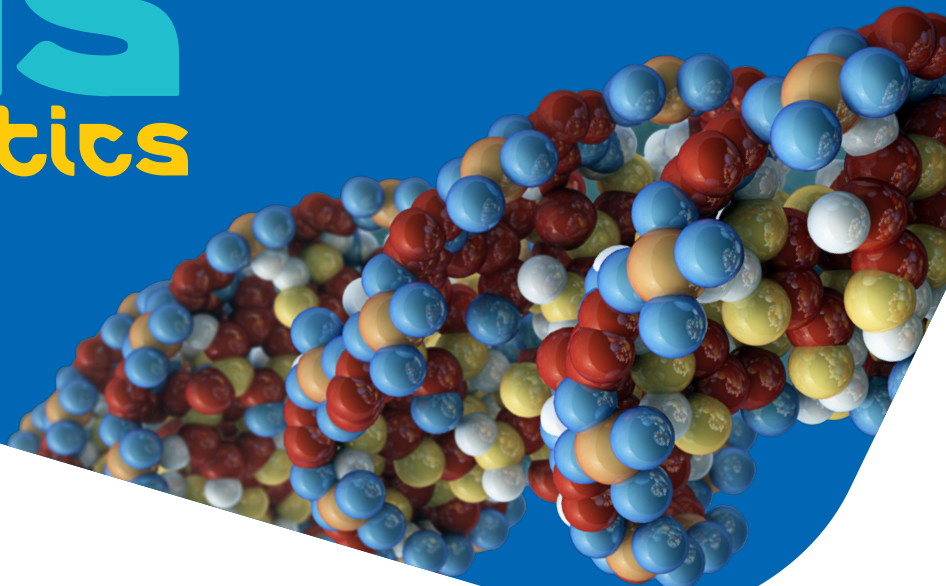


NEWS

on diagnostics

2020 Volume 5



In this issue...

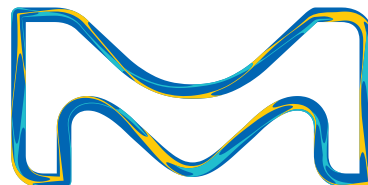
- Oligonucleotides
- Custom Oligos for Commercial Use
- OligoArchitect™ & OligoEvaluator™
- Next-Gen Sequencing Oligos
- IVD Oligonucleotide Manufacturing Centres of Excellence
- Onyx Quencher™ for Probe-Based qPCR
- Proligo® Phosphoramidites and Reagents for Oligonucleotide Synthesis

Welcome to the latest volume of News on Diagnostics in 2020. This edition will focus on how we can support your diagnostic research and manufacturing via our oligonucleotide and phosphoramidite portfolio.

Oligonucleotides

We are recognized as a leading supplier of custom and predesigned DNA products as well as molecular biology tools for the global life science community. Our ability to guarantee quality and performance is directly related to our comprehensive understanding of bioinformatics, various synthesis chemistries, and manufacturing platforms; and, our investment in analytical systems and experience in methods development. Choose from our comprehensive portfolio of products.

Whereas our research offering comes with breadth and speed ([SigmaAldrich.com/standardoligos](https://www.sigmaaldrich.com/standardoligos)), our commercial capabilities come with depth and consistency ([SigmaAldrich.com/compliantoligos](https://www.sigmaaldrich.com/compliantoligos)). Both product portfolios deliver high-quality oligonucleotides.



Custom Oligos for Commercial Use

We offer custom DNA Primers, qPCR Probes, and Next-Gen Sequencing Oligos for Life Science Research Tools, Molecular Diagnostics, and Laboratory Developed Tests. We can also perform component or complete kit manufacturing, including custom formulations, packaging, and private labelling. Learn about our manufacturing capabilities or request a consultation to determine which type of product best fits your needs. Watch the video at SigmaAldrich.com/oligosconsultation

Visit our Custom Oligos for Commercial Use website at SigmaAldrich.com/compliantoligos



Quality

Our ability to guarantee performance is directly related to our comprehensive understanding of oligonucleotide chemistry and synthesis platforms, our analytical systems, and our experience in method development.

Quality control is integrated into the entire manufacturing process. Key checkpoints of quality control include:

- Starting materials & chemistry
- Instrumentation & synthesis
- Sequence identity verification by mass spectrometry
- Purify verification by analytical HPLC
- Quantification by UV spectroscopy
- Final inspection
- OligoArchitect™ & OligoEvaluator™ Check out our OligoArchitect™ & OligoEvaluator™: Online, free, intuitive and single-click functionality with real-time support to simplify using primers and probes at the bench.

OligoArchitect™ Primer and Probe Design Tool

- We are pleased to offer OligoArchitect for all your primer and probe design requirements. OligoArchitect is complimentary and includes both our online design tool and our consultative service.
- We can support: qPCR assay designs for SYBR® Green I, Dual-Labeled Probes, Molecular Beacons, LightCycler® Probes and Scorpions® Probes. LNA® design is included.
- To try OligoArchitect Online v4.0, visit SigmaAldrich.com/probedesignonline
- Get your OligoArchitect™ brochure at SigmaAldrich.com/oligo-architect-online

OligoEvaluator™

- Oligo Analyzer Tool for Tm Calculation & Primer Analysis
- We are pleased to offer OligoEvaluator™, our online oligonucleotide sequence calculator that provides primer analysis values for PCR:
 - Base count
 - Molecular weight
 - Extinction coefficient
 - Oligo type
 - µg/OD at 260 nm
 - Length (base pairs)
 - Primer melting temperature Tm (°C)
 - GC content %
 - GC clamp
 - Run length (bp)
 - Secondary structure
 - Primer dimer check
 - BLAST sequence link

Our OligoEvaluator is easy to use, just select DNA or RNA, paste your sequence, and click calculate for the oligo analyser tool to return values.

All reported properties are available for export to a convenient Excel template. We also offer sequence analysis (molecular weight, melting temperature, primer dimer / hairpin search, etc., resuspension guidelines and dilution guidelines).

Visit SigmaAldrich.com/oligocalculator for access to this essential tool.

Did You Know?



Our Next-Gen Sequencing Oligos have:

- Custom universal and index (barcode) adapter oligos for major sequencing platforms
- Suitable purity (percent full-length sequence) to maintain sequence read integrity
- Low levels of cross-contamination to facilitate proper sequence assembly

Learn More at

SigmaAldrich.com/ngs-oligos

Download our white paper at

SigmaAldrich.com/technical-document-hplc

Custom iScale Oligos™

iScale Oligos DNA and siRNA are milligram and gram quantities of custom DNA and siRNA oligonucleotides manufactured to meet specialized needs.

DNA

Milligram and gram quantities of Custom DNA Oligos are for *in vivo*, high-throughput, and commercial projects (life science research tools, molecular diagnostics, and laboratory developed tests).

siRNA

Milligram and gram quantities of MISSION *in vivo* quality siRNA are superior for RNAi research in animals. We also manufacture other types of RNA, including miRNA and single-stranded RNA.

For more information on this service and customization, please visit

SigmaAldrich.com/custom-iscale-oligos

The Woodlands, Texas, & Haverhill, UK

We have two Centres of Excellence for IVD oligo manufacturing based in Texas, US and Haverhill, UK. Both facilities have extensive quality accreditation, and fast turnaround time for custom projects.

Expertise:

- On-demand manufacturing of DNA oligos for PCR & Sequencing workflows, including Same Day shipment for qualifying orders
- Low cross-contamination Index Adapters for NextGen Sequencing
- Variety of probe technologies for qPCR
- Mixing, pooling and aliquoting for turn-key kit manufacturing, including private labelling



The Woodlands, Texas, USA.
IVD Oligo Centre of Excellence



Haverhill, UK
IVD Oligo Centre of Excellence

Onyx Quencher™ for Probed-Based qPCR

We offer Onyx Quencher (OQ™), a proprietary quencher for probe-based qPCR, on a license, royalty, and restriction free basis. Similar to other dark quenchers, OQ™ emits heat instead of light and therefore offers an improved signal-to-noise ratio compared to traditional fluorescent quenchers, such as TAMRA™. Read our application note [SigmaAldrich.com/onyx-quencher-detection](https://www.sigmaaldrich.com/onyx-quencher-detection) to learn how an OQ™ Dual-Labeled Probe was used to develop an assay for the detection of *Schistosoma mansoni*, the causative agent of Schistosomiasis.



Features:

- Emits heat instead of light and therefore offers an improved signal-to-noise ratio compared to traditional fluorescent quenchers, such as TAMRA
- Offered license, royalty, and restriction free, making it ideal for the development of life science research tools, molecular diagnostics (MDx), and laboratory developed tests (LDTs)
- May be used for any application in addition to qPCR

Visit [SigmaAldrich.com/darkquencher](https://www.sigmaaldrich.com/darkquencher) to learn more.



Proligo® Phosphoramidites and Reagents for Oligonucleotide Synthesis

Let us support your entire oligonucleotide production workflow, from synthesis, cleavage and deprotection through to desalting, purification and QC analysis.

Many of our oligo synthesis columns and reagents are specifically configured to work with your synthesizer (ABI 3900, 39X, Expedite, MerMade, AKTA® and OligoPilot®) from R&D to production.

Our nucleic acid chemistry experts provide innovative solutions tailored to your specific challenges. We can meet your most demanding DNA and RNA synthesis requirements. Our regional facilities and warehousing provide increased flexibility throughout manufacturing, packaging, and distribution. We provide the industry's broadest offer of reagents for Oligonucleotide synthesis, including standard and specialty phosphoramidites, solid supports, columns, linkers and liquid formulations.

To find out more, or take a virtual tour of our Hamburg manufacturing facility at [SigmaAldrich.com/oligonucleotide-phosphoramidites](https://www.sigmaaldrich.com/oligonucleotide-phosphoramidites)

