

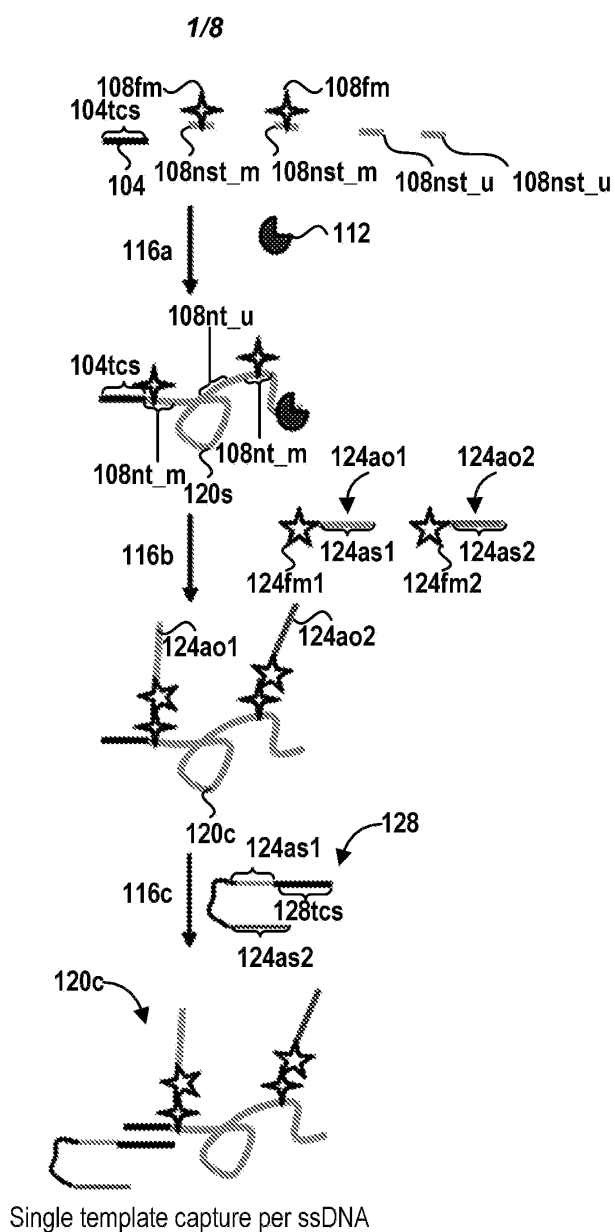
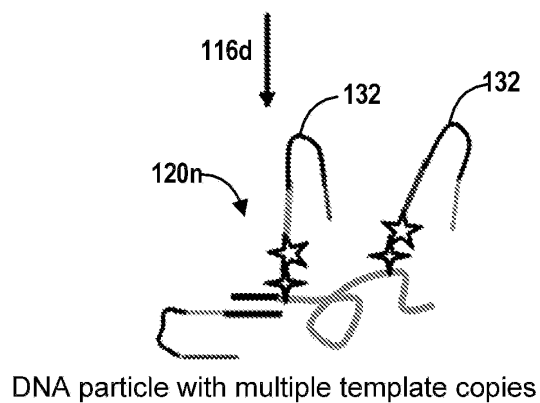
FIG. 1

FIG. 2

SEQ ID NO: 14	SUMO-TdT	1	MGSSHHHHHH	His tag	Thrombin cleavage site	SUMO fragment	60
	SUMO-TdT	60	KKTTPLRRLM	EAFAKRQ	KE MDSLRF	LYDG IRIQADQ	TPE DLDMEDNDII EAHREQIGGE 120
SEQ ID NO: 1 Amino Acids 139-520 of SEQ ID NO: 12	SUMO-TdT	121	LMRTDYSATP	NPGFQKTPPL	AVKKISQYAC	QRKTTLNNYN	HIFTDAFEIL AENSFFENE 180
	Bovine TdT	139	RTDYSATP	NPGFQKTPPL	AVKKISQYAC	QRKTTLNNYN	HIFTDAFEIL AENSFFENE 196
	SUMO-TdT	181	VSYVTFMRAA	SVLKSLPFTI	ISMKDTEGIP	CLGDKVKCII	EEIIEFGESS EVKAVLNDER 240
	Bovine TdT	197	VSYVTFMRAA	SVLKSLPFTI	ISMKDTEGIP	CLGDKVKCII	EEIIEFGESS EVKAVLNDER 256
SEQ ID NO: 2	SUMO-TdT	241	YQSFKLFTSV	FGVGLKTSEK	WFRMGFRSLS	WFRMGFRSLS	WFRMGFRSLS 300
	Bovine TdT	257	YQSFKLFTSV	FGVGLKTSEK	WFRMGFRSLS	WFRMGFRSLS	WFRMGFRSLS 316
	SUMO-TdT	301	AEAEAVGVLV	KEAVWAFLLP	AFVTMGGFR	AFVTMGGFR	AFVTMGGFR 360
	Bovine TdT	17	AEAEAVGVLV	KEAVWAFLLP	AFVTMGGFR	AFVTMGGFR	AFVTMGGFR 376
SEQ ID NO: 3	SUMO-TdT	361	NLWEKKGLLL	YYDLVESTFE	KFKLPSRQVD	TLDHFQKCF	ILKLIHQHQRVD SSKSNQQEGK 420
	Bovine TdT	377	NLWEKKGLLL	YYDLVESTFE	KFKLPSRQVD	TLDHFQKCF	ILKLIHQHQRVD SSKSNQQEGK 436
SEQ ID NO: 4	SUMO-TdT	421	TWKAIRVDLV	MCPYENRAFA	LLGWTGSRQF	ERDIRRYATH	ERKMMLDNHA LYDKTKRVFL 480
	Bovine TdT	437	TWKAIRVDLV	MCPYENRAFA	LLGWTGSRQF	ERDIRRYATH	ERKMMLDNHA LYDKTKRVFL 496
SEQ ID NO: 5	SUMO-TdT	481	KAEEEEEIFA	HLGLDYIEPW	ERNA	504	
	Bovine TdT	497	KAEEEEEIFA	HLGLDYIEPW	ERNA	520	

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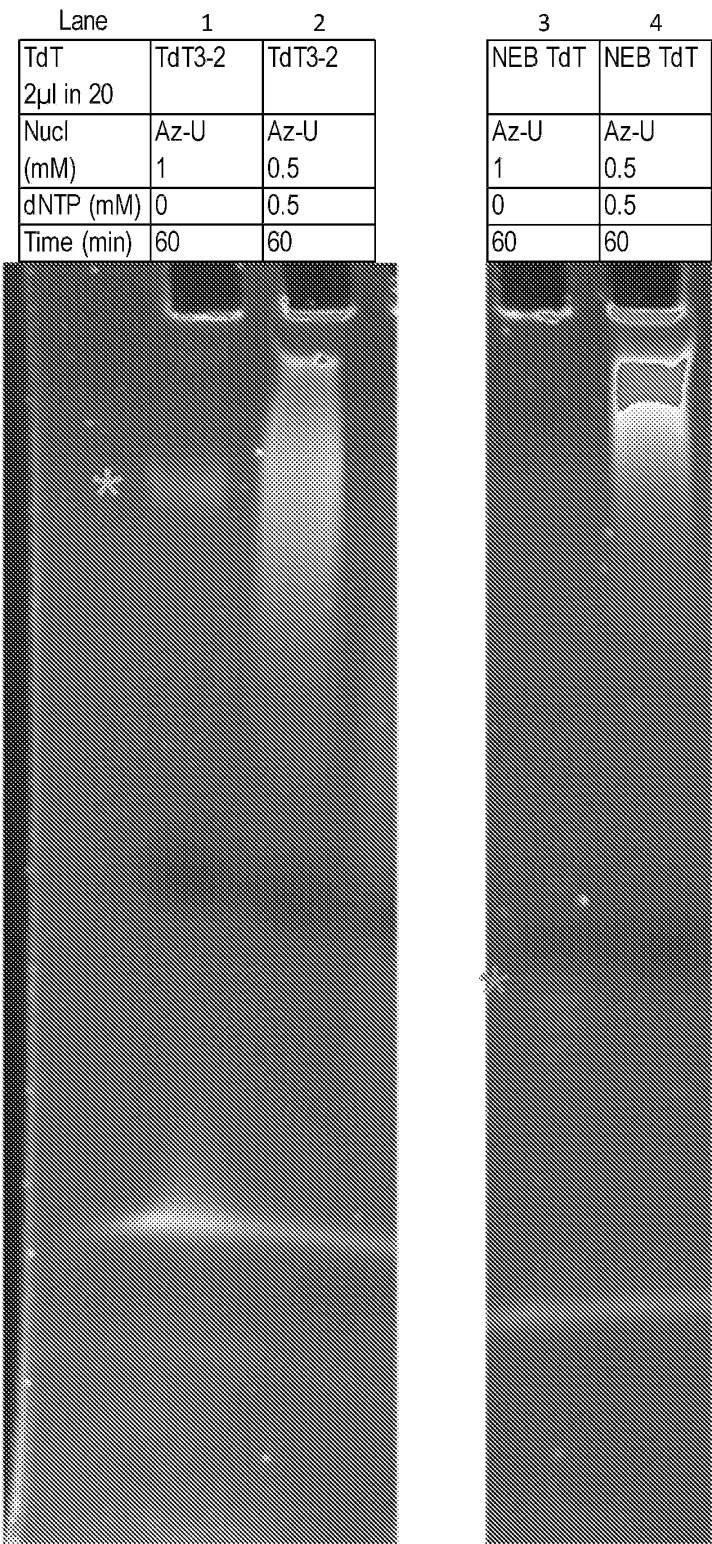


FIG. 3

FIG. 4A

TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT
Nucl (mM)	0.99 dNTP	0.9 dNTP	0.99 (0.9T, 0.1A)	0.9 (0.9T, 0.1A)	0.5 (0.9T, 0.1A)	0	0.99 dNTP	0.9 dNTP	0.99 (0.9T, 0.1A)	0.5 dNTP	0.9 (0.9T, 0.1A)	0.5 (0.9T, 0.1A)	0
Azide-dUTP (mM)	0.01	0.1	0.01	0.1	0.5	1	0.01	0.1	0.01	0.5	0.1	0.5	0
Time (min)	1	1	1	1	1	1	1	1	1	1	1	1	1
DBCO-Cy3	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y

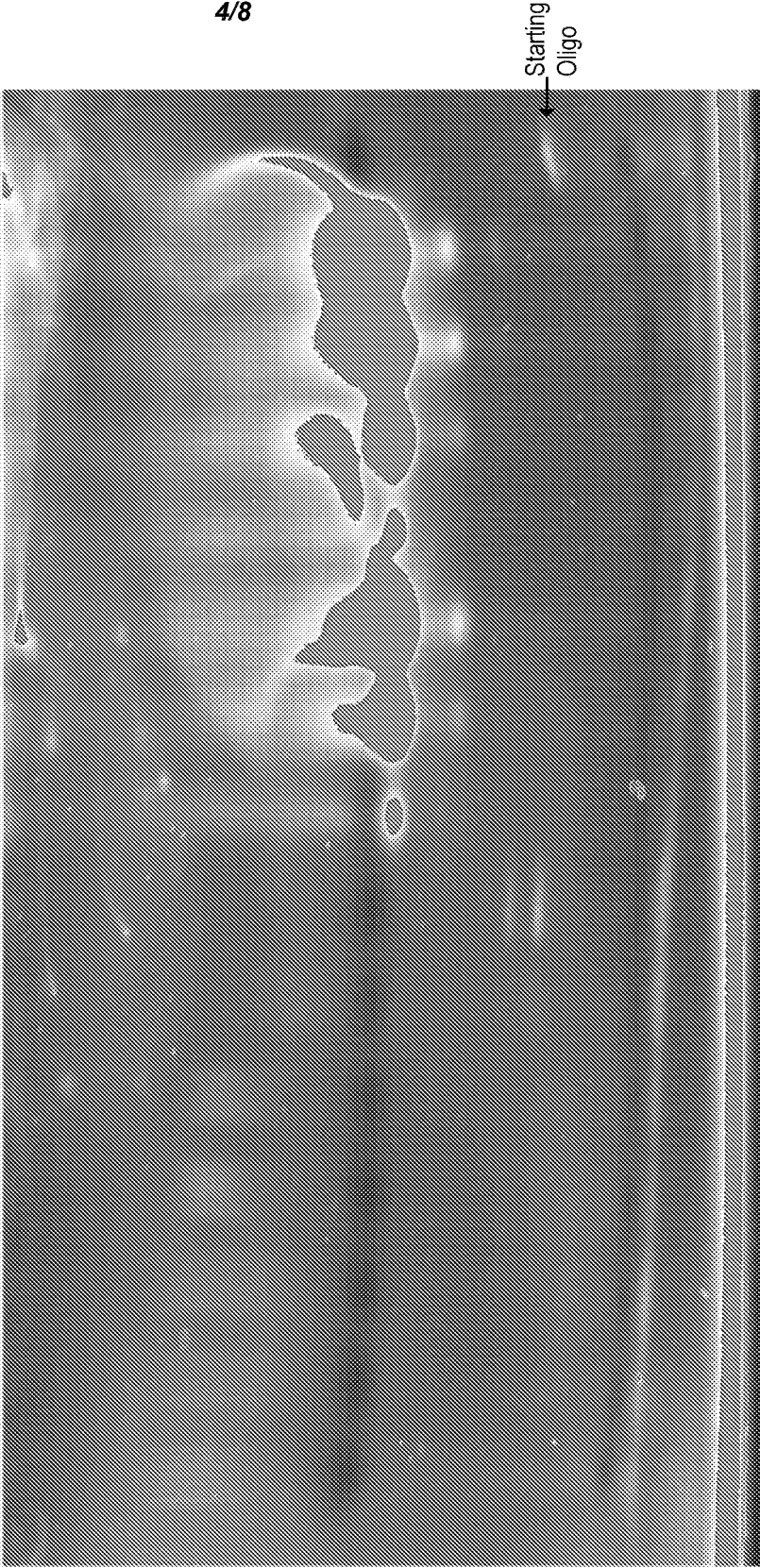


FIG. 4B

Pol	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT
Nucl (mM)	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP	dNTP
Azide-dUTP (mM)	0.01	0.1	0.5	0.01	0.1	0.5	0.01	0.1	0.5	0.01	0.1	0.5	0.01
Time (min)	60	60	60	60	60	60	60	60	60	60	60	60	60
DBCO-Cy3	N	N	N	N	N	N	N	N	N	N	N	N	N

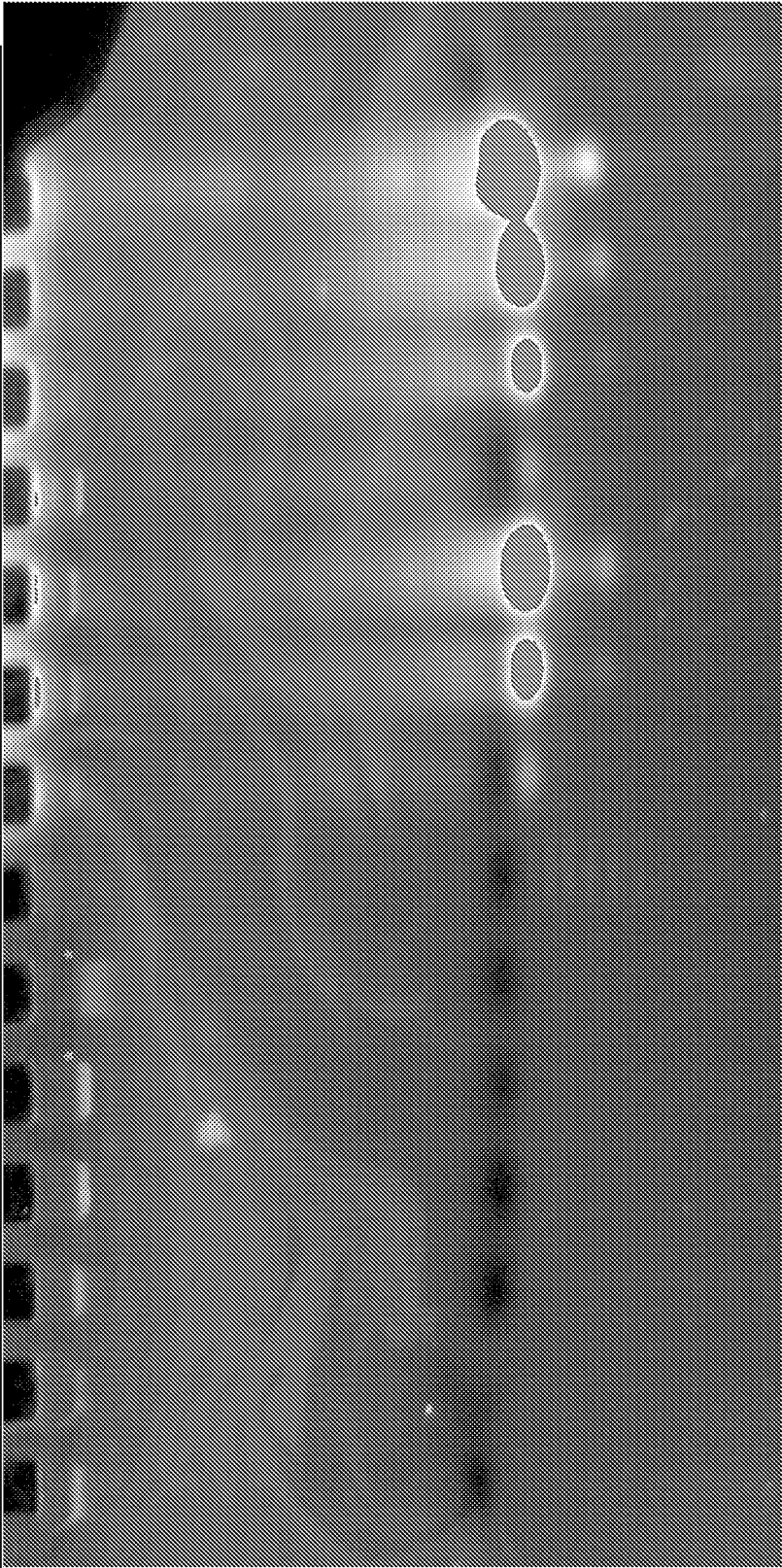
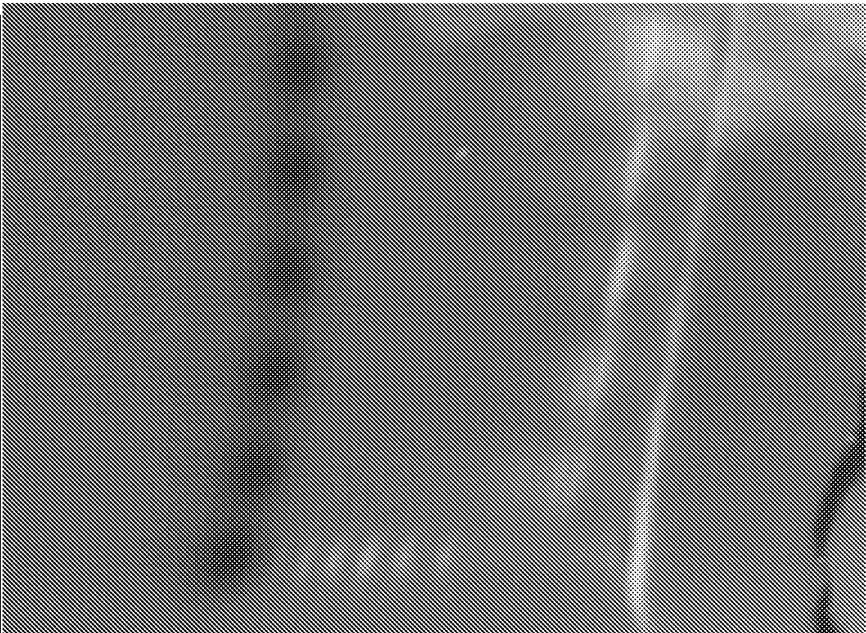


FIG. 5A

TdT 2µl in 20	TdT3-2	TdT3-2	TdT3-2	TdT3-2	TdT3-2	TdT3-2
Nucl (mM)	Az-U 1	Az-U 0.5	Az-U 0.1	Az-A 1	Az-A 0.5	Az-A 0.1
dNTP (mM)	0	0.5	0.9	0	0.5	0.9
Time (min)	1	1	1	1	1	1



NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT	NEB TdT
Az-U 1	Az-U 0.5	Az-U 0.1	Az-A 1	Az-A 0.5	Az-A 0.1	
0	0.5	0.9	0	0.5	0.9	
1	1	1	1	1	1	1



FIG. 5B

