

## **Additional file 1: DNA-sequences of the synthetic genes (*syatpr2* and *syfiplr*), plasmids and strains used within this study.**

### ***syatpr2* (NCBI Reference Sequence NP\_193102.1):**

ATGAGTGGAGTCCATTTTCGCACGCACAATATTCCGGTCCAACCTAAGTTAGTCGCAGCC  
ATCAAAGAAGCCGGCAACGTGAAACGCTTCCTGCCAGTGAGTTTGGCATGGATCCTAGC  
CGCATGGGCCATGCAATGCCGCCAGGTAGCGAAACGTTTCGATCAGAAAATGGAGATCCGT  
AATGCCATCAAAGCAGCGGGCATCTCCCATACCTATTTAGTCGGCGCTTGCTTTGCGGCC  
TATTTTCGGTGGCAATCTGTCTCAGATGGGAACCCTCTTTCCGCCGAAGAACAAGTGGAC  
ATTTATGGCGATGGGAACGTGAAGGTAGTATTTGTGCGACGAAGATGACATGGCGAAATAC  
ACCGCGAAAACGCTGAATGACCCACGTACCCTGAACAAAACAGTCTATGTACGTCCTACG  
GATAACATCTTGACCCAGATGGAACCTTGTGCAGATTTGGGAGAACTGACCGAGAAAAGAA  
CTGGAAAAGACGTATGTGAGCGGTAATGACTTTCTGGCCGATATCGAAGATAAAGAGATT  
TCGCATCAAGCTGGCTTAGGTCACCTTACCACATTTACTACGAAGGCTGCCTGACCGAT  
CACGAAGTTGGTGACGATGAAGAAGCTACTAACTGTATCCGGATGTGAAATACAAGCGC  
ATGGACGAATATCTGAAAATTTTCGTCTGA

### ***syfiplr* (GenBank AAC49608.1):**

ATGCTGATTAGCTTCAAATGCAAGGTGCGCATCTGGTGAGTGGCTCCTTTAAAGACTTC  
AATAGCCTCGTTGAAGCGGTAAACTGGTAGATGTGGTTATTTCCGCAATCAGTGGCGTG  
CATATCCGCAGCCATCAGATTCTGTTACAGCTGAAACTTGTGGAAGCGATCAAAGAAGCT  
GGTAACGTTAAGCGCTTCTTACCGTCTGAATTCGGGATGGATCCTGCTAAATTCATGGAT  
ACCGCTATGGAACCCGGGAAAGTCACGTTAGACGAAAAGATGGTGGTACGCAAAGCCATT  
GAGAAAGCAGGAATCCCGTTTACCTATGTGTCAGCCAATTGCTTTGCCGGCTATTTTCTG  
GGAGGTCTGTGTCAGTTTGGGAAGATCCTCCATCACGGGATTTTCGTCATCATTTCATGGC  
GATGGGAACAAGAAAGCGATTTACAATAACGAGGATGACATTGCAACTTACGCGATCAA  
ACGATCAATGATCCGCGTACTTTGAACAAAACCATCTACATTAGCCCACCTAAGAACATC  
CTTAGCCAACCGGAAGTTGTGCAGACATGGGAGAACTGATTGGCAAAGAATTGCAGAAA  
ATTACGTTGTGCAAGGAGGACTTTCTGGCATCGGTGAAGGAACTGGAGTATGCGCAGCAA  
GTGGGTCTGAGTCACTATCATGATGTCAACTACCAGGGATGCTTAACCTCCTTTGAAATT  
GGCGATGAAGAGGAAGCCTCTAACTGTATCCGGAAGTGAATACACCTCTGTTGAAGAA  
TACCTTAAACGCTATGTTGGCGGTCATCACCATCATCACCACTGA

Strains and plasmids used within this study

Strain or plasmid	Characteristics	Source or reference
<i>E. coli</i> DH5 $\alpha$	F <sup>-</sup> $\Phi$ 80 <i>lacZ</i> $\Delta$ M15 $\Delta$ ( <i>lacZYA-argF</i> ) U169 <i>recA1 endA1 hsdR17</i> (r <sub>K</sub> <sup>-</sup> , m <sub>K</sub> <sup>+</sup> ) <i>phoA supE44 thi-1 gyrA96 relA1</i> $\lambda$ <sup>-</sup>	Invitrogen
<i>E. coli</i> BL21(DE3)	F <sup>-</sup> <i>ompT hsdS<sub>B</sub></i> (r <sub>B</sub> <sup>-</sup> m <sub>B</sub> <sup>-</sup> ) <i>gal dcm</i> (DE3)	Novagen
<i>E. coli</i> OverExpress C41(DE3)	F <sup>-</sup> <i>ompT hsdS<sub>B</sub></i> (r <sub>B</sub> <sup>-</sup> m <sub>B</sub> <sup>-</sup> ) <i>gal dcm</i> (DE3)	Lucigen
<i>E. coli</i> OverExpress C43(DE3)	F <sup>-</sup> <i>ompT hsdS<sub>B</sub></i> (r <sub>B</sub> <sup>-</sup> m <sub>B</sub> <sup>-</sup> ) <i>gal dcm</i> (DE3)	Lucigen
<i>E. coli</i> SHuffle® T7 Express	<i>fhuA2 lacZ::T7 gene1</i> [lon] <i>ompT ahpC gal</i> $\lambda$ att::pNEB3-r1-cDsbC (Spec <sup>R</sup> , <i>lacI</i> <sup>q</sup> ) $\Delta$ <i>trxB sulA11 R(mcr-73::miniTn10--Tet<sup>S</sup>)2</i> [dcm] <i>R(zgb-210::Tn10--Tet<sup>S</sup>) endA1 <math>\Delta</math>gor <math>\Delta</math>(mcrC-mrr)114::IS10</i>	NEB
pET16b_cgl1	Plasmid containing <i>cgl1</i>	E. Ricklefs <i>et al.</i> , <i>J Biotechnol</i> <b>2014</b> , 191, 46–53.
pET22ssl1	Plasmid containing <i>ssl1</i> with a N-terminal His <sub>6</sub> -tag	M. Gunne, V. B. Urlacher, <i>PLoS ONE</i> <b>2012</b> , 7, e52360
pETK316N/D500G	Plasmid containing <i>cotA</i> mutant	K. Koschorreck <i>et al.</i> , <i>BMC Biotechnol.</i> <b>2009</b> , 9, 12.
pET28b_psvao	Plasmid containing <i>psvao</i> with N-terminal His <sub>6</sub> -tag	Newlandè von Rooyen, PhD thesis, University of the Free State, Bloemfontein, <b>2012</b>
pACYC <sub>tac</sub> _psvao	Plasmid containing <i>psvao</i>	This study
pCDF-Duet_syatpr2_his <sub>6</sub>	Plasmid containing <i>syatpr2</i> with C-terminal His <sub>6</sub> -tag	This study
pCDF-Duet_syfiplr	Plasmid containing <i>syfiplr</i>	This study
pCDF-Duet_syfiplr_his <sub>6</sub>	Plasmid containing <i>syfiplr</i> with C-terminal His <sub>6</sub> -tag	This study
pCDF-Duet_psvao_syatpr2_his <sub>6</sub>	Plasmid containing <i>psvao</i> and <i>syatpr2</i>	This study
pCDF-Duet_psvao_syfiplr	Plasmid containing <i>psvao</i> and <i>syfiplr</i>	This study