Synthesis scale vs Guaranteed yield

Eurogentec

The **synthesis scale** refers to the **amount of raw material** used to start the synthesis of oligonucleotides.

The **yield** corresponds to the amount of **final product** recovered at the end of the synthesis and purification processes.

The length, the sequence, the type/number of modifications and the purification, strongly influence the reaction yield.

Based on that, Eurogentec defined a minimum guaranteed yield in nmoles for all product categories (see table below).

The minimum guaranteed yields represent only a reference because the delivered quantities may vary.

			Synthesis scale (nmol)																																					
			10			40					200						1000						2500				5000				10000				20000			
Range	Product	Length	SePOP	RP-Cartridge•Gold™	HPLC (RP or IEX)	SePOP	RP-Cartridge•Gold™	HPLC (RP or IEX) [6]	PAGE [3]	Dual HPLC [6]	SePOP	RP-Cartridge•Gold™	HPLC (RP or IEX), in vivo [6]	PAGE [3]	Dual HPLC [6]	UltraPureGold™	SePOP	RP-Cartridge•Gold™	HPLC (RP or IEX), in vivo [6]	PAGE [3]	Dual HPLC [6]	UltraPureGold™	SePOP	HPLC (RP or IEX) [6]	Dual HPLC [6]	PAGE [3]	SePOP	HPLC (RP or IEX) [6]	Dual HPLC [6]	PAGE [3]	SePOP	HPLC (RP or IEX) [6]	Dual HPLC [6]	PAGE [3]	SePOP	HPLC (RP or IEX) [6]	Dual HPLC [6]	
Custom Oligonucleotides	Non-Modified (DNA only)	5-9	–	–	–	–	–	–	–	–	60	50	30	20	15	–	180	100	80	40	40	–	450	200	100	100	900	400	200	200	1800	800	400	400	–	–	–	
		10-19	5	4	–	20	16	10	4	3	70	60	45	30	23	15	200	140	100	70	50	30	500	250	125	125	1000	500	250	250	2000	1000	500	500	4200	2100	1050	
		20-39	5	4	–	20	16	10	4	2	60	50	30	20	15	10	190	120	90	40	45	20	475	225	115	115	1000	500	250	250	2000	1000	500	500	4200	2100	1050	
		40-59	3	2	–	10	8	5	2	1	30	25	15	12	7	6	115	60	45	20	20	12	285	110	55	55	600	230	115	115	1200	460	230	230	2500	1000	500	
		60-79	2	2	–	8	6	–	2	–	20	18	–	8	–	4	75	40	–	14	–	8	185	–	–	40	350	–	–	90	750	–	–	180	1500	–	–	
		80-99	–	–	–	–	–	–	1	–	–	–	–	3	–	2	–	–	–	5	–	3	–	–	–	30	–	–	–	40	–	–	–	80	–	–	–	
		100-139	–	–	–	–	–	–	–	–	–	–	–	2	–	1	–	–	–	3	–	2	–	–	–	10	–	–	–	20	–	–	–	40	–	–	–	
	Modified [1] (including DNA, RNA, 2' O-Me RNA, 2' O-MOE RNA, LNA® and phosphorothioate linkages)	5-9	–	–	–	–	–	3	–	–	–	–	12	–	6	–	–	–	25	–	12	–	–	60	30	30	–	125	60	60	–	250	125	125	–	–	–	
		10-19	–	–	–	12	6	5	4	1	35	20	17	15	8	–	70	40	35	30	15	–	175	90	45	45	500	190	95	95	1000	380	190	190	2000	760	380	
		20-59	–	–	–	8	5	4	3	1	20	15	12	10	6	–	45	35	25	20	12	–	100	65	30	30	300	135	65	65	600	275	130	130	1200	600	275	
		60-139	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	15	–	–	–	30	–	–	–	60	–	–	–	
Real-Time qPCR Probes	Double-Dye probes [2]	8-45	–	–	<2[4]	–	–	4	–	–	–	–	12	–	–	–	–	–	25	–	–	–	–	65	–	–	–	135	–	–	–	275	–	–	–	600	–	
	Molecular Beacons	28-50		–		–	–	1	–	–	–	–	4	–	–	–	–	–	12	–	–	–	–	30	–	–	–	65	–	–	–	130	–	–	–	275	–	
	MGB Taqman Probes	8-30	Delivered quantity: 6, 20 or 50 nmol																																			
RNAi Oligonucleotides			Delivered Quantity (nmol)																				On Request															
	siRNA Duplexes Non-Modified [5]	21-27	7	–	3	22	–	12	–	–	60	–	40	–	–	–	200	–	80	–	–	–																
	siRNA Duplexes Modified [1]	21-27	7	–	3	22	–	12	–	–	60	–	40	–	–	–	200	–	80	–	–	–																
NGS Oligonucleotides	RP-Cartridge purified	20-85	Minimum delivered quantity: 10 nmol																																			
	RP-HPLC purified																																					
Universal Primers	-	15-38	–	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		–	–	–		–	–	–		–	–	–
Unique Oligonucleotides	-	2-225	On request - please contact us at unique@eurogentec.com																																			

Minimum Guaranteed Yield

Post-synthesis modifications may yield 50% less than the above stated values.

Table: (1) Between 5 and 59 bases length single-modified Oligonucleotides. Eurogentec does not provide minimum guaranteed yield for modified oligonucleotides longer than 59 bases. Post-synthesis modifications are not compatible with SePOP and RP-Cartridge•Gold™ purification. A lower yield may result from poly-modifications and/or strong secondary structures.

(2) Double-Dye probes only result from the combination of a 5' fluorescent dye and a 3' quencher.

(3) Except for oligonucleotides with GC-rich regions.

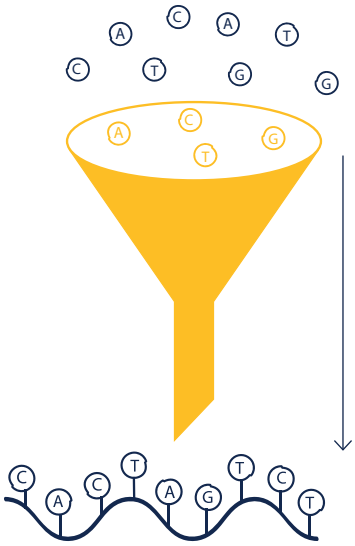
(4) Only available for Double-Dye FAM-TAMRA 10 nmol and FAM-BHQ1® 10 nmol.

(5) Non-modified siRNA's only include 3' dTdT overhang.

(6) Please be aware that all purifications containing an IEX-HPLC are limited to a length up to 39 bases.

List of the post-synthesis modifications

> 5' Alexa Fluor® (350, 430, 488, 500, 514, 532, 546, 555, 568, 594, 610, 633, 647, 660, 680, 700 and 750)
> 5' ATTO (390, 425, 465, 488, 495, 520, 532, 550, 565, 590, 594, 610, 620, 633, 635, 647N, 655, 680, 700, 725 and 740)
> 5' BODIPY® (530/550, FL and TR)
> 3', 5' and dT Cascade Blue®
> 3' and dT Cy® (3, 3.5, 5 and 5.5)
> 3', 5', dR and dT Digoxigenin
> 5' Dragonfly Orange®
> 5' DY-(681, 781 and 782)
> dR 6-FAM
> dR and dT HEX
> 5' HiLyte™ Fluor (405, 488, 555, 594, 647, 680 and 750)
> 3', dR and dT JOE
> 5' Marina Blue®
> 5' Oregon Green® (488 and 488 X)
> 5' Pacific Blue™
> 3' QXL®
> 3', 5', dR and dT Rhodamine 6G
> 3', 5', dR and dT ROX
> 5' TAMRA
> dR and dT TET
> 3', 5', dR and dT Texas Red®



Synthesis Scale

Oligo Manufacturing
Coupling Yield
Oligo length
Purification
Quality Control
Quantification
Fill&Finish

Minimum Guaranteed Yields

RES-GU-EN-MINIMUM-GUARANTEED-YIELD-DEC2022-V5