

Materials List for:

# Inducible T7 RNA Polymerase-mediated Multigene Expression System, pMGX

Mohamed I. Hassan<sup>\*1</sup>, Fern R. McSorley<sup>\*1</sup>, Kinya Hotta<sup>2</sup>, Christopher N. Boddy<sup>1</sup>

<sup>1</sup>Department of Chemistry and Biomolecular Sciences, University of Ottawa

<sup>2</sup>School of Biosciences, The University of Nottingham Malaysia Campus

\*These authors contributed equally

Correspondence to: Kinya Hotta at [kinyah@gmail.com](mailto:kinyah@gmail.com), Christopher N. Boddy at [cboddy@uottawa.ca](mailto:cboddy@uottawa.ca)

URL: <https://www.jove.com/video/55187>

DOI: [doi:10.3791/55187](https://doi.org/10.3791/55187)

## Materials

Name	Company	Catalog Number	Comments
<b>Enzymes</b>			
Alkaline Phosphatase, Calf Intestinal (CIP)	New England Biolabs	M0290S	
AvrII	New England Biolabs	R0174S	
EcoRI	New England Biolabs	R0101S	
NdeI	New England Biolabs	R0111S	
XbaI	New England Biolabs	R0145S	
Herculase II Fusion DNA Polymerase	Agilent Technologies	600677	
T4 DNA Ligase	New England Biolabs	M0202S	
<b>Name</b>			
<b>Company</b>			
<b>Catalog Number</b>			
<b>Comments</b>			
<b>Reagents</b>			
1 kb DNA ladder	New England Biolabs	N3232L	
4-20% Mini-PROTEAN TGX Stain-Free Protein Gels	Bio-Rad	456-8095	
50x TAE	Fisher Thermo Scientific	BP1332-4	
Agar	Fisher Thermo Scientific	BP1423-500	
Agarose	Fisher Thermo Scientific	BP160-500	
Ampicillin	Sigma-Alrich	A9518-5G	
BL21 (DE3) chemically competent cells			Comeptent cell prepared in house
B-PER Bacterial Protein Extraction Reagent	Fisher Thermo Scientific	PI78243	
dNTP mix	Agilent Technologies		Supplied with polymerase
Gel Extraction Kit	Omega	D2500-02	E.Z.N.A Gel Extraction, supplied by VWR Cat 3: CA101318-972
Glycine	Fisher Thermo Scientific	BP381-1	
His Tag Antibody [HRP], mAb, Mouse	GenScript	A00612	
Immobilon Western Chemiluminescent HRP Substrate	EMD Millipore	WBKLS0100	
IPTG	Sigma-Alrich	15502-10G	
LB	Fisher Thermo Scientific	BP1426-500	
Methanol	Fisher Thermo Scientific	A411-20	
Pasteurized instant skim milk powder	Local grocery store		No-name grocery store milk is adequate

Nitrocellulose membrane	Amersham Protran (GE Healthcare Life Sciences)	10600007	Membrane PT 0.45 µm 200 mm x 4 m, supplied by VWR Cat #: CA10061-086
Plasmid DNA Isolation Kit	Omega	D6943-02	E.Z.N.A Plasmid DNA MiniKit I, supplied by VWR Cat #: CA101318-898
pMGX	Boddy Lab		Request from the Boddy Lab Contact cboddy@uottawa.ca
Primers	Intergrated DNA Technologies		Design primers as needed for desired gene
Synthetic Gene	Life Technologies		Design and optimize as needed
Thick Blot Filter Paper	Bio-Rad	1703932	
Tris base	BioShop	TRS001.1	
Tween-20	Sigma-Alrich	P9416-50ML	
XL1-Blue chemically competent cells			Comepotent cell prepared in house
<b>Name</b>	<b>Company</b>	<b>Catalog Number</b>	<b>Comments</b>
<b>Equipment</b>			
BioSpectrometer	Eppendorf	RK-83600-07	
Gel box - PAGE	Bio-Rad	1658005	Mini-PROTEIN Tetra Vertical Electrophoresis Cell
Gel Imager	Alpha Innotech		Alphamager EC
Incubator-oven	Fisher Thermo Scientific	11-690-650D	Isotemp
Incubator-shaker	Fisher Thermo Scientific	SHKE6000-7	MaxQ 6000
Personna Razors	Fisher Thermo Scientific	S04615	
Power Pack	Bio-Rad	S65533Q	FB300
Transilluminator	VWR International	M-10E,6W	
Thermocycler	Eppendorf	Z316091	Mastercycler Personal, supplied by Sigma
UV Face-Shield		18-999-4542	
Waterbath	Fisher Thermo Scientific	15-460-2SQ	
Western Transfer Apparatus	Bio-Rad	1703935	Mini-Trans Blot Cell