

Materials List for:

CRISPR/Cas12a Multiplex Genome Editing of *Saccharomyces cerevisiae* and the Creation of Yeast Pixel Art

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Materials

Name	Company	Catalog Number	Comments
Chemicals specific for the protocol			
1 Kb Plus DNA Ladder	Thermo Fisher Scientific	10787018	Electrophoresis
Ampicillin sodium salt	Sigma Aldrich	A9518	Selection of <i>E. coli</i> transformants
Bsal-HF (20 U/μl)	New England BioLabs	R353L	Golden Gate Cloning
Cell Lysis Solution (from kit Puregene Yeast/Bact. Kit B)	QIAGEN	854016	Isolation of genomic DNA from <i>S. cerevisiae</i>
CutSmart Buffer	New England BioLabs	B7204S	Linearization of pRN1120
Deoxyribonucleic acid sodium salt from salmon testes	Sigma Aldrich	D1626	Transformation of <i>S. cerevisiae</i> (carrier DNA)
dNTPs	Invitrogen	10297018	PCRs
EcoRI-HF	New England BioLabs	R3101S	Linearization of pRN1120
Ethanol absolute for analysis	Merck	100983	Isolation of genomic DNA from <i>S. cerevisiae</i>
Ethylenediamine-tetraacetic acid	Sigma Aldrich	ED	Transformation of <i>S. cerevisiae</i>
G418 disulfate salt	Sigma Aldrich	A1720	Selection of <i>S. cerevisiae</i> transformants
Histodenz	Sigma Aldrich	D2158	Yeast pixel art
Isopropanol	Merck	100993	Isolation of genomic DNA from <i>S. cerevisiae</i>
Lithium acetate dihydrate	Sigma Aldrich	L6883	Transformation of <i>S. cerevisiae</i>
Nancy-520 DNA Gel Stain	Sigma Aldrich	1494	Electrophoresis
NEB10 competent <i>E. coli</i> cells	New England BioLabs	C3019H	Transformation of <i>E. coli</i> : dx.doi.org/10.17504/protocols.io.nkvdcw6
Nourseothricin	Jena Bioscience	AB102	Selection of <i>S. cerevisiae</i> transformants
Phusion buffer	New England BioLabs	M0530L	PCRs
Phusion High-Fidelity DNA Polymerase	New England BioLabs	M0530L	PCRs
Polyethylene glycol 4000	Merck	7490	Transformation of <i>S. cerevisiae</i>
Protein Precipitation Solution (10 M NH ₄ AC) (from kit Puregene Yeast/Bact. Kit B)	QIAGEN	854016	Isolation of genomic DNA from <i>S. cerevisiae</i>

Purple loading dye	New England BioLabs	B7024S	Electrophoresis
QIAprep Spin Miniprep Kit	QIAGEN	27106	Purification of plasmids
RNase cocktail enzyme mix	Thermo Fisher Scientific	AM2286	Isolation of genomic DNA from <i>S. cerevisiae</i>
T4 DNA ligase buffer	Invitrogen	46300-018	Golden Gate Cloning
T4 DNA Ligase (1 U/ μ l)	Invitrogen	1705218	Golden Gate Cloning
UltraPure Agarose	Invitrogen	16500500	Electrophoresis
Wizard SV Gel and PCR Clean-Up System Kit	Promega	A9282	Purification of PCR products and linearized pRN1120
XhoI	New England BioLabs	R0146S	Linearization of pRN1120
Zymolyase 50 mg/ml (5 units/ μ L)	Zymo Research	E1006	Isolation of genomic DNA from <i>S. cerevisiae</i> (yeast lysis enzyme)
Zymolyase storage buffer	Zymo Research	E1004-B	Isolation of genomic DNA from <i>S. cerevisiae</i> (necessary for the preparation of yeast lysis enzyme)
Chemicals of general use			
2*Peptone-Yeast extract (PY) agar			Plate growth of <i>E. coli</i>
2*PY medium			Cultivation of <i>E. coli</i>
Demineralized water			Transformation of <i>S. cerevisiae</i>
ELFO buffer			Electrophoresis
MQ			Multiple steps
Physiological salt solution			Transformation of <i>S. cerevisiae</i>
TE buffer			Storage of DNA, transformation of <i>S. cerevisiae</i>
Yeast extract-peptone-dextrose (YEPD; 2% glucose) medium			Cultivation of <i>S. cerevisiae</i>
YEPD (2% glucose) agar			Plate growth of <i>S. cerevisiae</i>
Consumables			
Eppendorf tubes			
Falcon tubes (50 mL)			
Microplate 96 wells			
Petri dishes			
Pipette tips 0.5 - 10 μ L			
Pipette tips 10 - 200 μ L			
Pipette tips 100 - 1000 μ L			
Shake flasks (500 mL)			
Sterile filters			
Equipment			
Centrifuge (Falcon tubes)			
Echo 525 acoustic liquid handler			
Incubator			
NanoDrop			
Set for eletrophoresis			
Spectrophotometer			
Table centrifuge (Eppendorfs tubes)			

Thermocycler			
Plasmids			
pCSN067	Addgene	ID 101748	https://www.addgene.org/
pRN1120	Addgene	ID 101750	https://www.addgene.org/
Strains			
<i>S. cerevisiae</i> strain CEN.PK113-7D	EUROSCARF collection		http://www.euroscarf.de