.g. more hydrophobic peptides which tend to show pronounced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

YMC-Triart C18



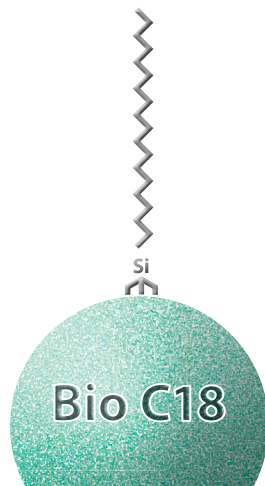
versatile applications
first choice for
method development
pH 1–12/90 °C max.
100% aqueous eluents ✓

YMC-Triart C18 ExRS



extended pH and stability
hydrophobic substances
positional isomers
pH 1–12/90 °C max.

YMC-Triart Bio C18



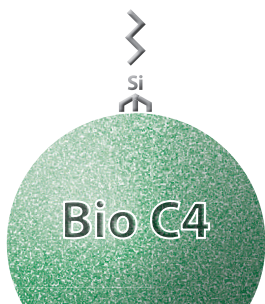
peptides/proteins/
oligonucleotides
300 Å widepore
pH 1–12/90 °C max.
100% aqueous eluents ✓

YMC-Triart C8



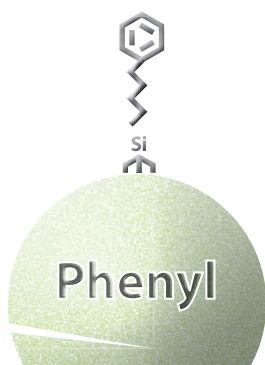
alternative to C18
short retention time
pH 1–12/90 °C max.

YMC-Triart Bio C4



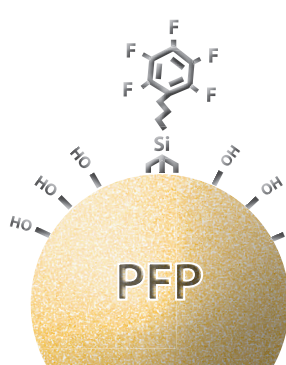
proteins/antibodies/peptides
300 Å widepore
pH 1–10/90 °C max.
100% aqueous eluents ✓

YMC-Triart Phenyl



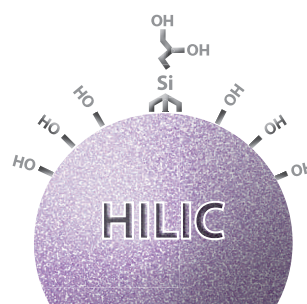
aromatic compounds
(π -electron donor)
conjugated systems
100% aqueous eluents ✓

YMC-Triart PFP



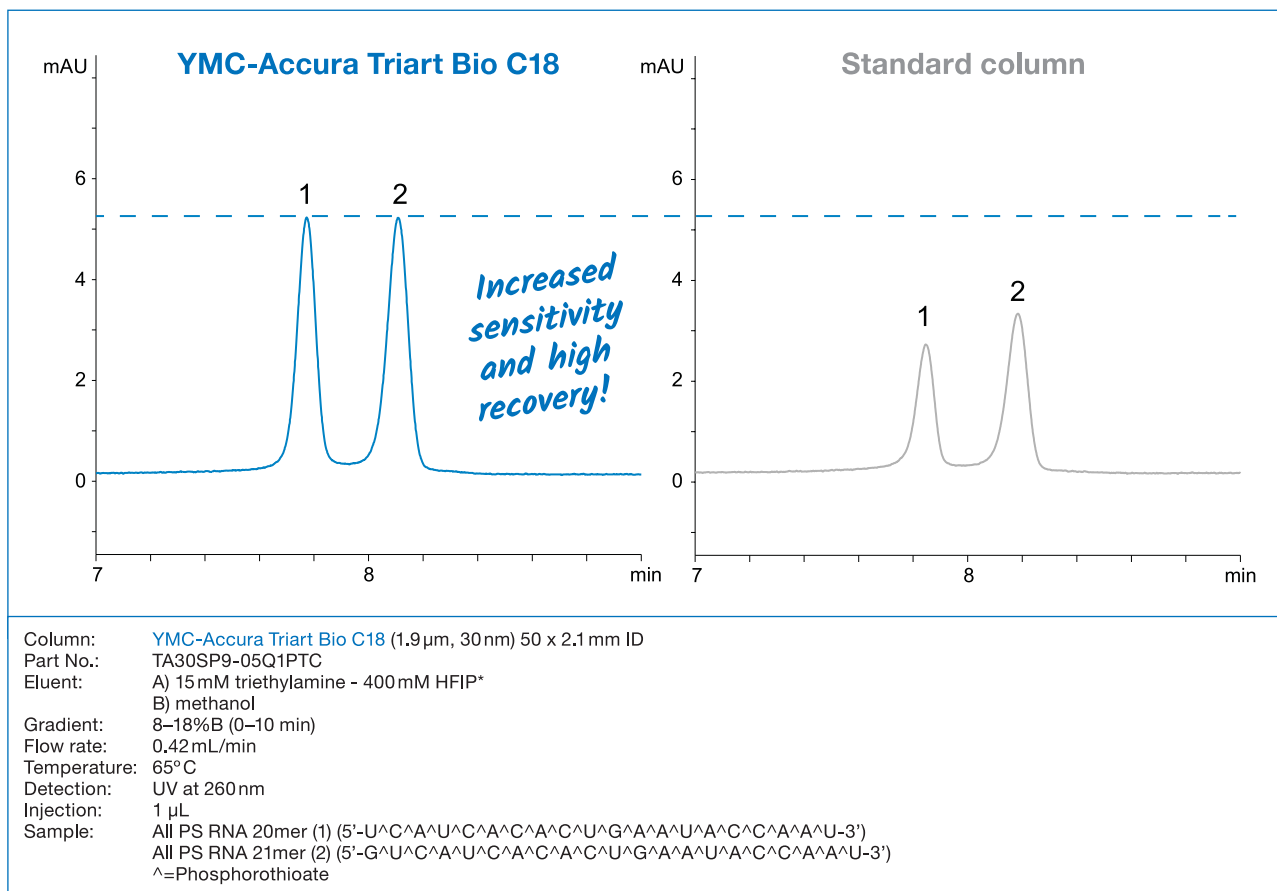
aromatic compounds
(π -electron donor)
cis-trans isomers
polar halogenated
compounds
100% aqueous eluents ✓

YMC-Triart Diol-HILIC



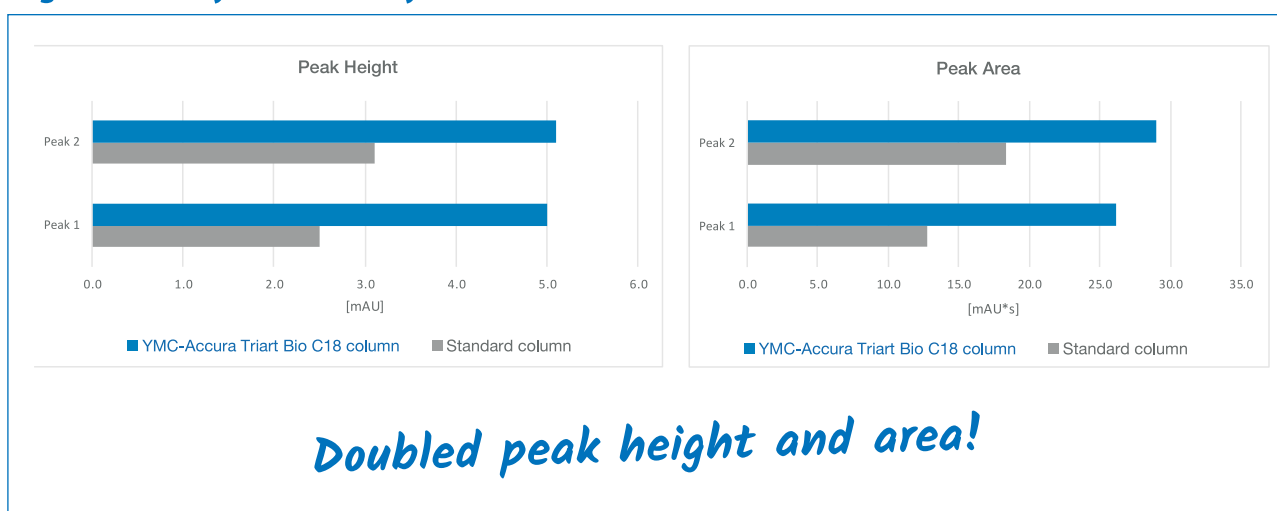
very polar compounds
less ionic adsorption
ideal choice for SFC
100% aqueous eluents ✓

Ideal choice for challenging analytes such as phosphorothioate oligonucleotides



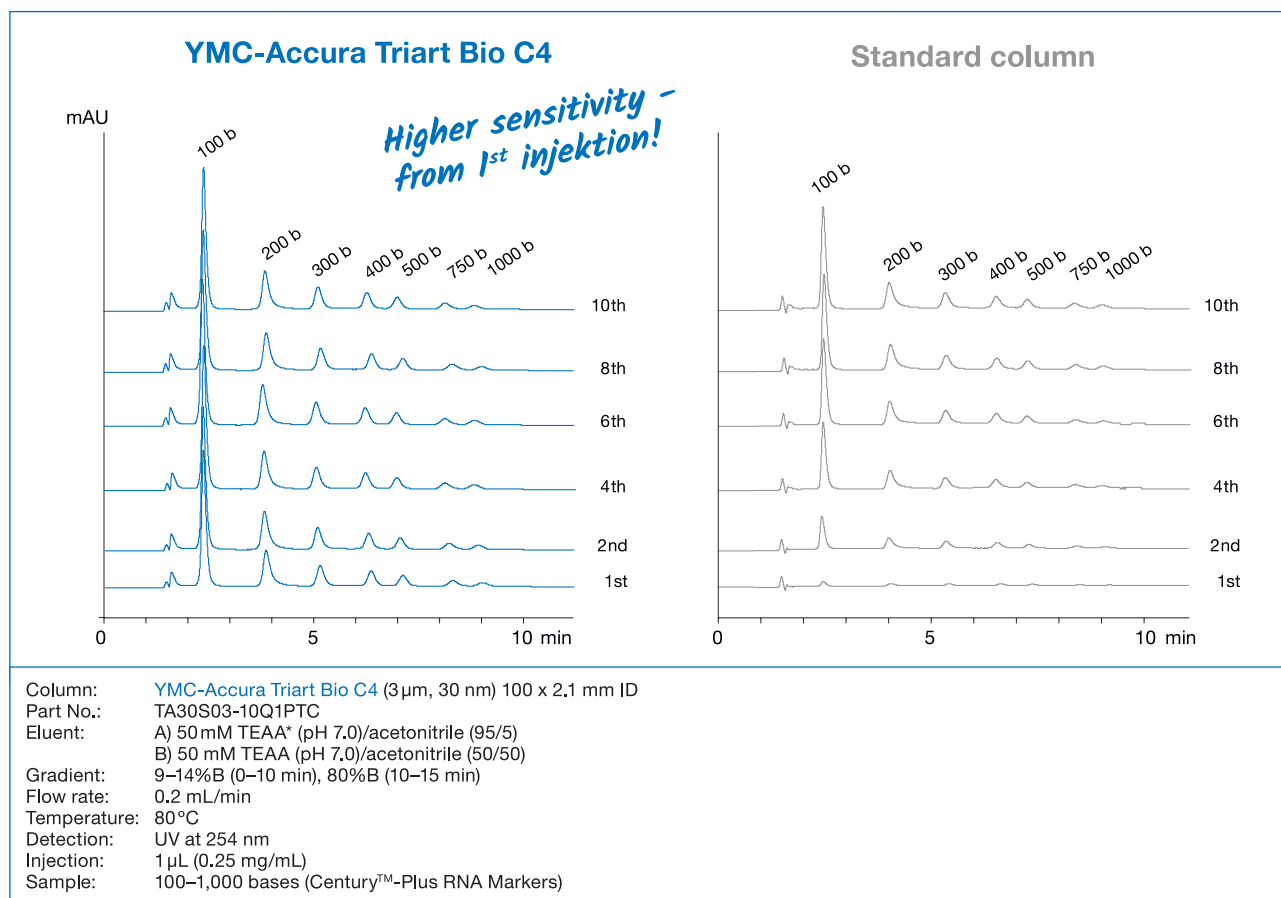
*1,1,1,3,3,3-hexafluoro-2-propanol

High sensitivity and recovery



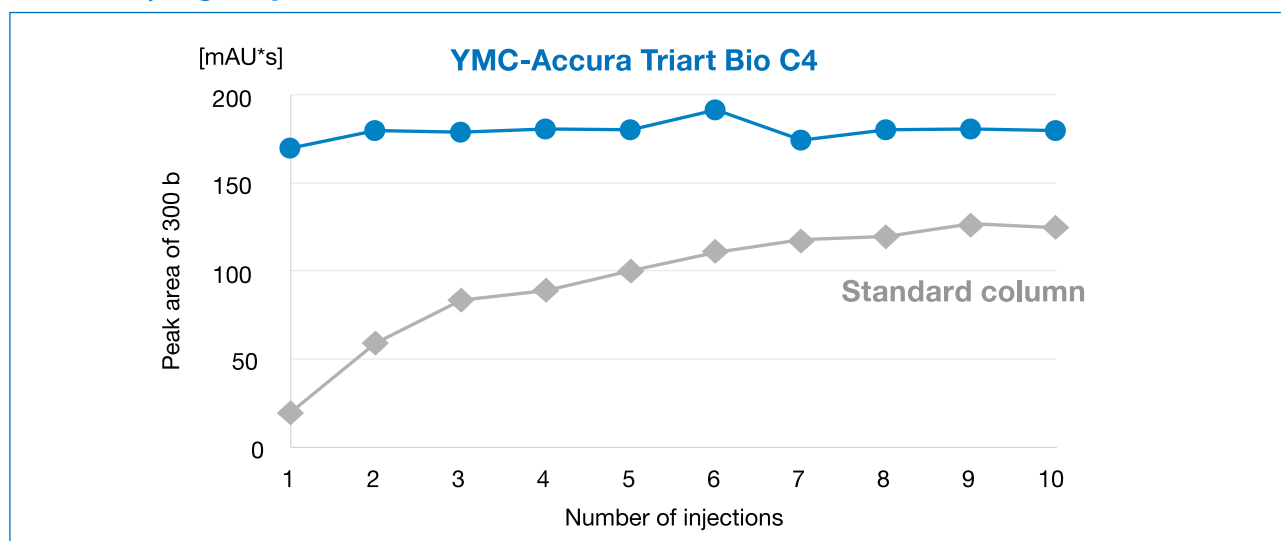
The YMC-Accura Triart Bio C18 column provides double peak heights and peak areas for the oligonucleotides compared to those for regular stainless-steel columns. YMC-Accura Triart columns enhance the sensitivity significantly and help to save precious samples without any loss.

No preconditioning required for reliable results from the 1st injection



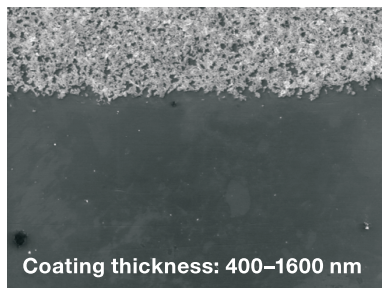
* Triethylammonium acetate

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.

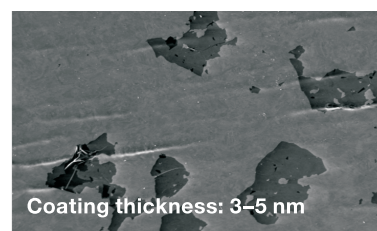
Durable bioinert coating



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.

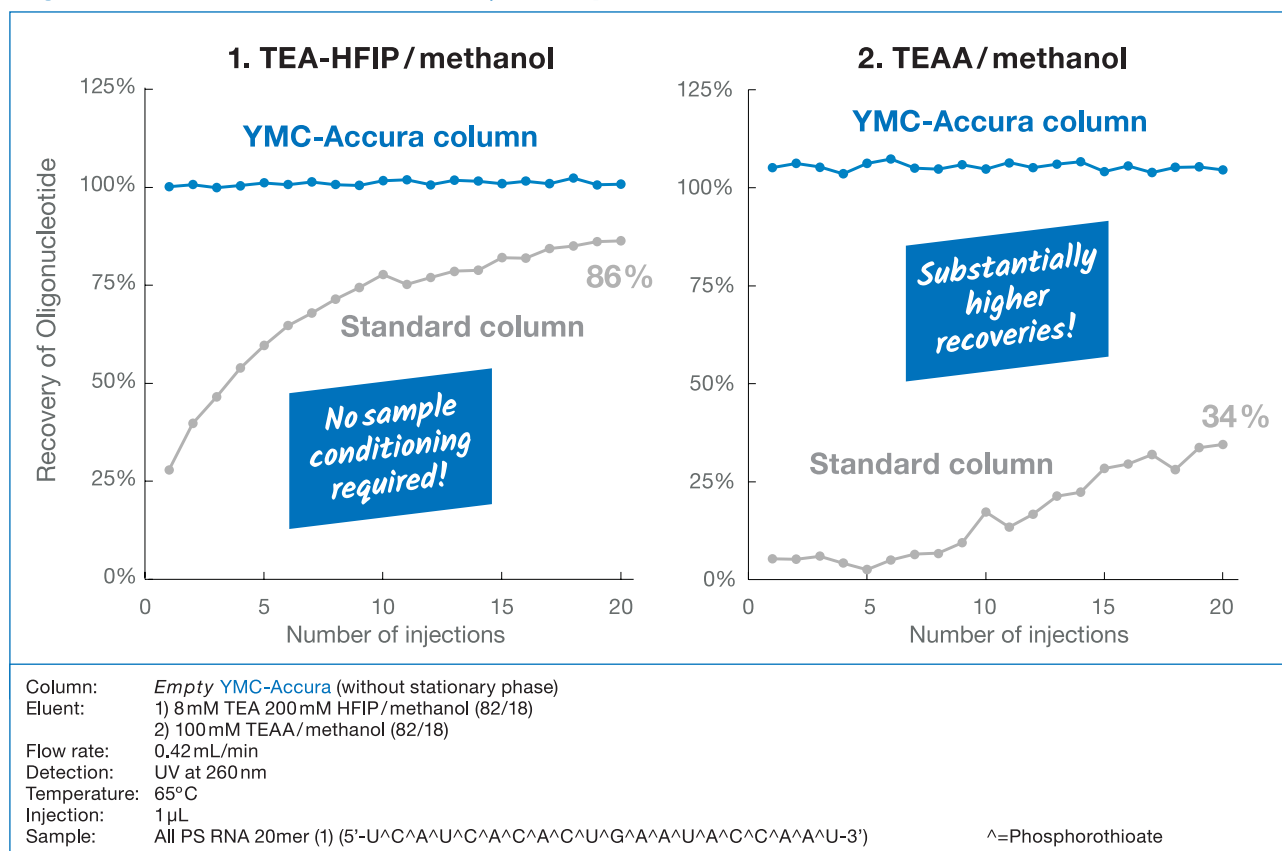
In order to demonstrate its robustness, a **YMC-Accura** column was packed multiple times. Even though this is quite a challenge for the column surface, the coating remains unaffected (SEM* picture: top area is bare steel for comparison).

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).



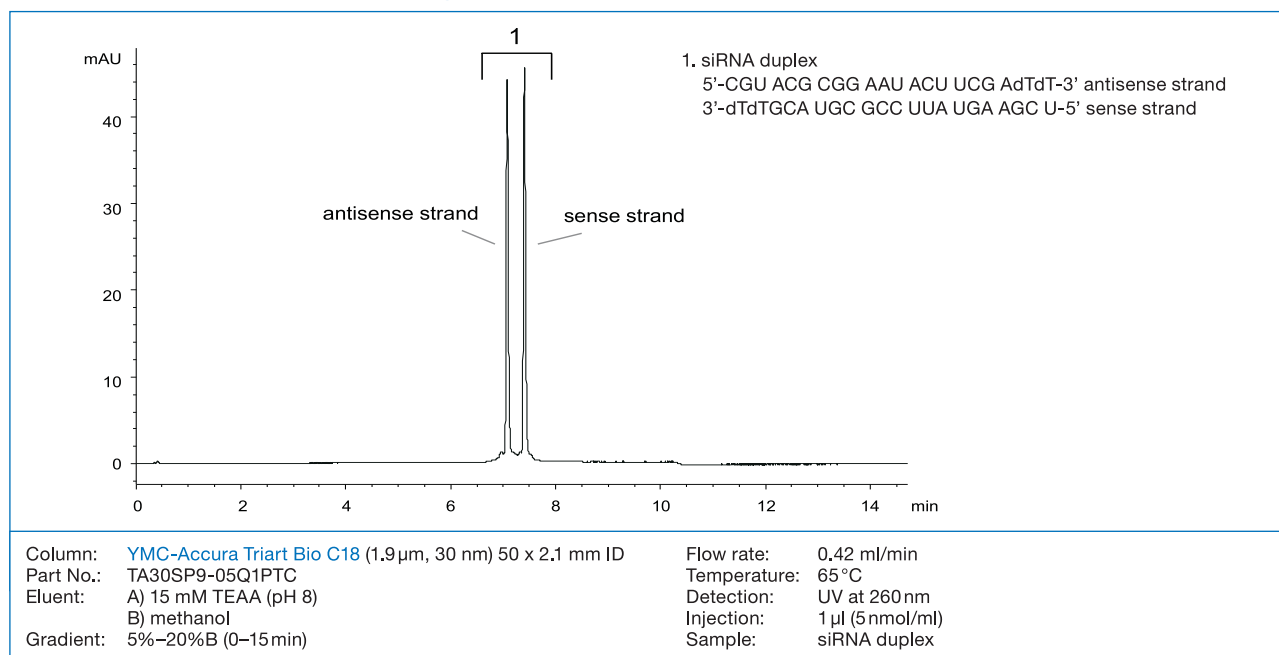
*Scanning Electron Microscope

High surface inertness without any adsorption

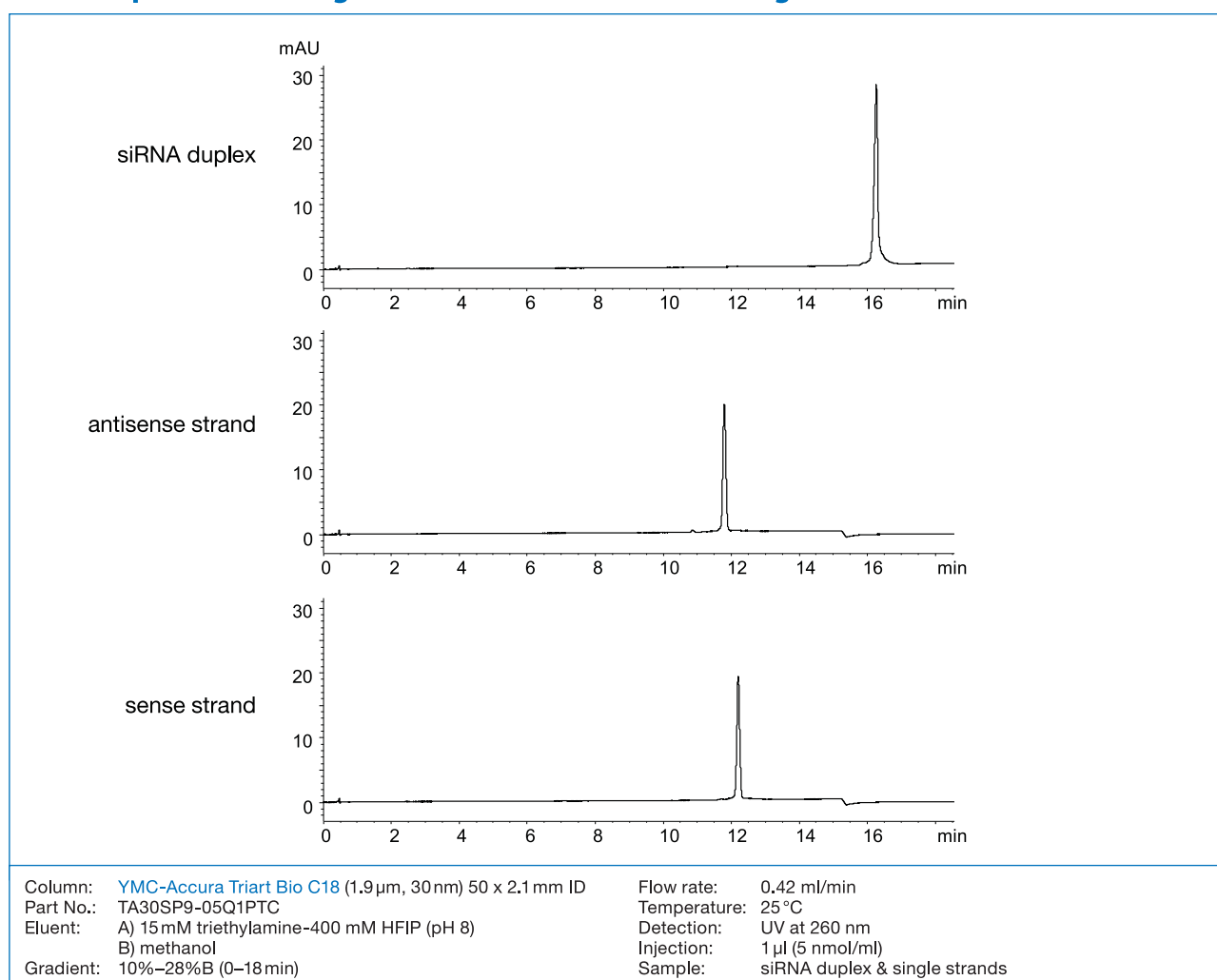


The **YMC-Accura** hardware with its inert surface area prevents adsorption of oligonucleotides using a range of different buffers. No sample conditioning is required. **YMC-Accura** columns further provide significantly higher recoveries and sensitivities that cannot be achieved with regular stainless 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



siRNA duplex and its single strands under non-denaturing conditions



YMC-Accura Triart 1.9 µm UHPLC columns (max. pressure 1,000 bar)

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 450 bar)

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

YMC-Accura Triart 5 µm HPLC columns (max. pressure 450 bar)

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

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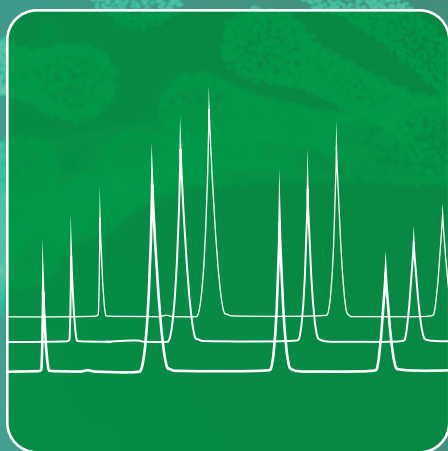
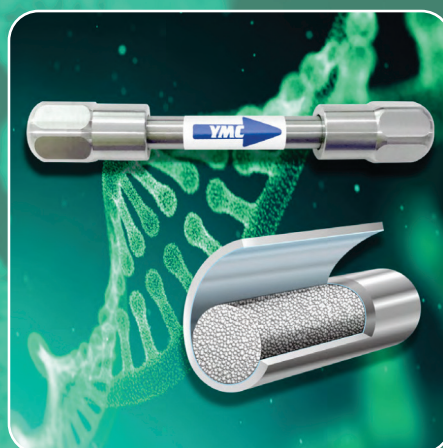
applicationlabssupport@ymcindia.com

YMC

NEW

Bioinert Coated Columns YMC Accura BioPro IEX

Oligonucleotides
Antibodies &
Proteins
LC/MS Analyses



Highly accurate results

Exceptional recoveries

High throughput

Excellent reproducibility

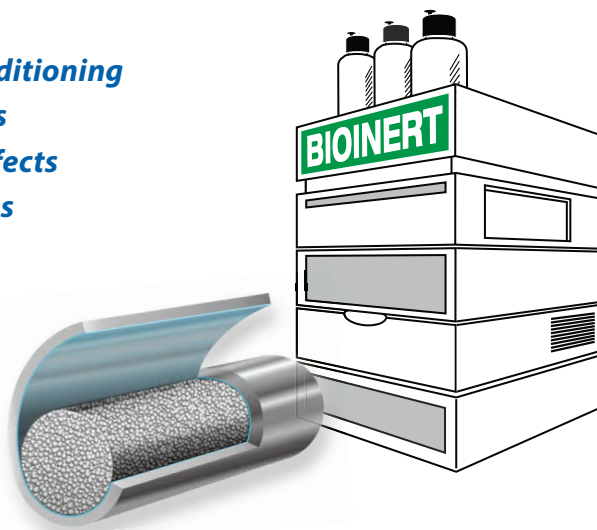
Non-porous YMC Accura BioPro IEX

Features

- Exceptionally high recoveries without preconditioning
- Very sharp peak shapes with high sensitivities
- Superior reproducibility and no carry-over effects
- High efficiency and rapid throughput analyses
- New rigid surface coated hardware

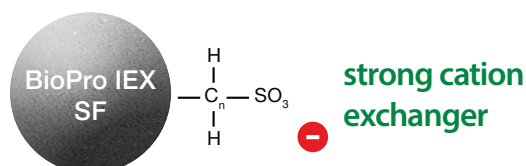
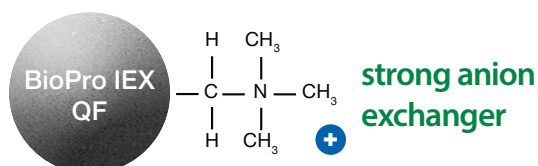
Ideal choice for

- Oligonucleotides, nucleotides
- Antibodies, proteins and peptides
- Sensitive LC/MS analyses

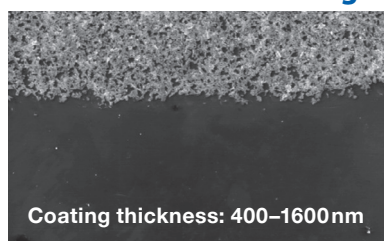


Specification

	YMC Accura BioPro IEX QF	YMC Accura BioPro IEX SF
Matrix	hydrophilic polymer (polymethacrylate)	hydrophilic polymer (polymethacrylate)
Particle size / μm	3, 5	3, 5
Pore size / nm	non-porous	non-porous
Charged group	$-\text{CH}_2\text{N}^+(\text{CH}_3)_3$	$-(\text{CH}_2)_3\text{SO}_3^-$
Counter ion	Cl^-	Na^+
Available pH range	2.0–12.0	2.0–12.0
Temperature range	4–60 °C	
Pressure limit	3 μm : 15–20 MPa, 5 μm : 10–30 MPa	
Column hardware	bioinert coated stainless steel	
Frit hardware		



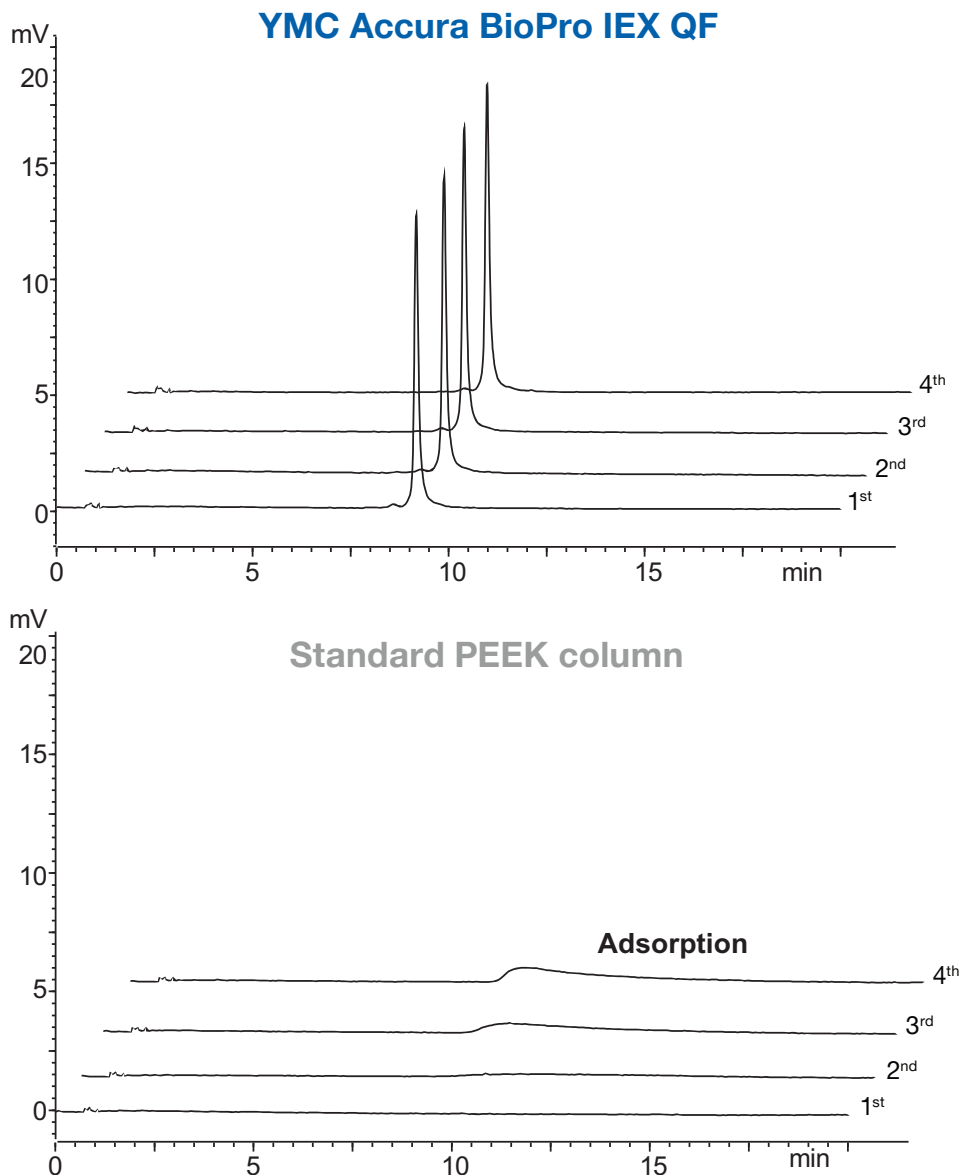
Durable bioinert coating



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).

*Scanning Electron Microscope

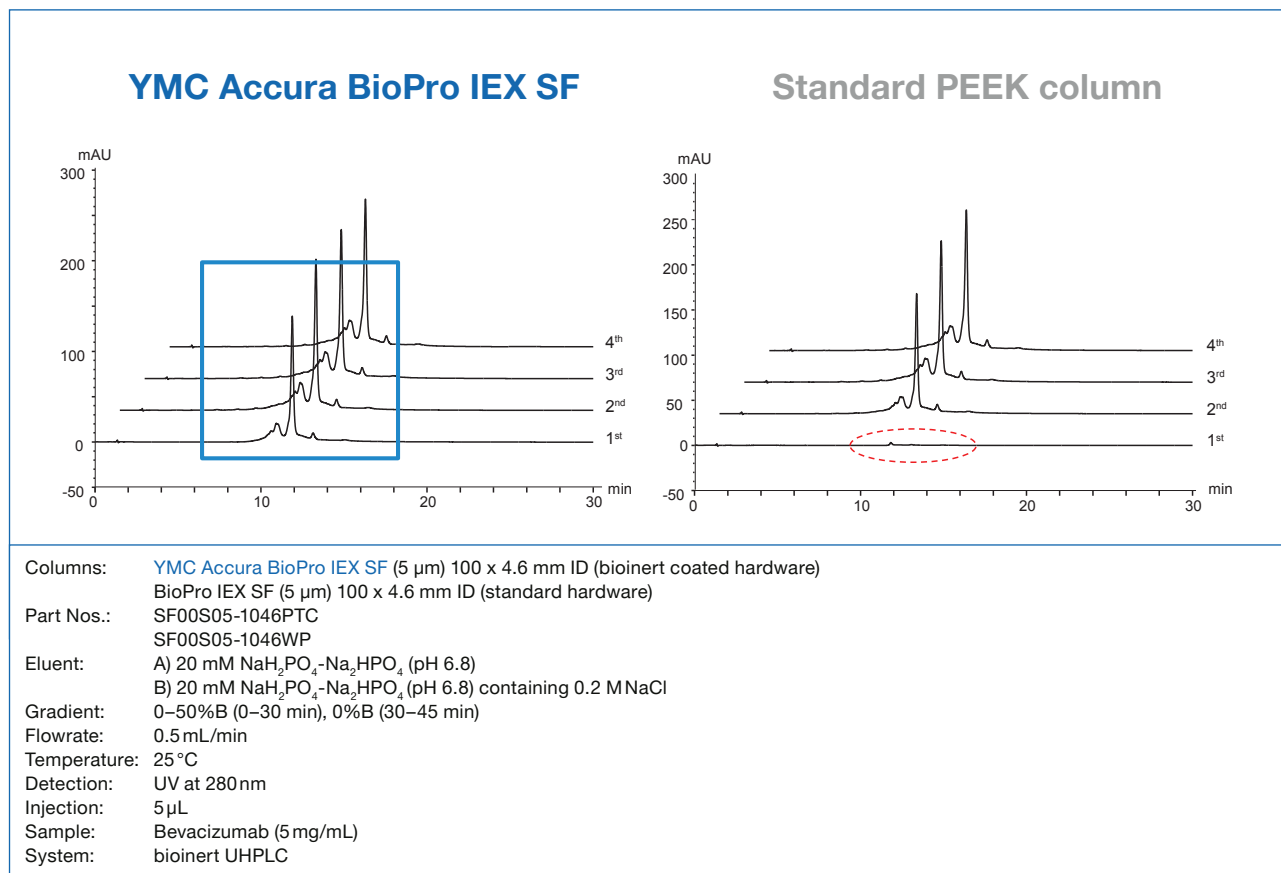
Sharp peaks and reliable recovery for oligonucleotides



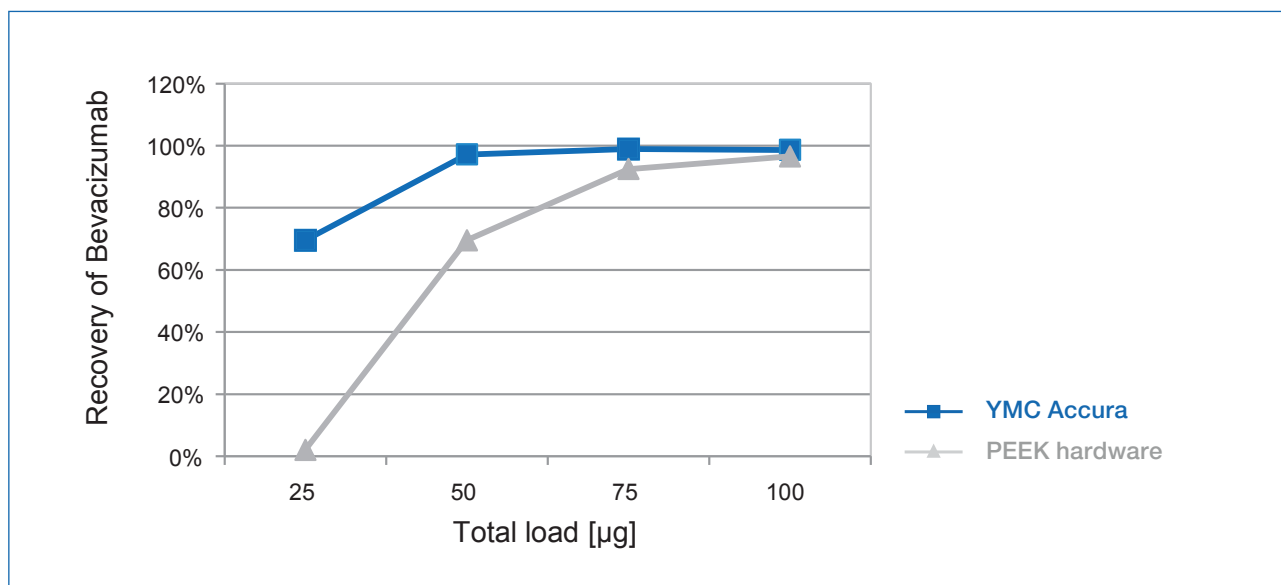
Columns: YMC Accura BioPro IEX QF (5 μ m) 100 x 4.6 mm ID (bioinert coated hardware)
 BioPro IEX QF (5 μ m) 100 x 4.6 mm ID (standard hardware)
 Part Nos.: QF00S05-1046PTC
 QF00S05-1046WP
 Eluent: A) 20mM Tris-HCl (pH 8.1)
 B) 20mM Tris-HCl (pH 8.1) containing 1.0M NaClO₄
 Gradient: 25–40%B (0–15 min), 40%B (15–20 min)
 Flow rate: 1.0 mL/min
 Temperature: 60 °C
 Detection: UV at 260 nm
 Injection: 4 μ L (5 nmol/mL)
 Sample: 21mer RNA
 System: bioinert HPLC

Oligonucleotides generally exhibit poor peak shape and therefore low recovery in AEX analysis, mainly due to adsorption onto the column hardware. YMC Accura BioPro IEX columns provide high recovery and very good peak shapes from the first injection. This makes YMC Accura BioPro IEX QF columns ideal for the analysis of oligonucleotides with reproducible results. The columns show stable peak areas from the 1st injection, so that no preconditioning is required.

No preconditioning required for reliable results



Higher recovery for low loading amounts

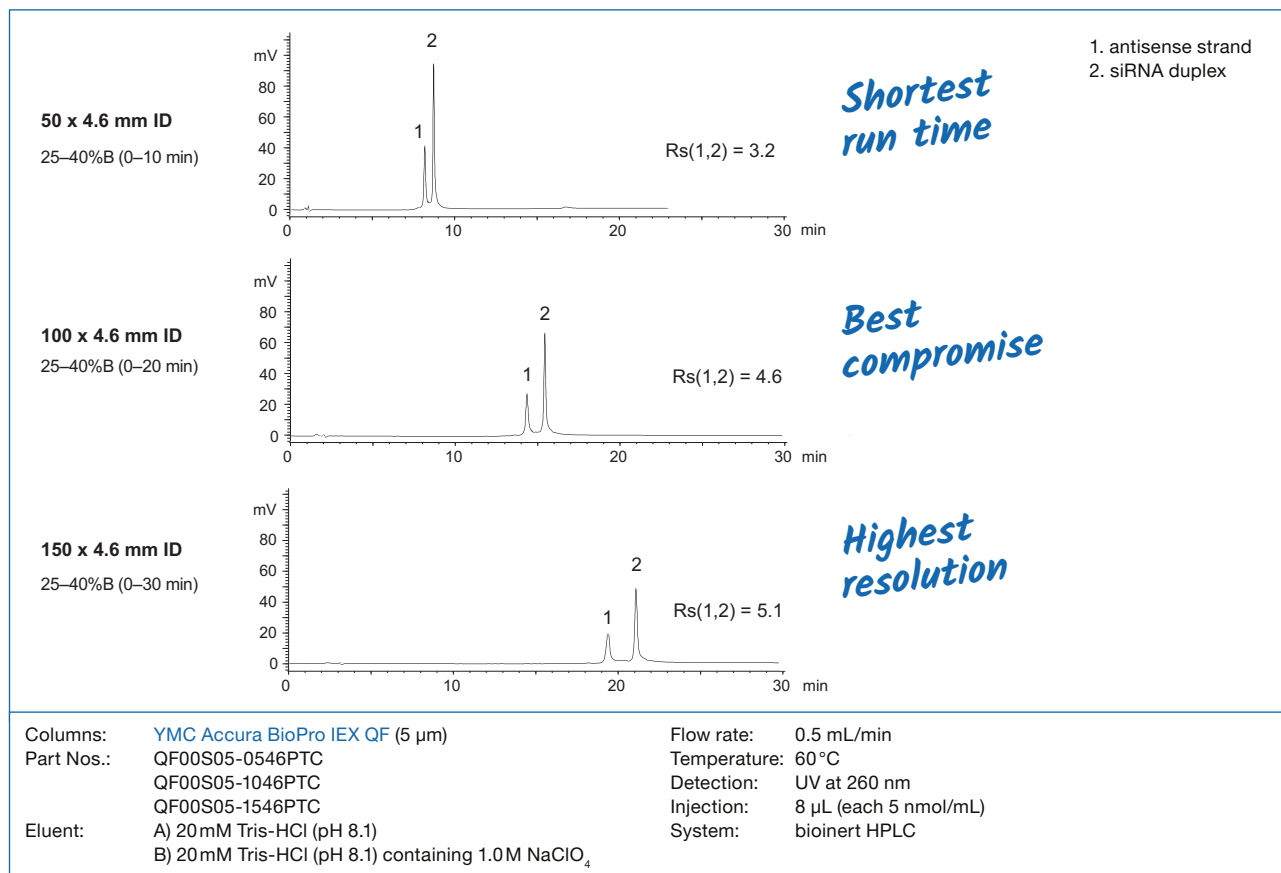


The high inertness of YMC Accura BioPro IEX columns also requires no preconditioning in CEX analyses. Especially at low loading amounts, YMC Accura BioPro IEX SF columns provide higher recoveries compared to the standard PEEK column.

Column dimensions according to analysis type

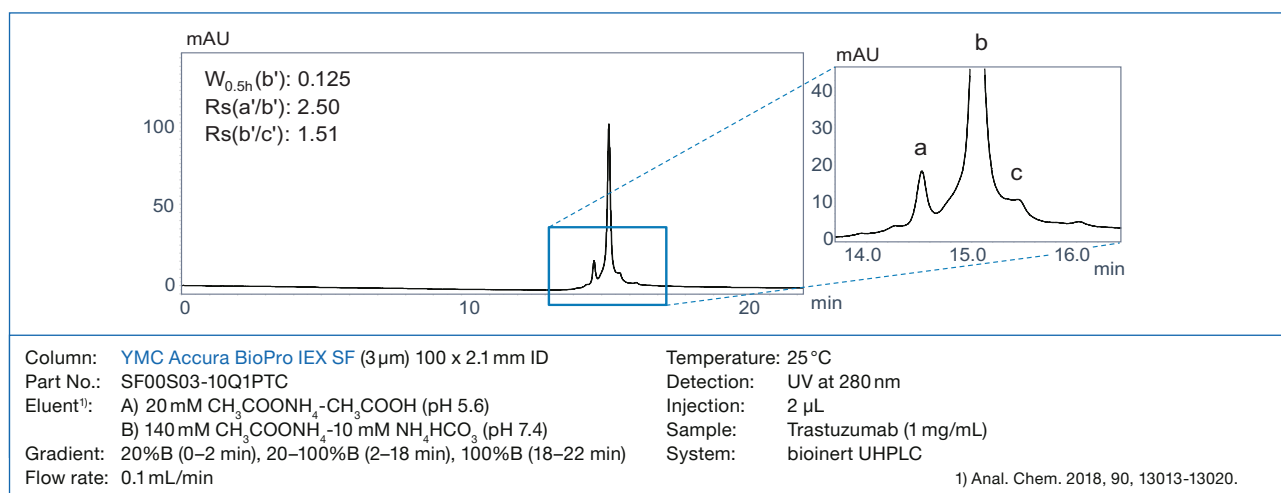
YMC

Different column lengths for each separation purpose



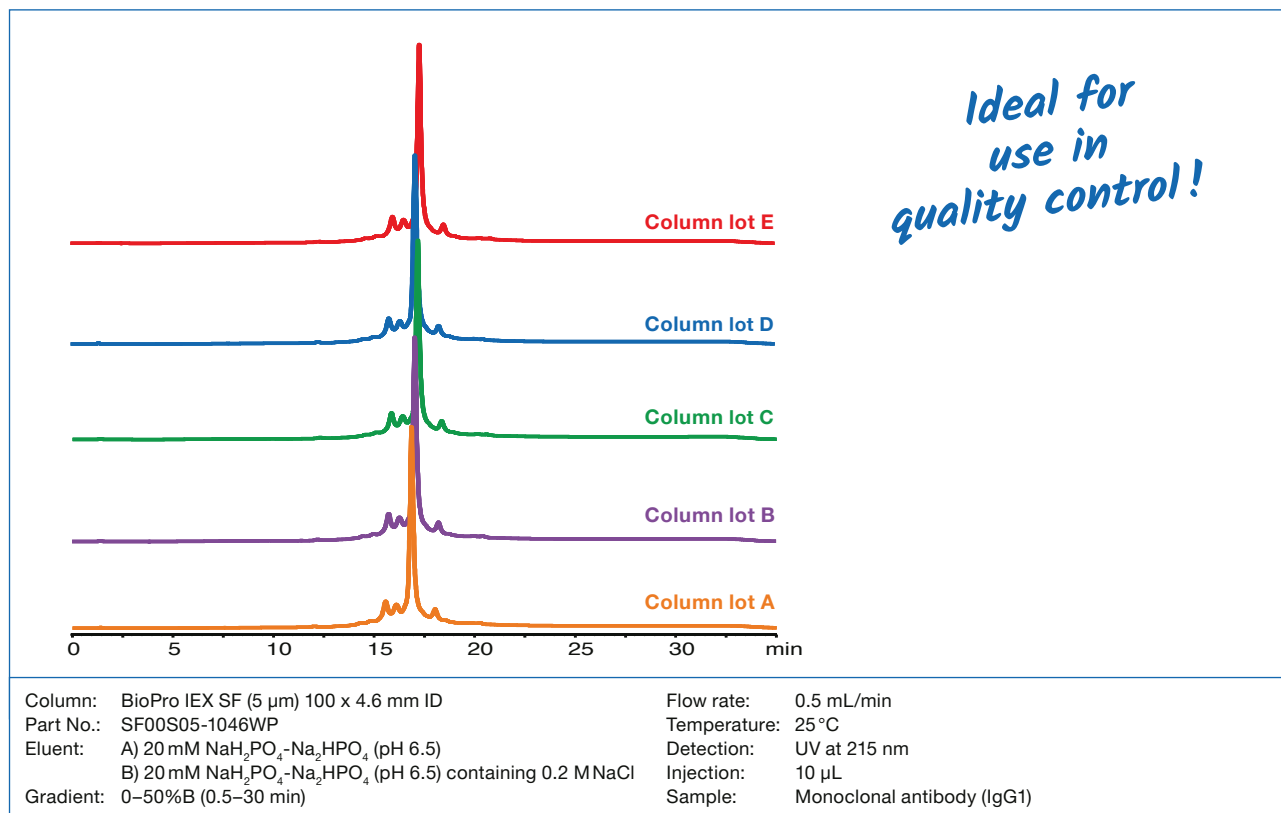
YMC Accura BioPro IEX columns are available with different lengths for specific purposes. Short columns provide short run times and high throughput, whilst retaining good resolution. Longer columns offer a higher resolution that is required for challenging samples, such as the separation of single- and double-stranded RNA.

Ideally suited for native IEX-MS



Smaller column IDs that allow lower flow rates and volatile mobile phases are necessities for coupling to mass detection. Such high sensitivity analyses are ideally performed using YMC Accura BioPro IEX columns. Another positive effect is the decreased solvent consumption and lower amount of sample required.

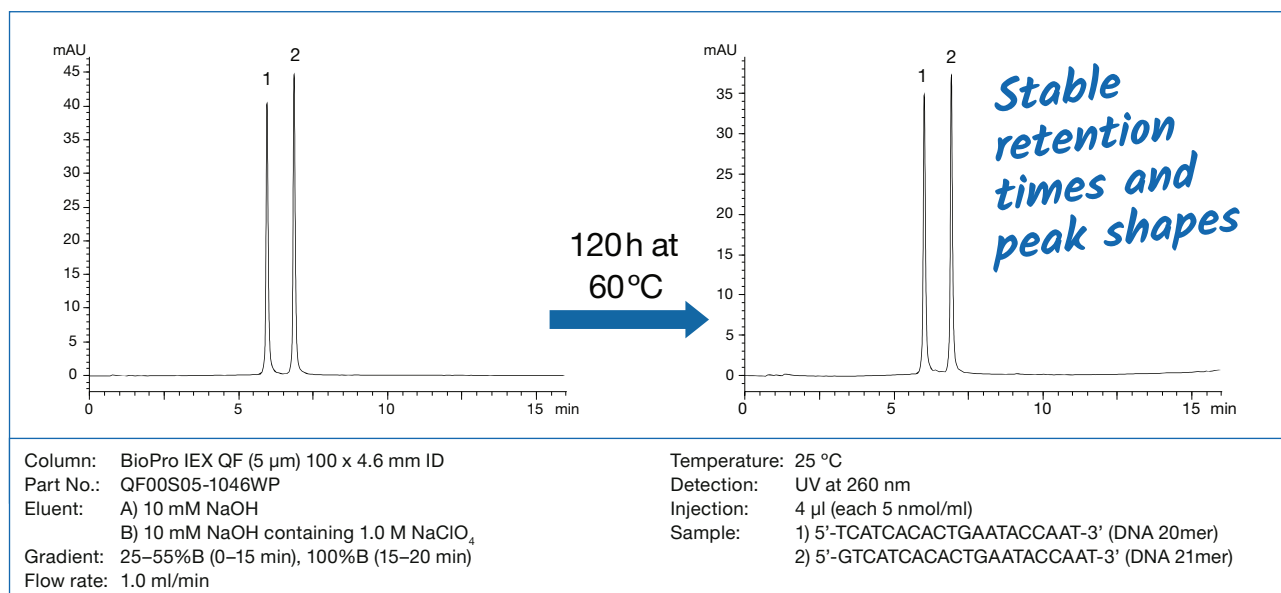
Excellent batch-to-batch reproducibility



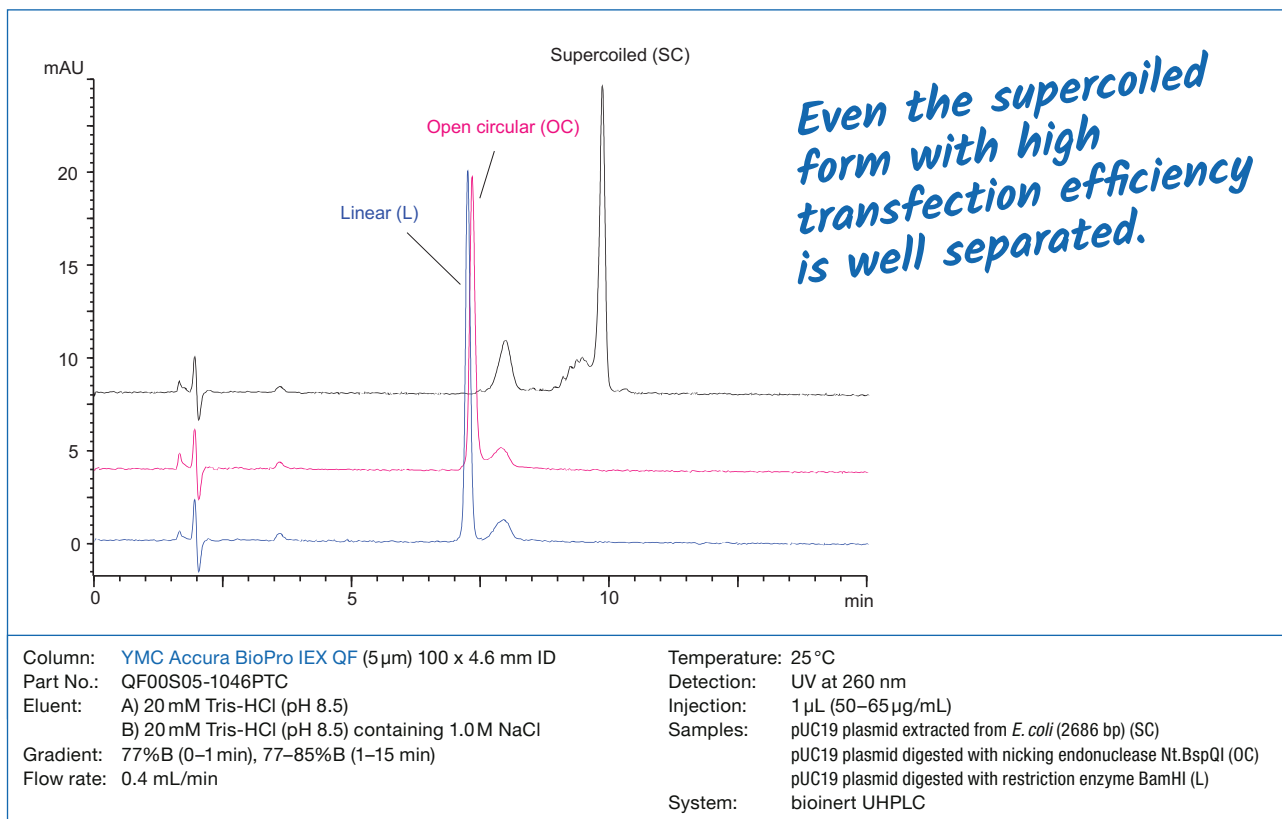
BioPro IEX columns exhibit excellent batch-to-batch reproducibility – as in this example – for mAb analysis with resolution of peaks for small charge variants. All gel batches are inspected by rigorous quality control tests and must meet the required criteria before release.

BioPro IEX columns are the best choice for the quality control of mAbs, proteins, oligonucleotides and other biopharmaceuticals.

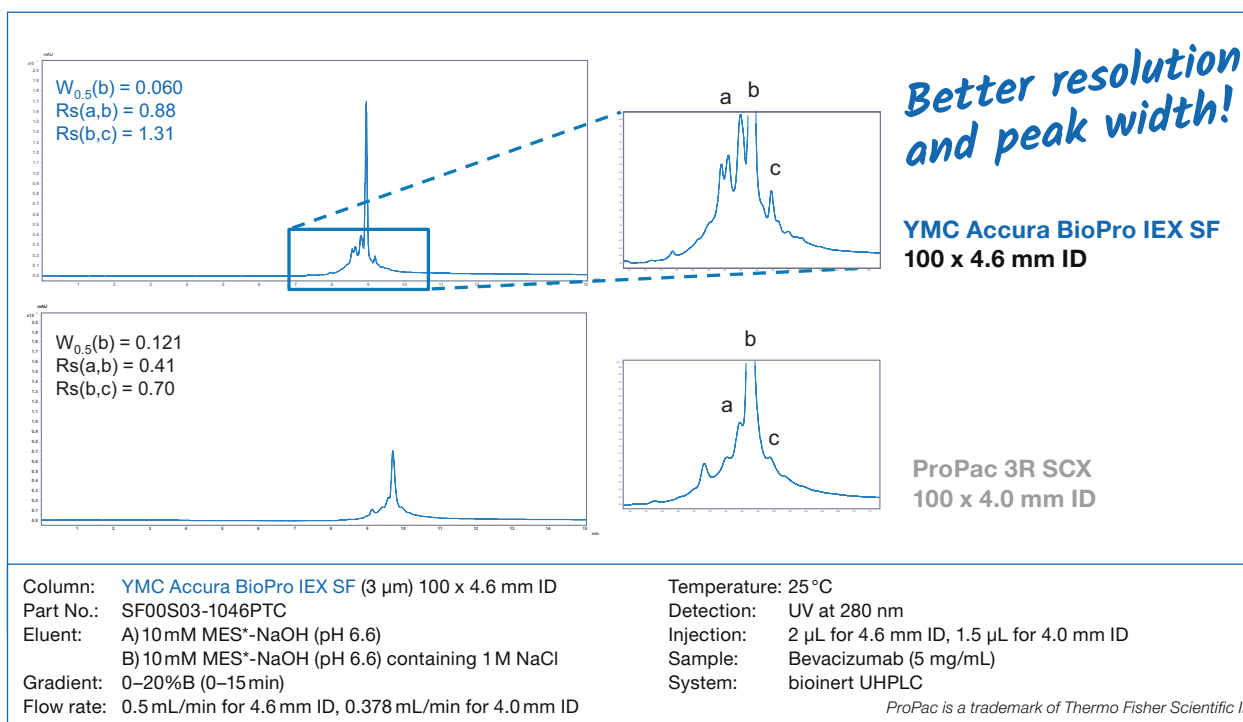
High temperature stability



Analysis of topological isomers of plasmids



Higher resolution for monoclonal antibody analyses



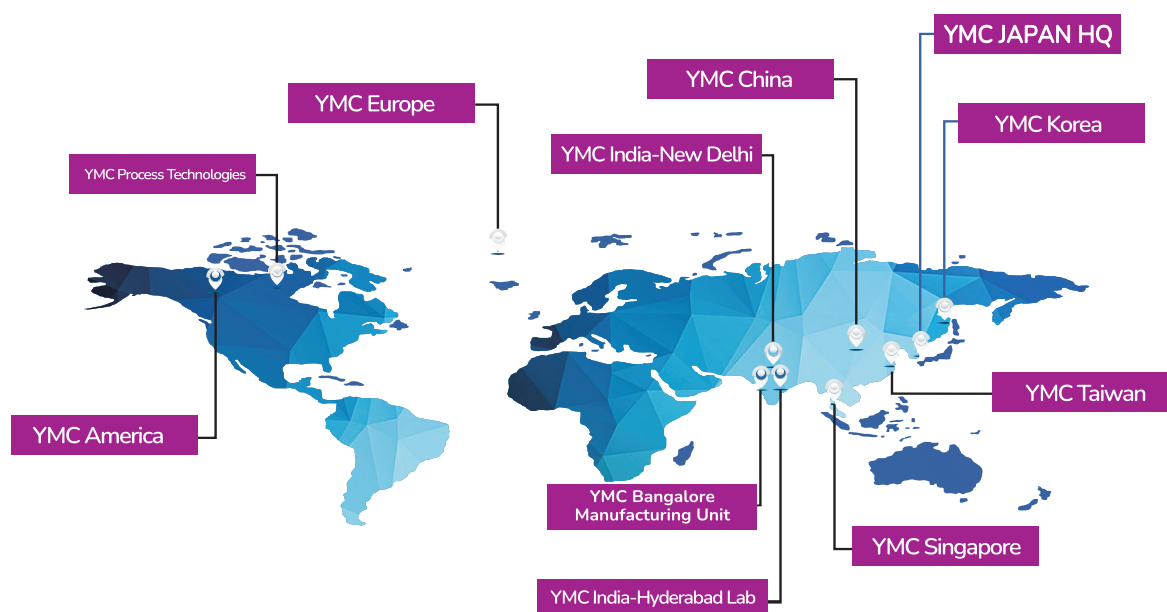
*2-(N-morpholino) ethanesulfonic acid

3 μ m non-porous analytical columns, bioinert coated hardware (max. pressure 15–20 MPa)

Phase	Column ID (mm)	Column length (mm)		
		50 (15 MPa)	100 (15 MPa)	150 (20 MPa)
YMC Accura BioPro IEX QF	2.1	QF00S03-05Q1PTC	QF00S03-10Q1PTC	QF00S03-15Q1PTC
	4.6	QF00S03-0546PTC	QF00S03-1046PTC	QF00S03-1546PTC
YMC Accura BioPro IEX SF	2.1	SF00S03-05Q1PTC	SF00S03-10Q1PTC	SF00S03-15Q1PTC
	4.6	SF00S03-0546PTC	SF00S03-1046PTC	SF00S03-1546PTC

5 μ m non-porous analytical columns, bioinert coated hardware (max. pressure 10–30 MPa)

Phase	Column ID (mm)	Column length (mm)			
		50 (10MPa)	100 (12MPa)	150 (18MPa)	250 (30MPa)
YMC Accura BioPro IEX QF	2.1	QF00S05-05Q1PTC	QF00S05-10Q1PTC	QF00S05-15Q1PTC	–
	4.6	QF00S05-0546PTC	QF00S05-1046PTC	QF00S05-1546PTC	QF00S05-2546PTC
YMC Accura BioPro IEX SF	2.1	SF00S05-05Q1PTC	SF00S05-10Q1PTC	SF00S05-15Q1PTC	–
	4.6	SF00S05-0546PTC	SF00S05-1046PTC	SF00S05-1546PTC	SF00S05-2546PTC



YMC India Pvt. Ltd.

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