

RNA Synthesis



Low Cytotoxicity

Low impurity (residual substance) content



High Editing Efficiency

Increased experimental success rate



Stable Quality

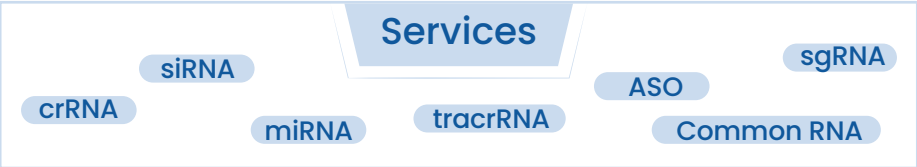
Strict quality control between batches



No DNA Interference

No unnecessary gene fragment insertion

Tsingke offers high-quality RNA oligonucleotides of various lengths (up to 180 nt) and modifications, available in scales ranging from μg to kg. Our products include MS detection and customizable QC options to suit both research-grade and clinical-grade applications.



sgRNA

Commonly used sgRNA is typically transfected into cells using plasmids, either together with the Cas protein on the same plasmid or on separate ones. However, using chemically synthesized sgRNA oligos to form RNPs with Cas9 protein in vitro offers significant advantages, including higher editing efficiency, reduced off-target effects, and lower immunogenicity.

Service	Modifications	Length (nt)	Quantity	Purification	QC	Deliverable
Cas9 sgRNA -OPC	PS and OMe modifications at both the 5' end and the 3' end	97-103	1.5/3/5 nmol	OPC	UV&MS	· Tube or customized lyophilized RNA
Cas9 sgRNA -HPLC				HPLC	UV&MS &HPLC	
cas9 crRNA	None	42	5 nmol	HPLC	UV&MS &HPLC	· COA report (electronic)
cas9 tracrRNA	None	64				
LbaCas12a crRNA/ AsCas12a crRNA	None	40				

Tsingke provides comprehensive siRNA and ASO synthesis services with strict adherence to ISO 13485:2016 quality standards. All products come with MS detection or customizable QC options to meet your needs from research-grade to clinical-grade applications.

siRNA

Service	Details	Length(nt)	Quantity	Purification	QC	Deliverable
siRNA	Custom synthesis	20~25	5 nmol or 2 OD	RNase free HPLC	UV&MS &HPLC	· Tube or customized lyophilized RNA · COA report (electronic)
siRNA NC	Various types available: negative/ positive control siRNA, transfection control siRNA, etc.		2.5 nmol or 1 OD			
3 or 4 siRNA, 1 Guaranteed	With a transfection efficiency of 80%, at least one out of the three or four siRNAs should achieve an mRNA interference efficiency of over 70%		5 nmol or 2 OD			
Large-scale siRNA	Up to kg level		≥20 nmol or 8 OD			

*Note: In addition to the recommended content, Oligo length and purification methods can also be customized.

ASO

Product	Modification	Purification	QC	Deliverable
Custom ASO Synthesis	LNA 2'-O-C16 2'-Ome Fluorophores modifications psiU PS cEt 2'-MOE NI-psiU FAM	RNase free HPLC	UV&MS&HPLC	· Tube or customized lyophilized RNA · COA report(electronic)

· Customizable Testing

RUO	· MW	· Purity			
GMP	· Oligo content	· Sequence	· Residual solvents	· Endotoxin
	· Purity and impurities	· Water content	· Elemental impurities	· Bioburden	

Commercialization Support

	Research	Pre-IND Research and Development Phase (including toxicology batch production)	
Synthesis Equipment and Scale	High-throughput oligo synthesizers: 12/24/192 oligos per run Synthesis scale: µg-g	High-throughput oligo synthesizers: 12/24/192 oligos per run High-load oligo synthesizer: Tsiker-HL-12 Synthesis scale: mg-g	
Purification Equipment and Scale	Platform: Waters&Akta Single batch: µg-g scale	Platform: Akta Single batch: mg-g scale	
Production Environment	Controlled Workshop	GMP standard	
Quality Control	Molecular Weight: MS ±0.5% Single-Strand Purity: RP-HPLC (HPLC-sgRNA, 90%)	Appearance pH (1% in water) Sodium Content Moisture Content Impurities	Residual Solvents Endotoxins Microbial Limits Related Substances
Additional Quality Control	Single-Strand Purity: RP-HPLC (90%), Double-Strand Purity: SEC-HPLC (85%) Endotoxins: ≤1 EU/mg Quantitative detection: Customizable		
New Drug Application Support	/	Adhere to national and international regulations and standards	

