

Supporting Information

Precursor supply for erythromycin biosynthesis: engineering of propionate assimilation pathway based on propionylation modification

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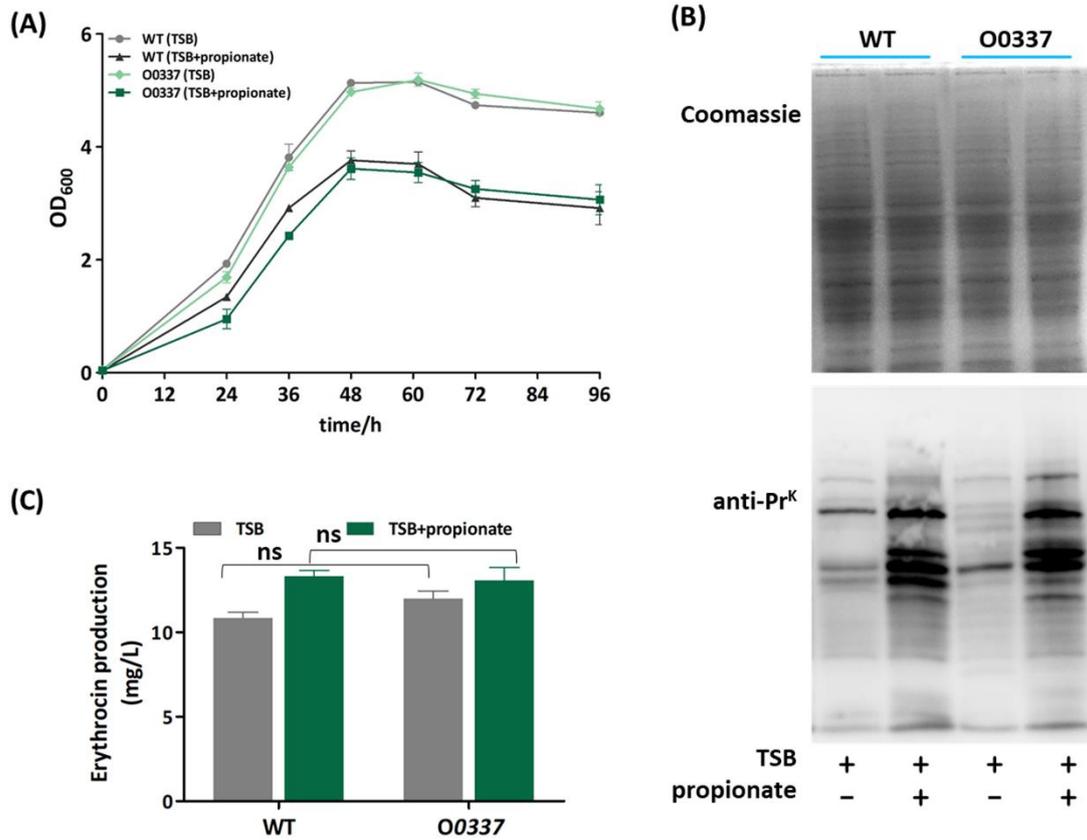


Figure S1. Overexpression of SACE_0337 strain (O0337) showed similar erythromycin production as WT strain. (A) Growth curve of *S. erythraea* WT and O0337 strains grown in TSB or TSB supplemented with 20 mM propionate. (B) Propionylation level of total protein from WT and O0337 strains grown in TSB medium with or without propionate. Equal amount of total protein (100 mg) was added for each lane. (C) Quantitative analysis of erythromycin production of *S. erythraea* WT and O0337 grown in TSB medium supplemented with propionate or not by HPLC determination. Error bars show standard deviation from three independent experiments. ns, not significant.

Table S1. Strains and plasmids used in this work.

Strain or plasmid	source or reference
strains	
<i>Saccharopolyspora erythraea</i> NRRL2338	DSM 40517
<i>Saccharopolyspora erythraea</i> O1780 (WT::1780)	In this work
<i>Saccharopolyspora erythraea</i> O3848 (WT::3848)	In this work
<i>Saccharopolyspora erythraea</i> O0337 (WT::0337)	(1)
<i>Saccharopolyspora erythraea</i> O4729 (WT::4729)	(1)
<i>Saccharopolyspora erythraea</i> Ab ^{WT}	(2)
<i>Saccharopolyspora erythraea</i> Ab ^{O1780}	In this work
<i>Saccharopolyspora erythraea</i> Δ acuA	(3)
<i>E. coli</i> DH5 α	Novagen
<i>E. coli</i> BL21(DE3)	Novagen
plasmids	
pET-28a	Thermo Scientific
pET-3848	In this work
pET-1780	In this work
pIB139	(4)
pIB-1780	In this work
pIB-3848	In this work

Table S2. Primers for RT-PCR and overexpression.

Gene	Sequence (5'-3')
<u>RT-PCR primers</u>	
SACE_3848	ATCTGCATCCGCCTCCC CGGCCCATGACGAACAC
SACE_2408	GTCCTGGGAACGCTGAAA GCGGACCTGGCTGATCTTG
SACE_3902	CAACTGGGCGCTGGACT GCCGAGCATCAGCACGAT
SACE_2851	GTTGCAGCAGTGGCTCG ATGTTGCCGCTCTGGGT
SACE_1780	CGATGGAGGAAGGCGTGGTG GATCTTGCGTGGTTCGGTGG
<u>Overexpression primers</u>	
O1780	ATGGGTCGCGGATCCGAATTCGTGCAGGACCAGCCGAACGCGC CTCGAGTGCGGCCGCAAGCTTTCACCGCAGGCGGCGCGG

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2. Liu, Y., Wei, W. P., and Ye, B. C. (2018) High GC Content Cas9-Mediated Genome-Editing and Biosynthetic Gene Cluster Activation in *Saccharopolyspora erythraea*. *ACS synthetic biology* **7**, 1338-1348
3. You, D., Yao, L. L., Huang, D., Escalante-Semerena, J. C., and Ye, B. C. (2014) Acetyl Coenzyme A Synthetase Is Acetylated on Multiple Lysine Residues by a Protein Acetyltransferase with a Single Gcn5-Type N-Acetyltransferase (GNAT) Domain in *Saccharopolyspora erythraea*. *J. Bacteriol.* **196**, 3169-3178
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