



Oligonucleotide analysis

Oligonucleotide and mRNA analytical workflows

Delivering confidence from molecular insight to GMP release

Integrated RNA analytics across the development lifecycle

From early characterization to routine GMP release, oligonucleotide therapeutics demand analytical clarity, impurity control, and operational reliability. Our integrated workflows deliver scientific, regulatory, and operational confidence across oligonucleotide and mRNA modalities.

Scientific confidence

Resolve complexity. Understand your molecule with clarity.

Applications across oligonucleotides and mRNA:

- High-resolution separation of closely related species
- Sequence confirmation and structural characterization
- Impurity identification
- mRNA integrity assessment
- 5' cap efficiency and poly(A) tail heterogeneity analysis
- Early Critical Quality Attribute (CQA) identification

Regulatory confidence

Define, quantify, and defend your impurity profile.

Applications across oligonucleotides and mRNA:

- Sensitive detection of truncated species
- Impurity monitoring
- Sequence variant profiling
- Stability-indicating impurity methods

Operational confidence

Achieve reliable results. On time. Every time.

Applications across oligonucleotides and mRNA:

- Reproducible QC workflows
- Batch release testing
- Stability monitoring
- Compliance-ready data traceability

Advance your RNA therapeutic programs with integrated analytical workflows designed for clarity, compliance, and control. Learn more on our [Oligonucleotide Analysis Solutions](#) page or contact your Thermo Fisher Scientific representative to discuss your application requirements.

Product portfolio supporting RNA therapeutic workflows

Chromatography systems

Name	Part No.	Category
Thermo Scientific™ Vanquish™ Amplify™ UHPLC System	VQ-AMPLIFY	UHPLC system
Thermo Scientific™ Vanquish™ Diode Array Detector FG	VF-D11-A-01	Diode array detector
Vanquish Diode Array Detector Semi-Micro Inert Flow Cell, 7 mm	6083.0580	Flow cell for diode array detector
Thermo Scientific™ Vanquish™ Variable Wavelength Detector FG	VF-D40-A	Variable wavelength detector
Vanquish Variable Wavelength Detector Semi-Micro Bio Flow Cell, PEEK, 7 mm	6077.0300	Flow cell for variable wavelength detector

Chromatography columns and consumables

Name	Part No.	Category
Thermo Scientific™ SurePac™ Oligo RP MDi™ HPLC Column, 2.5 µm, 0.3 x 50 mm	43712-050332	Reversed-phase LC capillary column
SurePac Oligo RP MDi HPLC Column, 2.5 µm, 2.1 x 20 mm	43712-022132	Reversed-phase LC column
SurePac Oligo RP MDi HPLC Column, 2.5 µm, 2.1 x 50 mm	43712-052132	Reversed-phase LC column

Chromatography columns and consumables (continued)

Name	Part No.	Category
SurePac Oligo RP MDi HPLC Column, 2.5 µm, 2.1 x 100 mm	43712-102132	Reversed-phase LC column
Thermo Scientific™ SMART Digest™ RNase Column, RNase T1	60140-101	SMART Digest RNase T1 column
SMART Digest RNase Column, RNase A	60140-102	SMART Digest RNase A column
Thermo Scientific™ SMART Digest™ RNase Kit, RNase T1	60120-101	RNase kit for oligonucleotide mapping
SMART Digest RNase Kit, RNase A	60120-102	RNase kit for oligonucleotide mapping
Thermo Scientific™ SureSTART™ GOLD-Grade Polypropylene Screw Microvials with Fixed Conical Insert and 9 mm Cap Kits (Level 3)	6PKSV9GCST1	Chromatography autosampler vial and caps

Mass spectrometry

Name	Part No.	Category
Thermo Scientific™ ISQ™ EM Single Quadrupole Mass Spectrometer	ISQEM-ESI	Single-quadrupole mass spectrometer
Thermo Scientific™ Orbitrap™ Exploris™ MX Mass Detector	BRE725536	High-resolution mass spectrometer
Thermo Scientific™ Orbitrap™ Exploris™ 240 Mass Spectrometer	BRE725535	High-resolution mass spectrometer
Thermo Scientific™ Orbitrap™ Excedion™ Mass Spectrometer	BRE725574	High-resolution mass spectrometer

Purification systems

Name	Part No.	Category
Thermo Scientific™ KingFisher™ Flex Purification System, KingFisher with 96 PCR head	5400610	Purification system

Software and data systems

Name	Part No.	Category
Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS)	CHROMELEON7	Chromatography data system
Thermo Scientific™ BioPharma Finder™ Software for the characterization of biotherapeutics	BIOPHARMAFINDER5	Biopharma data analysis software

 Learn more at thermofisher.com/oligoanalysis

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