Supplementary Materials

Table S1. Different media composition and content

	Composition	Content
Fermentation medium I	Soybean peptone	50 g/L
	Glucose	25 g/L
	Sucrose	25 g/L
	K$_2$HPO4	0.6 g/L
	Glycerol	25 mL/L
Fermentation medium II	Sucrose	75 g/L
	Peptone	10 g/L
	Sodium glutamate	2 g/L
	(NH$_4$)$_2$SO$_4$	15 g/L
	KH$_2$PO$_4$	8 g/L
	ZnSO$_4$·7H$_2$O	0.72 g/L
	MgSO$_4$·7H$_2$O	6 g/L
	Succinic acid	11 g/L
	Uracil	20 mg/L
	Methionine	0.15 g/L
	Vitamin solution	12 mL/L
	Trace metal solution	10 mL/L
	Liquid paraffin	10 mL/L
	Glycerol	5 mL/L

Note:

Vitamin solution contained 62.5 mL/L biotin solution (1mg/ml), 1.25 g/L calcium pantothenate, 1.25 g/L nicotinic acid, 31.25 g/L myo-inositol, 1.25 g/L thiamine, 1.25 g/L pyridoxal, and 0.25 g/L p-aminobenzoic acid.

Trace metal solution contained 10.2 g/L ZnSO$_4$·7H$_2$O, 0.5 g/L MnCl$_2$·4H$_2$O, 0.75 g/L CuSO$_4$·5H$_2$O, 0.47 g/L CoCl$_2$·6H$_2$O, 0.56 g/L Na$_2$MoO$_4$·2H$_2$O, 3.84 g/L CaCl$_2$·2H$_2$O, 5.12 g/L FeSO$_4$·7H$_2$O, 15 g/L EDTA.

Biotin solution, 1g biotin was dissolved into 1L of ethanol and 4N-sulfuric acid mixtures (1:1)

Table S2. Plasmids used in this study

Plasmids	Description	Source
PY13	Amp, HIS3, CEN/ARS, *E. coli-S. cerevisiae* shuttle vector	Lab work
PY14	Amp, TRP1, CEN/ARS, *E. coli-S. cerevisiae* shuttle vector	Lab work
PY15	Amp, LEU2, CEN/ARS, *E. coli-S. cerevisiae* shuttle vector	Lab work
PY15-erg20^{ww}-tLims	PY15 derivate, $\triangle$P$_{TEF1}$:: Erg20^{ww}-P$_{GAL1, 10}$-tLims	This study
PY14-L3H-CPR1	PY14 derivate, $\triangle$P$_{TEF1}$:: CPR1- P$_{GAL1, 10}$-L3H	This study
PY13-IPDH-IPR	PY13 derivate, $\triangle$P$_{TEF1}$:: IPDH- P$_{GAL1, 10}$-IPR	This study
PY13-KSI-PGR	PY13 derivate, $\triangle$P$_{TEF1}$:: KSI- P$_{GAL1, 10}$-PGR	This study
PY13-MMR	PY13 derivate, $\triangle$P$_{TEF1}$:: P$_{GAL1}$-MMR	This study
PY26-L3H	PY26 derivate, $\triangle$P$_{TEF1}$:: P$_{GAL10}$-L3H	This study
PY26-L3H-CPR1	PY26 derivate, $\triangle$P$_{TEF1}$:: CPR1- P$_{GAL1, 10}$-L3H	This study
PY26-IPDH	PY26 derivate, $\triangle$P$_{TEF1}$::P$_{GAL1}$-IPDH	This study
PY26-IPR	PY26 derivate, $\triangle$P$_{TEF1}$:: P$_{GAL10}$-IPR	This study
PY26-KSI	PY26 derivate, $\triangle$P$_{TEF1}$::P$_{GAL1}$-KSI	This study
PY26-PGR	PY26 derivate, $\triangle$P$_{TEF1}$::P$_{GAL10}$-PGR	This study
PY26-MMR	PY26 derivate, $\triangle$P$_{TEF1}$::P$_{GAL3}$-MMR	This study