Oligonucleotide synthesizers that take you from start to finish

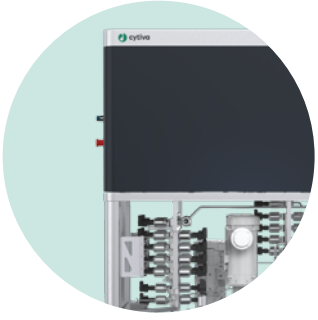
Guide for Cytiva synthesizers and columns

Robust and scalable oligo synthesis

We offer systems for automated oligonucleotide synthesis at a range of scales supporting easy process development, optimization, scale up and transfer, reducing time to your next milestone.

Our oligonucleotide synthesizers are the result of more than 30 years of collaboration with leading oligonucleotide pharma.

The goal is to design synthesizers that support a robust and reliable oligonucleotide process and transfer with high yield and quality.



"We do R&D to reduce costs and increase purity and yield; we do not want to think about hardware and software, and certainly do not want to use unstable software. Having Cytiva equipment installed at our facility and at our partner's facility is a critical part of our business."

Max Moore, Ionis Pharmaceuticals Inc.

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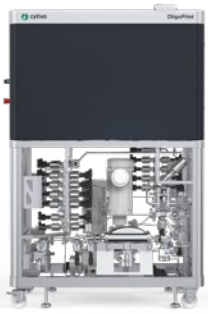
Oligonucleotide synthesizers

Find the system that matches your needs

Compact, fully automated system for small-scale synthesis and process development



Robust oligonucleotide synthesizer for early to mid-phase clinical trials

Large-scale systems for late-phase clinical trials and commercial production

		ÄKTA oligosynt™ synthesizer	OligoPilot™ synthesizer	OligoProcess™ synthesizer
Footprint (W × H × D)		• 535 × 630 × 470 mm The space required for amidites, and reagents not included in the footprint. • 700 × 630 × 540 mm fully equipped	1200 × 1907 × 688 mm	• 2025 × 2095 × 1400 mm (60 to 400 mmol synthesizer) • 1625 × 2095 × 1400 mm (100 to 1800 mmol synthesizer)
Nominal synthesis scale		10 µmol to 12 mmol	10–150 mmol	• 60–400 mmol • 100–1000 mmol • 100–1800 mmol*
Amidite inlets		16	17	17 or 24
Reagent and solvent inlets		14	10	14
Waste outlets		11	4	4
Piping material		FEP, PEEK, ETFE	Stainless steel	Stainless steel
Recirculation		Yes	Yes	Yes
Sensors	Air	Yes	No	No
	Conductivity	Yes	Yes	Yes
	Density	No	Yes	Yes
	Pressure	Yes	Yes	Yes
	UV	Yes	Yes	Yes
	Temperature	Yes	Yes	Yes
Flow meter		Optional through I/O box	Yes, mass flow	Yes, mass flow
Heat exchanger		Option to connect multiple heat exchangers	Yes, pipe in tube	Optional, pipe in tube
Number of pumps		2	2	3
Maximium flow rate		300 mL/min	2000 mL/min	• 60–400 mmol: 8 L/min • 100–1000 mmol: 30 L/min • 100–1800 mmol*: 50 L/min
Maximum operating pressure		25 bar g	10 bar g	10 bar g
Inert gas supply pressure		5–10 bar g	N/A	N/A
Recommended inlet pressure		0.25-0.35 bar g	0-0.2 bar g	0-0.2 bar g
Air supply pressure		N/A	6–10 bar g	6–10 bar g
Instrument air consumption*		N/A	< 50 NL/min	< 50 NL/min
Purge air consumption†		N/A	500 NL/min	500 NL/min
Power supply		110–230 VAC, 50–60 Hz	100–230 VAC, 50–60 Hz	According to local standard
Certificates		N/A	ATEX Zone 2 / NFPA 79 Class1 Div. 2‡	ATEX Zone 2 / IECEx Zone 2 / NFPA 79 Class1 Div. 2‡
Degree of protection		N/A	IP55	IP55
Software		UNICORN™ 7.8 or higher	UNICORN 7.8 or higher	UNICORN 7.8 or higher

*Higher scales are available upon request
†Non-condensing, particle and oil-free
‡Local regulations available upon request

Columns for oligonucleotide synthesis

		ÄKTA oligosynt synthesizer	OligoPilot synthesizer	OligoProcess synthesizer
Scale at 350 µmol/g				
Small stainless steel column 1.2 mL*†	10—50 µmol	■		
Small stainless steel column 6.3 mL*	0.2 mmol	■		
Small stainless steel column 12 mL*	0.5 mmol	■		
Small stainless steel column 24 mL*	0.9 mmol	■		
Small stainless steel column 48 mL*	1.9 mmol	■		
FineLINE™ 35 oligo column	1.1–3.0 mmol	■		
AxiTide™ 50 column	2.3–6.1 mmol	■		
FineLINE™ 70‡ column	4.5–12 mmol	■	■	
FineLINE 100‡ column	9.1—25 mmol		■	■
AxiTide 140 column	18–50 mmol		■	■
FineLINE 200‡ column	37—100 mmol		■	■
FineLINE 350 column	112—300 mmol			■
OligoProcess columns, 400 mm up	>300 mmol			■

FineLINE, AxiTide, and OligoProcess columns have a flexibility in bed heights. Bed heights between 3 and 8 cm have been used for this table.

* used with column holder 18113845

† 10 µmol scale using lower loaded support

‡ Used with PFR O-rings and 10 µm filters ordered separately

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