

## Supplementary Information

### Engineering *Yarrowia lipolytica* for the Synthesis of Glutathione from Organic By-Products

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Table 1. Primers used in the study.

Code	Primer name	Primer sequence 5'-3'	Modification/ utilization
N1	GSH1-Fo	CACTGGATCCATGGGTCTCCTGTCGCT	<i>Bam</i> HI added
N2	GSH1-Rev	GCGCCTAGGCTACTCCTTCTCGTACTCAAAACC	<i>Avr</i> II added
N3	GSH1-Bfo	CGCTACCTGGATTTCGAAACTTCATCAG	Mutagenesis
N4	GSH1-Brev	CTGATGAAGTTTCGAATCCAGGTAGCG	Mutagenesis
N5	GSH2-Fo	GCTGGATCCATGACGTTCCAAGAGAAAATCAAA G	<i>Bam</i> HI added
N6	GSH2-Rev	CTTCCTAGGCTAATCCACAAGGTAAACACCATC	<i>Avr</i> II added
N7	GSH2-Arev	GAACAGACCTGGGGTCAGGGG	Mutagenesis
N8	GSH2-Afo	CCCTGACCCTGGGTCTGTTCC	Mutagenesis
N9	qPCR-GSH1f	TGACTTCGACGACATTCTGC	RT-PCR GSH1
N10	qPCR-GSH1r	CACCCCTGGGCTCGTAATAA	RT-PCR GSH1
N11	qPCR-GSH2f	GTGTTTCGACGAGAGCATTGA	RT-PCR GSH2
N12	qPCR-GSH2r	ATGTAGTCGGACCGGAACAG	RT-PCR GSH2
N13	LoxP-FO	GCATACATTATACGAAGTTATTCTGAATTC	Auxotrophic marker verification
N14	LoxR-Rev	GGGTAATTATCGCTTCGGATA	Auxotrophic marker verification
N15	pTEF-Fo	GGACCCAACCCCGGCG	Gene integration verification
N16	INU1-MFo	TGGCATTGTACTACCAGTACAACCCAG	-
N17	INU1-MRev	GTACCGTTGAAGTCACCAACAAAGTATTG	-
N18	alpha-AMY-LqFo	TAACCCTGACACTGGAGCTG	RT-PCR $\alpha$ -AMY
N19	alpha-AMY-RqREV	CAGATCTCAGCAACGGCAAA	RT-PCR $\alpha$ -AMY
N20	gluco-AMY-LqFo	CGCTAACAACCGACGAAACT	RT-PCR g-AMY
N21	gluco-AMY-Rqrev	TCTTAGAGGCGGTAGCAGTG	RT-PCR g-AMY
N22	Inu1-LqFo	GCTCCAACCTCAGAGACCCT	RT-PCR INU1
N23	Inu1-RqRev	CGGAGGAGTTCGAAGAGTCA	RT-PCR INU1
N24	GUT1-L-qPCR	CCCTGTCCACCTACTTTGCC	RT-PCR GUT1
N25	GUT1-R-qPCR	TTGGAGGTGTCGGTGATGTG	RT-PCR GUT1
N26	GUT2-P-L-qPCR	CAGCAAGAGAAGCAACGGTGA	RT-PCR GUT2
N27	GUT2-T-R-qPCR	CCAAGTTCGGTCTCAAGCCTG	RT-PCR GUT2