

Materials List for

DNA-Tethered RNA Polymerase for Programmable In vitro Transcription and Molecular Computation

Ryan C. Lee¹, Travis R. Douglas¹, Leo Y. T. Chou¹

¹Institute of Biomedical Engineering, University of Toronto

Corresponding Author

Ryan C. Lee

ryanc.lee@mail.utoronto.ca

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Materials

Name	Company	Catalog Number	Comments
0.5% polysorbate 20 (TWEEN 20)	BioShop	TWN510.5	
0.5M ethylenediaminetetraacetic acid (EDTA)	Bio Basic	SD8135	
10 mM sodium phosphate buffer (pH 7)	Bio Basic	PD0435	Tablets used to make 10 mM buffer
10% ammonium persulfate (APS)	Sigma Aldrich	A3678-100G	
100 kDa Amicon Ultra-15 Centrifugal Filter Unit	Fisher Scientific	UFC910008	
100% acetone	Fisher Chemical	A18P4	
100% ethanol (EtOH)	House Brand	39752-P016-EAAN	
10x in vitro transcription (IVT) buffer	New England Biolabs	B9012	
10x Tris-Borate-EDTA (TBE) buffer	Bio Basic	A0026	
1M Isopropyl β- d-1-thiogalactopyranoside (IPTG)	Sigma Aldrich	I5502-1G	
1M sodium bicarbonate buffer	Sigma Aldrich	S6014-500G	
1M Tris(hydroxymethyl)aminomethane (Tris)	Sigma Aldrich	648311-1KG	
1X Tris-EDTA (TE) buffer	ThermoFisher	12090015	
2M imidazole	Sigma Aldrich	56750-100G	
2-mercaptoethanol (BME)	Sigma Aldrich	M3148	
3M sodium acetate	Bio Basic	SRB1611	
40% acrylamide (19:1)	Bio Basic	A00062	
4x LDS protein sample loading buffer	Fisher Scientific	NP0007	
5M sodium chloride (NaCl)	Bio Basic	DB0483	
5mM dithiothreitol (DTT)	Sigma Aldrich	43815-1G	
6x gel loading dye	New England Biolabs	B7024S	
agarose B powder	Bio Basic	AB0014	
BG-GLA-NHS	New England Biolabs	S9151S	
BL21 competent E. coli	Addgene	C2530H	

BLUeye prestained protein ladder	FroggaBio	PM007-0500	
bromophenol blue	Bio Basic	BDB0001	
coomassie blue (SimplyBlue SafeStain)	ThermoFisher	LC6060	
cyanine dye (SYBR Gold nucleic acid gel stain)	Fisher Scientific	S11494	
cyanine dye (SYBR Safe nucleic acid gel stain)	Fisher Scientific	S33102	
dry dimethyl sulfoxide (DMSO)	Fisher Scientific	D12345	
formamide	Sigma Aldrich	F9037-100ML	
glycerol	Bio Basic	GB0232	
kanamycin sulfate	BioShop	KAN201.5	
lysogeny broth	Sigma Aldrich	L2542-500ML	
malachite green oxalate	Sigma Aldrich	2437-29-8	
N,N,N',N'-Tetramethylethane-1,2-diamine (TEMED)	Sigma Aldrich	T9281-25ML	
NuPAGE MES SDS running buffer (20x)	Fisher Scientific	LSNP0002	
NuPAGE Novex 4-12% Bis-Tris gel 1.0 mm 12-well	Life Technologies	NP0322BOX	
oligonucleotide (cage antisense)	IDT	N/A	TATAGTGAGTCGTATTAATTTG
oligonucleotide (cage sense)	IDT	N/A	TCAGTCACCTATCTGTTTCAAA TTAATACGACTCACTATA
oligonucleotide (malachite green aptamer antisense)	IDT	N/A	GGATCCATTCGTTACCTGGCT CTCGCCAGTCGGGATCCTATA GTGAGTCGTATTACAGTTCCAT TATCGCCGTAGTTGGTGTACT
oligonucleotide (malachite green aptamer sense)	IDT	N/A	TAATACGACTCACTATAGGATC CCGACTGGCGAGAGCCAGGT AACGAATGGATCC
oligonucleotide (Transcription Factor A)	IDT	N/A	AGTACACCAACTACGAGTGAG
oligonucleotide (Transcription Factor B)	IDT	N/A	TCAGTCACCTATCTGGCGATAA TGGAAGTCTG
oligonucleotide with 3' Amine modification (tether)	IDT	N/A	GCTACTCACTCAGATAGGTGAC TGA/3AmMO/
Pierce strong ion exchange spin columns	Fisher Scientific	90008	
plasmid encoding SNAP T7 RNAP and kanamycin resistance genes	Genscript	N/A	custom gene insert
protein purification column (HisPur Ni-NTA spin column)	Fisher Scientific	88226	
rNTP mix	New England Biolabs	N0466S	
Roche mini quick DNA spin column	Sigma Aldrich	11814419001	
Triton X-100	Sigma Aldrich	T8787-100ML	
Ultra Low Range DNA ladder	Fisher Scientific	10597012	
urea	BioShop	URE001.1	