

Materials List for:

# A G-quadruplex DNA-affinity Approach for Purification of Enzymatically Active G4 Resolvase<sup>1</sup>

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URL: <https://www.jove.com/video/55496>

DOI: [doi:10.3791/55496](https://doi.org/10.3791/55496)

## Materials

Name	Company	Catalog Number	Comments
TriEx4-DHX36 plasmid	Addgene	68368	
Rosetta2(DE3)plysS competent cells	Novagen	71403-4	
S.O.C medium	Thermo Fisher Scientific	15544034	
Difco Terrific Broth	Becton Dickinson	243820	
Glycerol	Sigma-Aldrich	G5516	
Chloramphenicol	Sigma-Aldrich	C1919	35 µg/mL in bacterial plates/large cultures
Carbenicillin (plant cell culture tested)	Sigma-Aldrich	C3416	50 µg/mL in bacterial plates/large cultures
Isopropyl β-D-1-thiogalactopyranoside (IPTG)	Sigma-Aldrich	I6758	
Lysozyme (from chicken egg white)	Sigma-Aldrich	L6876	
1 M Tris-HCl, pH 8	Universal Scientific Supply Co.	1963-B	or from standard source
1 M Tris-HCl, pH 7	Universal Scientific Supply Co.	1966	or from standard source
1.5 M Tris-HCl, pH 8.8			For casting resolving gel (for protein quantitation gel); From standard source
1 M Tris-HCl, pH 6.8			For casting stacking gel (for protein quantitation gel); From standard source
1 M Tris-Acetate, pH 7.8	Universal Scientific Supply Co.	1981	or from standard source
70% Ethanol			From standard source
Magnesium chloride (1 M solution)	Life Technologies	AM9530G	
Sodium chloride	Sigma-Aldrich	S7653	
Sodium acetate	Sigma-Aldrich	S8750	
20x SSC	Universal Scientific Supply Co.	1665	or from standard source
β-mercaptoethanol (2-BME)	Sigma-Aldrich	63689	
Protease inhibitor cocktail	Sigma-Aldrich	P8849	
Leupeptin hemisulfate	Sigma-Aldrich	L8511	
Streptavidin paramagnetic beads	Promega	Z5482	
0.5 M EDTA, pH 8	Universal Scientific Supply Co.	0718	or from standard source

0.2 M EDTA, pH 6	Universal Scientific Supply Co.		From standard source; initially adjust pH with NaOH, then adjust pH back down with HCl.
A-lactalbumin (Type 1 from bovine milk)	Sigma-Aldrich	L5385	
Cobalt metal affinity beads	Clonetech	635502	
L-Histidine	Sigma-Aldrich	H8000	
Acetic acid, glacial	Fisher Scientific	A38-500	
Adenosine 5'-Triphosphate (from bacterial source)	Sigma	A7699	
40% acrylamide/Bis solution (37.5:1)	Biorad	161-0148	
Glycine	Sigma-Aldrich	50046	to make protein gel running buffer (192 mM glycine, 25 mM Tris Base, 0.1% SDS)
10% Sodium dodecyl sulfate (SDS)	Universal Scientific Supply Co.	1667	to make protein gel running buffer (192 mM glycine, 25 mM Tris Base, 0.1% SDS); or from standard source
10x TBE	Sigma-Aldrich	11666703001	or from standard source
Tris base	Fisher Scientific	BP152-1	to make protein gel running buffer (192 mM glycine, 25 mM Tris Base, 0.1% SDS); From standard source
TEMED	Sigma-Aldrich	411019	
Ammonium persulfate (APS)	Sigma-Aldrich	A3678	
Broad Range Protein MW markers	Promega	V8491	
Biotinylated Z33 oligo ("Z33-Bio")	Oligos Etc		5' AAA GTG ATG GTG GTG GGG GAA GGA TTC GGA CCT-biotin 3'
TAMRA-Z33 oligo ("Z33-TAM")	Oligos Etc		5' TAMRA-AAA GTG ATG GTG GTG GGG GAA GGA TTC GGA CCT 3'
Fluor-coated TLC plate	Life Technologies	AM10110	
Ficoll	Sigma-Aldrich	F2637	30% in H <sub>2</sub> O
Coomassie R-250	Sigma-Aldrich	27816	
Methanol	Fisher Scientific	A412	
Multiband UV lamp			Capable of emitting UV light at 365 nm
Table-top centrifuge (with swinging bucket rotor)			Capable of being cooled to 4 °C
Microcentrifuge			Capable of being cooled to 4 °C
Digital Sonfier	Branson		Or equivalent capable of delivering sonication pulses (30% amplitude, 2 s ON/2 s OFF)
50 °C water bath			For formation of Z33 into quadruplex
37 °C incubator for bacteria			For bacterial transformations and initial overnight growth of large cultures of Rosetta2 <i>E. coli</i> transformed with TriEx4-DHX36
37 °C/14 °C shaking incubator for bacteria			For growth and protein induction of large cultures of Rosetta2 <i>E. coli</i> transformed with TriEx4-DHX36
Spectrophotometer			capable of reading OD600; capable of reading oligomer concentrations based on base

			sequence (such as Biorad SmartSpec 3000)
Thermometer			From standard source
PCR strip tubes			From standard source
15 and 50 mL centrifuge tubes (polypropylene)			From standard source
Microcentrifuge tubes (2.0 mL)			From standard source
500 mL centrifuge bottles (polypropylene)	Thermo Scientific	3141-0500	
Standard array of pipet tips and serological pipettes			From standard source
Gel-loading tips			From standard source
Automatic repeating pipette			For quick aliquoting of rG4R1; From standard source
Thermal cycler			From standard source
Liquid Nitrogen			From standard source
Dry ice			From standard source
Laemlli sample buffer	Biorad	161-0737	
Apparatus for running large slab gels	Biorad		We have used the Protean II xi cell apparatus from Biorad
Magnet	Life Technologies	12301D	We use a magnet from One Lambda (Now a Thermo Fisher Scientific brand); and Life is also a subsidiary of Thermo, and thus the magnet listed here should be a suitable replacement
Razor blades			From standard source
Filter paper and funnel			From standard source
Glass casserole dish			From standard source
Orbital shaker			From standard source
Kimwipes			From standard source
Clear sheet protectors			From standard source
Scanner and associated TWAIN software			From standard source
Image analysis software			Such as Fuji Multiguage, or equivalent
Microsoft Excel			Or equivalent