

Custom DNA oligonucleotides for scalable PCR and qPCR supply



High performance primers and probes manufactured to specification for reliable large scale supply, high purity and on-time delivery

When PCR assays move from low-throughput to high-throughput, oligo supply is critical

Reliable repeat supply of oligonucleotides and batch consistency become essential as assays transition from routine small-scale use to higher volumes. Delays in supply or variability in quality directly impact downstream timelines.

Don't let oligo supply become a bottleneck

Requirements change as up-scaled PCR and qPCR workflows move beyond assay design and initial testing. Challenges arise with scale, consistency and reliable delivery of primers and probes.

Overcome oligo supply challenges with:

- Manufacturing capability that scales without requalification
- Repeatable and consistent quality across batches
- Predictable delivery aligned with internal timelines

High-purity DNA oligonucleotides manufactured to customer specifications

QIAGEN custom DNA oligos are manufactured to defined customer specifications for workflows that require reliable performance at scale. High-purity primers and probes support PCR, qPCR and dPCR applications with a wide range of sequences, formats and production volumes.

Large selection of modifications for various oligonucleotides

We support a wide range of reporter and quencher combinations, including dual labeled and double quenched probe designs for qPCR. We can guide you with assay design and dye assignment to match your target nucleic acid and controls.

Table 1. Dual-labeled probes

Spectral scale (nm)	Reporter			Quencher					
	5' Reporter	Ex _{max}	Em _{max}	Dabcyl	EDQ	TAMRA	BHQ1	BHQ2	BHQ3
	Coumarin 047	387	470						
	Chromis 500	495	506						
	FAM	496	520	Ab _{max} 478 nm					
	DY510XL	519	530	Range 400-550 nm					
	VIC	526	543						
	JOE	521	546						
	Yakima Yellow	530	549						
	HEX	535	556						
	CAL fluor® Orange 560	538	559			Ab _{max} 557 nm	Ab _{max} 534 nm		
	Chromis 530	529	561			Range 520-570 nm	Range 480-580 nm		
	DY-530	539	561		Ab _{max} 522 nm				
	Cy3	547	563		Range 390-625 nm				
	Quasar® 570	548	566						
	ATTO 550	554	576						
	TAMRA	557	580						
	ATTO 565	564	590						
	Texas Red	582	600						
	ROX	585	606						
	CAL fluor® Red	590	610						
	Chromis 570	573	612						
	Chromis 600	593	624						
	Chromis 494	494	628						
	Chromis 630	629	646						
	ATTO 647N	646	662						
	Cy5	646	662						
	Quasar 670	647	670						
	Quasar 705	690	705						
	Cy5.5	683	707						
								Ab _{max} 579 nm	
								Range 560-670 nm	
									Ab _{max} 650 nm
									Range 550-750 nm
									Ab _{max} 672 nm
									Range 620-730 nm

More than synthesis: Person-to-person support throughout your project

How we support your project

- **Dedicated ordering process** with specification and feasibility review
- **Project management support** coordinating manufacturing, quality and logistics
- **Direct technical support** for assay design, modifications and troubleshooting
- **Reliable timelines** with on time delivery against confirmed dates

Flexible supply for ongoing demand

For customers with ongoing demand, oligonucleotides can be manufactured for stock and stored under defined conditions. Orders can then be released as needed, supporting flexible usage.

Table 2. Quality levels to match your PCR, qPCR and dPCR application

	Non-GMP*	GMP†
Quality Management System compliance	ISO 9001	ISO 13485: 2016 and 21 CFR part 820
Purification method	Desalted or HPLC	Desalted or HPLC
Traceability	Standard	Full
HPLC column	Standard	Dedicated
Clean room	Nondedicated	Dedicated
Documentation‡	Product batch record	Product batch record with full traceability

* Oligonucleotides are considered raw materials or components intended for further use by the end customer. They are not considered finished products and cannot be used as finished products.

† GMP-grade oligonucleotides in this context means that they are manufactured and released in alignment with established quality requirements under ISO 13485 and US QSR (21 CFR 820). They have not been manufactured under the applicable Current Good Manufacturing Practice (cGMP) regulations for pharmaceuticals. [AS2.1]

‡ Available upon audit/request.



Do you want more information on oligo specifications, scale, timelines and supply models? **Talk to our custom oligonucleotide team**



For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit instructions for use or user operator manual. QIAGEN instructions for use and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services (or your local distributor).

The BHQ®, CAL Fluor® and Quasar® dyes and products incorporating them are to be used for research & development purposes only and may not be used for any commercial, clinical, in vitro diagnostic or other use. Products incorporating these dyes are subject to the proprietary worldwide rights of Biosearch Technologies, Inc. and are made and sold under license from Biosearch Technologies, Inc.

Trademarks: QIAGEN®, Sample to Insight® (QIAGEN Group); BHQ®, CAL Fluor®, Quasar® (Biosearch Technologies, Inc.).

QPRO-19828 07/2026

© 2026 QIAGEN, all rights reserved. Registered names, trademarks, etc. used in this document, even when not specifically marked as such, may still be protected by law.