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Supplementary Materials

Different Strategies Affect Enzyme Packaging into Bacterial Outer Membrane Vesicles

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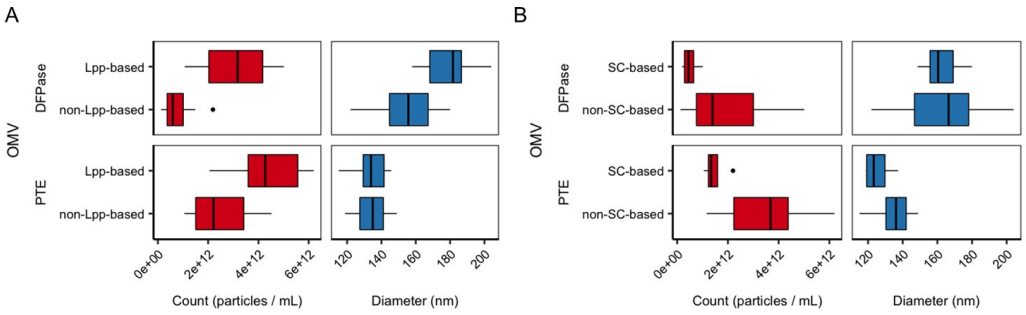

Figure S1. Differences in count and diameter by linker categorization. The count (particles/mL) and diameters (nm) are compared of (**A**) Lpp'-based versus non- Lpp'-based OMVs and (**B**) SC-based versus non-SC-based OMVs. Dots represent outliers.

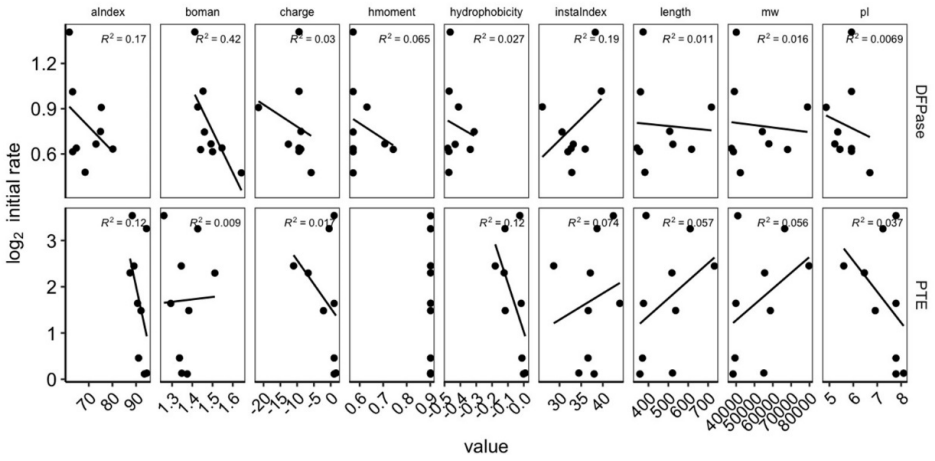

Figure S2. Visual representation of correlations between linker physiochemical characteristics and enzymatic activity (log2 initial rate). Initial rate taken from the linear portion of the first 20 minutes of the paraoxon degradation reaction. Sequence used for calculating characteristics does not include enzyme.

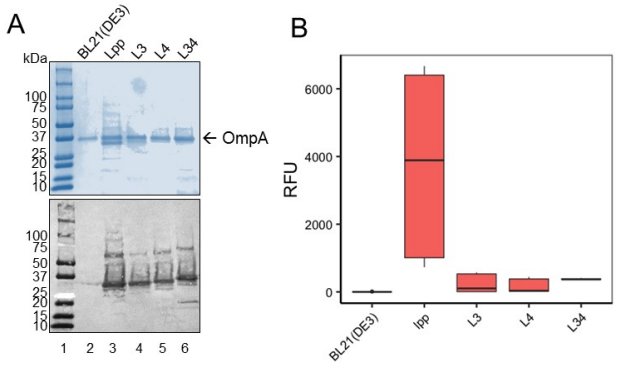

Figure S3. Effect of Lpp'-based linkers on mCherry fluorescence. (**A**) Coomassie gel of Lpp'-linker mCherry fusions (top) and corresponding immunoblot with anti-mCherry antibody (bottom) showing a major band at ~35 kDa in the total protein gel corresponding to the abundant OmpA, while 6× His-tagged-mCherry fusions are shown at increasing size corresponding to increasing linker length. Lane 1: Molecular weight marker, lane 2: BL21(DE3), lane 3: Lpp'-mCherry, lane 4: L3- mCherry, lane 5: L4- mCherry, lane 6: L34-mCherry. (**B**) Fluorescence intensity of OMVs from cultures producing Lpp'-based linkers fused to mCherry. Boxplot using data from four biological experiments in triplicate (n = 12).

Table S1. Sequences of anchors/directors and linkers.

Name	Sequence
Lpp'-PTE	TTTGTTTAACTTTAAGAAGGAGATATACCATGAAAGCGACCAAA CTGGTGCTGGGCGCGGTGATTCTGGGCAGCACCCTGCTGGCGGG C**TGCAGCAGCAACGCGAAAATTGATCAG**GGCGGTGGCAGCGG CGGTGGCAGCGGCGGTGGGAGC*CGCATTAACACCGTGCGCGGCCC GATTACCATTAGCGAAGCGGGCTTTACCCTGACCCATGAACATATTT GCGGCAGCAGCGCGGGCTTTCTGCGCGCGTGGCCGGAATTTTTTGGC AGCCGCAAAGCGCTGGCGGAAAAAGCGGTGCGCGGCCTGCGCCGCG CGCGCGCGGCGGGCGTGCGCACCATTGTGGATGTGAGCACCTTTGAT ATTGGCCGCGATGTGAGCCTGCTGGCGGAAGTGAGCCGCGCGGCGG ATGTGCATATTGTGGCGGCGACAGGCCTGTGGTTTGATCCGCCGCTG AGCATGCGCCTGCGCAGCGTGGAAGAACTGACCCAGTTTTTTCTGCG CGAAATTCAGTATGGCATTGAAGATACCGGCATTCGCGCGGGCATTA TTAAAGTGGCGACCACCGGCAAAGCGACCCCGTTTCAGGAACTGGT GCTGAAAGCGGCGGCGCGCGCGAGCCTGGCGACCGGCGTGCCGGTG ACCACCCATACCGCGGCGAGCCAGCGCGATGGCGAACAGCAGGCGG CGATTTTTGAAAGATGATCTGAGCTATCTGACCGCGCTGGCGGCGCG CGGCTATCTGATTGGCCCGAAGGCCTGAGCCCGAGCCGCGTGTGCAT TGGCCATAGCGATGATACCGTGGATCATATTCCGCATAGCGCGATTG GCCTGGAAGATAACGCGAGCGCGAGCGCGCTGCTGGGCATTCGCAG CTGGCAGACCCGCGCGCTGCTGATTAAAGCGCTGATTGATCAGGGCT ATATGAAACAGATTCTGGTGAGCAACGATTGGCTGTTTGGCTTTAGC AGCTATGTGACCAACATTATGGATGTGATGGATCGCGTGAACCCGG ATGGCATGGCGTTTATTCCGCTGCGCGTGATTCCGTTTCTGCGCGAA AAAGGCGTGCCGCAGGAAACCCTGGCGGGCATTACCGTGACCAACC CGGCGCGCTTTCTGAGCCCGACCCTGCGCGCGAGC***CACCACCACCA CCACCAC***TGA
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L34-PTE

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BtuF-PTE

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Lpp′-DFPase	TTTGTTTAACTTTAAGAAGGAGATATACCATGAAAGCGACCAAA CTGGTGCTGGGCGCGGTGATTCTGGGCAGCACCCTGCTGGCGGG C**TGCAGCAGCAACGCGAAAATTGATCA**GGGCGGTGGCAGCGG

	CGGTGGCAGCGGCGGTGGGAGC*ATGGGGGAAATCCCTGTCATTGA GCCGCTGTTTACCAAAGTCACCGAAGATATCCCGGGTGCCGAGGGTC CGGTGTTCGACAAAAACGGTGACTTTTACATCGTTGCGCCGGCAGTT GAAGTGAATGGCAAGCCTGCTGGTGAGATTCTGCGTATTGACCTGAA AACGGGCAAGAAAACGGTGATTTGTAAACCTGAAGTTAATGGTTAT GGCGGCATCCCGGCCGGTTGCCAATGCGATCGTGATGCCAACCAACT GTTCGTGGCAGACATGCGCCTGGGCCTGTTGGTCGTTCAGACCGACG GCACCTTCGAAGAAATCGCGAAAAAAGACTCCGAGGGTCGTCGTAT GCAGGGCTGCAATGACTGCGCGTTCGACTACGAGGGCAATCTGTGG ATTACCGCGCCAGCGGGCGAAGTCGCTCCGGCGGATGCTACCGCGA GCATGCAAGAAAAGTTCGGTAGCATTTATTGTTTCACGACTGATGGC CAGATGATTCAAGTCGATACGGCGTTCCAATTTCCGAATGGTATTGC GGTCCGTCACATGAACGATGGTCGCCCGTACCAGCTGATCGTTGCCG AGATGCCGACTAAGAAATTGTGGTCGTACGACATCAAGGGTCCGGC AAAGATTGAGAACAAAAAAGTGTGGGGTCACATTCCGGGTACGCAT GAGGGTGGCGCGGATGGTATGGATTTTGACGAAGATAACAACTTGC TGGTTGCAAATTGGGGTTCTAGCCACATCGAAGTCTTTGGTCCGGAT GGTGGCCAGCCGAAGATGCGCATCCGTTGCCCGTTCGAGAAGCCGA GCAATCTGCACTTCAAGCCGCAGACCAAGACGATTTTTGTGACCGAG CATGAGAACAATGCAGTTTGGAAATTTGAGTGGCAACGTAACGGTA AGAAACAGTATTGTGAAACCCTGAAGTTTGGTATCTTC**CACCACCAC CACCACCAC**TGA
L3- DFPase	TTTGTTTAACTTTAAGAAGGAGATATACCATGAAAGCGACCAAA CTGGTGCTGGGCGCGGTGATTCTGGGCAGCACCCTGCTGGCGGG C**TGCAGCAGCAACGCGAAAATTGATCA**GGGCGGTGGCAGCGG CGGTGGCAGCGGCGGTGGGAGCGCCACCGGTCCGGCAAGCGGT CCGACCAGCGCAGGTCCG*ATGGGGGAAATCCCTGTCATTGAGCCG CTGTTTACCAAAGTCACCGAAGATATCCCGGGTGCCGAGGGTCCGGT GTTCGACAAAAACGGTGACTTTTACATCGTTGCGCCGGCAGTTGAAG TGAATGGCAAGCCTGCTGGTGAGATTCTGCGTATTGACCTGAAAACG GGCAAGAAAACGGTGATTTGTAAACCTGAAGTTAATGGTTATGGCG GCATCCCGGCCGGTTGCCAATGCGATCGTGATGCCAACCAACTGTTC GTGGCAGACATGCGCCTGGGCCTGTTGGTCGTTCAGACCGACGGCAC CTTCGAAGAAATCGCGAAAAAAGACTCCGAGGGTCGTCGTATGCAG GGCTGCAATGACTGCGCGTTCGACTACGAGGGCAATCTGTGGATTAC CGCGCCAGCGGGCGAAGTCGCTCCGGCGGATGCTACCGCGAGCATG CAAGAAAAGTTCGGTAGCATTTATTGTTTCACGACTGATGGCCAGAT GATTCAAGTCGATACGGCGTTCCAATTTCCGAATGGTATTGCGGTCC GTCACATGAACGATGGTCGCCCGTACCAGCTGATCGTTGCCGAGATG CCGACTAAGAAATTGTGGTCGTACGACATCAAGGGTCCGGCAAAGA TTGAGAACAAAAAAGTGTGGGGTCACATTCCGGGTACGCATGAGGG TGGCGCGGATGGTATGGATTTTGACGAAGATAACAACTTGCTGGTTG CAAATTGGGGTTCTAGCCACATCGAAGTCTTTGGTCCGGATGGTGGC CAGCCGAAGATGCGCATCCGTTGCCCGTTCGAGAAGCCGAGCAATC TGCACTTCAAGCCGCAGACCAAGACGATTTTTGTGACCGAGCATGAG AACAATGCAGTTTGGAAATTTGAGTGGCAACGTAACGGTAAGAAAC AGTATTGTGAAACCCTGAAGTTTGGTATCTTC**CACCACCACCACCAC CAC**TGA

L4- DFPase	TTTGTTTAACTTTAAGAAGGAGATATACCATGAAAGCGACCAAA CTGGTGCTGGGCGCGGTGATTCTGGGCAGCACCCTGCTGGCGGG C**TGCAGCAGCAACGCGAAAATTGATCA**GGGCGGTGGCAGCGG CGGTGGCAGCGGCGGTGGGAGCCCGGCATCTCCGGCCCCGCCGG CTGGTCCAGCACCGCCGGCCCCAACCGCACCG*ATGGGGGAAATC* *CCTGTCATTGAGCCGCTGTTTACCAAAGTCACCGAAGATATCCCGGG* *TGCCGAGGGTCCGGTGTTCGACAAAAACGGTGACTTTTACATCGTTG* *CGCCGGCAGTTGAAGTGAATGGCAAGCCTGCTGGTGAGATTCTGCGT* *ATTGACCTGAAAACGGGCAAGAAAACGGTGATTTGTAAACCTGAAG* *TTAATGGTTATGGCGGCATCCCGGCCGGTTGCCAATGCGATCGTGAT* *GCCAACCAACTGTTCGTGGCAGACATGCGCCTGGGCCTGTTGGTCGT* *TCAGACCGACGGCACCTTCGAAGAAATCGCGAAAAAAGACTCCGAG* *GGTCGTCGTATGCAGGGCTGCAATGACTGCGCGTTCGACTACGAGG* *GCAATCTGTGGATTACCGCGCCAGCGGGCGAAGTCGCTCCGGCGGA* *TGCTACCGCGAGCATGCAAGAAAAGTTCGGTAGCATTTATTGTTTCA* *CGACTGATGGCCAGATGATTCAAGTCGATACGGCGTTCCAATTTCCG* *AATGGTATTGCGGTCCGTCACATGAACGATGGTCGCCCGTACCAGCT* *GATCGTTGCCGAGATGCCGACTAAGAAATTGTGGTCGTACGACATCA* *AGGGTCCGGCAAAGATTGAGAACAAAAAAGTGTGGGGTCACATTCC* *GGGTACGCATGAGGGTGGCGCGGATGGTATGGATTTTGACGAAGAT* *AACAACTTGCTGGTTGCAAATTGGGGTTCTAGCCACATCGAAGTCTT* *TGGTCCGGATGGTGGCCAGCCGAAGATGCGCATCCGTTGCCCGTTCG* *AGAAGCCGAGCAATCTGCACTTCAAGCCGCAGACCAAGACGATTTT* *TGTGACCGAGCATGAGAACAATGCAGTTTGGAAATTTGAGTGGCAA* *CGTAACGGTAAGAAACAGTATTGTGAAACCCTGAAGTTTGGTATCTT* *C**CACCACCACCACCACCAC***TGA
L34- DFPase	TTTGTTTAACTTTAAGAAGGAGATATACCATGAAAGCGACCAAA CTGGTGCTGGGCGCGGTGATTCTGGGCAGCACCCTGCTGGCGGG C**TGCAGCAGCAACGCGAAAATTGATCA**GGGCGGTGGCAGCGG CGGTGGCAGCGGCGGTGGGAGCGCCACCGGTCCGGCAAGCGGT CCGACCAGCGCAGGTCCGCCGGCATCTCCGGCCCCGCCGGCTGG TCCAGCACCGCCGGCCCCAACCGCACCG*ATGGGGGAAATCCCTGT* *CATTGAGCCGCTGTTTACCAAAGTCACCGAAGATATCCCGGGTGCCG* *AGGGTCCGGTGTTCGACAAAAACGGTGACTTTTACATCGTTGCGCCG* *GCAGTTGAAGTGAATGGCAAGCCTGCTGGTGAGATTCTGCGTATTGA* *CCTGAAAACGGGCAAGAAAACGGTGATTTGTAAACCTGAAGTTAAT* *GGTTATGGCGGCATCCCGGCCGGTTGCCAATGCGATCGTGATGCCAA* *CCAACTGTTCGTGGCAGACATGCGCCTGGGCCTGTTGGTCGTTCAGA* *CCGACGGCACCTTCGAAGAAATCGCGAAAAAAGACTCCGAGGGTCG* *TCGTATGCAGGGCTGCAATGACTGCGCGTTCGACTACGAGGGCAATC* *TGTGGATTACCGCGCCAGCGGGCGAAGTCGCTCCGGCGGATGCTAC* *CGCGAGCATGCAAGAAAAGTTCGGTAGCATTTATTGTTTCACGACTG* *ATGGCCAGATGATTCAAGTCGATACGGCGTTCCAATTTCCGAATGGT* *ATTGCGGTCCGTCACATGAACGATGGTCGCCCGTACCAGCTGATCGT* *TGCCGAGATGCCGACTAAGAAATTGTGGTCGTACGACATCAAGGGT* *CCGGCAAAGATTGAGAACAAAAAAGTGTGGGGTCACATTCCGGGTA* *CGCATGAGGGTGGCGCGGATGGTATGGATTTTGACGAAGATAACAA* *CTTGCTGGTTGCAAATTGGGGTTCTAGCCACATCGAAGTCTTTGGTC* *CGGATGGTGGCCAGCCGAAGATGCGCATCCGTTGCCCGTTCGAGAA* *GCCGAGCAATCTGCACTTCAAGCCGCAGACCAAGACGATTTTTGTGA*

DFPase -SC	*CCGAGCATGAGAACAATGCAGTTTGGAAATTTGAGTGGCAACGTAA CGGTAAGAAACAGTATTGTGAAACCCTGAAGTTTGGTATCTTC**CACC ACCACCACCACCAC***TGA ATGAACAATAACGATCTCTTTCAGGCATCACGTCGGCGTTTTCTG GCACAACTCGGCGGCTTAACCGTCGCCGGGATGCTGGGGCCGTC ATTGTTAACGCCGCGACGTGCGACTGCGGCGCAAGCGCGGGGTT CTCATCATCATCATCATCAT*ATGGGGGAAATCCCTGTCATTGAGCC GCTGTTTACCAAAGTCACCGAAGATATCCCGGGTGCCGAGGGTCCG GTGTTCGACAAAAACGGTGACTTTTACATCGTTGCGCCGGCAGTTGA AGTGAATGGCAAGCCTGCTGGTGAGATTCTGCGTATTGACCTGAAAA CGGGCAAGAAAACGGTGATTTGTAAACCTGAAGTTAATGGTTATGG CGGCATCCCGGCCGGTTGCCAATGCGATCGTGATGCCAACCAACTGT TCGTGGCAGACATGCGCCTGGGCCTGTTGGTCGTTCAGACCGACGGC ACCTTCGAAGAAATCGCGAAAAAAGACTCCGAGGGTCGTCGTATGC AGGGCTGCAATGACTGCGCGTTCGACTACGAGGGCAATCTGTGGATT ACCGCGCCAGCGGGCGAAGTCGCTCCGGCGGATGCTACCGCGAGCA TGCAAGAAAAGTTCGGTAGCATTTATTGTTTCACGACTGATGGCCAG ATGATTCAAGTCGATACGGCGTTCCAATTTCCGAATGGTATTGCGGT CCGTCACATGAACGATGGTCGCCCGTACCAGCTGATCGTTGCCGAGA TGCCGACTAAGAAATTGTGGTCGTACGACATCAAGGGTCCGGCAAA GATTGAGAACAAAAAAGTGTGGGGTCACATTCCGGGTACGCATGAG GGTGGCGCGGATGGTATGGATTTTGACGAAGATAACAACTTGCTGGT TGCAAATTGGGGTTCTAGCCACATCGAAGTCTTTGGTCCGGATGGTG GCCAGCCGAAGATGCGCATCCGTTGCCCGTTCGAGAAGCCGAGCAA TCTGCACTTCAAGCCGCAGACCAAGACGATTTTTGTGACCGAGCATG AGAACAATGCAGTTTGGAAATTTGAGTGGCAACGTAACGGTAAGAA ACAGTATTGTGAAACCCTGAAGTTTGGTATCTTCG*GTACCGGTGGC AGCGTTGATACCTTATCAGGTTTATCAAGTGAGCAAGGTCAGTCC GGTGATATGACAATTGAAGAAGATAGTGCTACCCATATTAAATT CTCAAAACGTGATGAGGACGGCAAAGAGTTAGCTGGTGCAACTA TGGAGTTGCGTGATTCATCTGGTAAAACTATTAGTACATGGATTT CAGATGGACAAGTGAAAGATTTCTACCTGTATCCAGGAAAATAT ACATTTGTCGAAACCGCAGCACCAGACGGTTATGAGGTAGCAAC TGCTATTACCTTTACAGTTAATGAGCAAGGTCAGGTTACTGTAAA TGGCAAAGCAACTAAAGGTGACGCTCATATTAGCGGAGGTGGA GGTGAGCTCGTCGACTAA</td></tr>
BtuF-DFPase	ATGGCTAAGTCACTGTTCAGGGCGCTGGTCGCCCTGTCTTTTCTTG CGCCACTGTGGCTCAACGCCGCGCCGCGCGTCATCACGCTTTCTC CCGCCAACACTGAACTTGCCTTTGCCGCCGGGATCACGCCGGTTG GGGTCAGCAGCTATTCCGACTATCCTCCACAAGCGCAAAAGATT GAGCAGGTTTCCACCTGGCAGGGGATGAATCTGGAACGCATTGT CGCGCTGAAACCCGATCTGGTGATTGCCTGGCGTGGAGGTAATG CCGAGCGGCAGGTTGACCAGCTGGCTTCGCTGGGAATAAAAGTG ATGTGGGTCGATGCGACAAGCATTGAACAAATTGCCAATGCGTT ACGTCAACTGGCCCCCTGGAGTCCGCAACCAGACAAGGCCGAA CAAGCCGCGCAATCCCTGCTGGATCAGTACGCGCAATTGAAAGC GCAATATGCTGATAAACCTAAAAAACGTGTTTTTCTGCAATTCGG CATTAATCCGCCATTTACCAGTGGAAAAGAGTCGATTCAGAACC AGGTACTCGAAGTTTGTGGCGGAGAAAACATCTTTAAAGACAGC

MBP- DFPase	CGGGTTCCCTGGCCGCAAGTTAGCCGCGAACAGGTGTTAGCACG CTCGCCACAGGCGATTGTCATTACAGGCGGACCGGACCAAATTC CTAAAATCAAACAATACTGGGGTGAACAGCTCAAAATTCCCGTT ATTCCTCTCACGAGTGACTGGTTTGAACGTGCAAGCCCACGTATT ATCCTCGCTGCACAACAGCTCTGTAATGCGCTTTCACAGGTAGAT AATTCGAGCTCGAACAACAACAACAATAACAATAACAACAACC TCGGGATCGAGGGAAGGATTTCACATATGAGCATTGGCACCGGC GAT*ATGGGGGAAATCCCTGTCATTGAGCCGCTGTTTACCAAAGTCAC* *CGAAGATATCCCGGGTGCCGAGGGTCCGGTGTTCGACAAAAACGGT* *GACTTTTACATCGTTGCGCCGGCAGTTGAAGTGAATGGCAAGCCTGC* *TGGTGAGATTCTGCGTATTGACCTGAAAACGGGCAAGAAAACGGTG* *ATTTGTAAACCTGAAGTTAATGGTTATGGCGGCATCCCGGCCGGTTG* *CCAATGCGATCGTGATGCCAACCAACTGTTCGTGGCAGACATGCGCC* *TGGGCCTGTTGGTCGTTCAGACCGACGGCACCTTCGAAGAAATCGCG* *AAAAAAGACTCCGAGGGTCGTCGTATGCAGGGCTGCAATGACTGCG* *CGTTCGACTACGAGGGCAATCTGTGGATTACCGCGCCAGCGGGCGA* *AGTCGCTCCGGCGGATGCTACCGCGAGCATGCAAGAAAAGTTCGGT* *AGCATTTATTGTTTCACGACTGATGGCCAGATGATTCAAGTCGATAC* *GGCGTTCCAATTTCCGAATGGTATTGCGGTCCGTCACATGAACGATG* *GTCGCCCGTACCAGCTGATCGTTGCCGAGATGCCGACTAAGAAATTG* *TGGTCGTACGACATCAAGGGTCCGGCAAAGATTGAGAACAAAAAAG* *TGTGGGGTCACATTCCGGGTACGCATGAGGGTGGCGCGGATGGTAT* *GGATTTTGACGAAGATAACAACTTGCTGGTTGCAAATTGGGGTTCTA* *GCCACATCGAAGTCTTTGGTCCGGATGGTGGCCAGCCGAAGATGCG* *CATCCGTTGCCCGTTCGAGAAGCCGAGCAATCTGCACTTCAAGCCGC* *AGACCAAGACGATTTTTGTGACCGAGCATGAGAACAATGCAGTTTG* *GAAATTTGAGTGGCAACGTAACGGTAAGAAACAGTATTGTGAAACC* *CTGAAGTTTGGTATCTTC*GAATTCCCTGCAGGTAATTAA ATGAAAATAAAAACAGGTGCACGCATCCTCGCATTATCCGCATT AACGACGATGATGTTTTCCGCCTCGGCTCTCGCCAAAATCGAAG AAGGTAAACTGGTAATCTGGATTAACGGCGATAAAGGCTATAAC GGTCTCGCTGAAGTCGGTAAGAAATTCGAGAAAGATACCGGAAT TAAAGTCACCGTTGAGCATCCGGATAAACTGGAAGAGAAATTCC CACAGGTTGCGGCAACTGGCGATGGCCCTGACATTATCTTCTGGG CACACGACCGCTTTGGTGGCTACGCTCAATCTGGCCTGTTGGCTG AAATCACCCCGGACAAAGCGTTCCAGGACAAGCTGTATCCGTTT ACCTGGGATGCCGTACGTTACAACGGCAAGCTGATTGCTTACCC GATCGCTGTTGAAGCGTTATCGCTGATTTATAACAAAGATCTGCT GCCGAACCCGCCAAAAACCTGGGAAGAGATCCCGGCGCTGGAT AAAGAACTGAAAGCGAAAGGTAAGAGCGCGCTGATGTTCAACC TGCAAGAACCGTACTTCACCTGGCCGCTGATTGCTGCTGACGGG GGTTATGCGTTCAAGTATGAAAACGGCAAGTACGACATTAAAGA CGTGGGCGTGGATAACGCTGGCGCGAAAGCGGGTCTGACCTTCC TGGTTGACCTGATTAAAAACAAACACATGAATGCAGACACCGAT TACTCCATCGCAGAAGCTGCCTTTAATAAAGGCGAAACAGCGAT GACCATCAACGGCCCGTGGGCATGGTCCAACATCGACACCAGCA AAGTGAATTATGGTGTAACGGTACTGCCGACCTTCAAGGGTCAA CCATCCAAACCGTTCGTTGGCGTGCTGAGCGCAGGTATTAACGC CGCCAGTCCGAACAAAGAGCTGGCAAAAGAGTTCCTCGAAAAC TATCTGCTGACTGATGAAGGTCTGGAAGCGGTTAATAAAGACAA

SLP- DFPaseE	ACCGCTGGGTGCCGTAGCGCTGAAGTCTTACGAGGAAGAGTTGG TGAAAGATCCGCGTATTGCCGCCACTATGGAAAACGCCCAGAAA GGTGAAATCATGCCGAACATCCCGCAGATGTCCGCTTTCTGGTAT GCCGTGCGTACTGCGGTGATCAACGCCGCCAGCGGTCGTCAGAC TGTCGATGAAGCCCTGAAAGACGCGCAGACTAATTCGAGCTCGA ACAACAACAACAATAACAATAACAACAACCTCGGGATCGAGGG AAGGATTTCACATATGAGCATTGGCACCGGCGAT*ATGGGGGAAA* *TCCCTGTCATTGAGCCGCTGTTTACCAAAGTCACCGAAGATATCCCG* *GGTGCCGAGGGTCCGGTGTTCGACAAAAACGGTGACTTTTACATCGT* *TGCGCCGGCAGTTGAAGTGAATGGCAAGCCTGCTGGTGAGATTCTGC* *GTATTGACCTGAAAACGGGCAAGAAAACGGTGATTTGTAAACCTGA* *AGTTAATGGTTATGGCGGCATCCCGGCCGGTTGCCAATGCGATCGTG* *ATGCCAACCAACTGTTCGTGGCAGACATGCGCCTGGGCCTGTTGGTC* *GTTCAGACCGACGGCACCTTCGAAGAAATCGCGAAAAAAGACTCCG* *AGGGTCGTCGTATGCAGGGCTGCAATGACTGCGCGTTCGACTACGA* *GGGCAATCTGTGGATTACCGCGCCAGCGGGCGAAGTCGCTCCGGCG* *GATGCTACCGCGAGCATGCAAGAAAAGTTCGGTAGCATTTATTGTTT* *CACGACTGATGGCCAGATGATTCAAGTCGATACGGCGTTCCAATTTC* *CGAATGGTATTGCGGTCCGTCACATGAACGATGGTCGCCCGTACCAG* *CTGATCGTTGCCGAGATGCCGACTAAGAAATTGTGGTCGTACGACAT* *CAAGGGTCCGGCAAAGATTGAGAACAAAAAAGTGTGGGGTCACATT* *CCGGGTACGCATGAGGGTGGCGCGGATGGTATGGATTTTGACGAAG* *ATAACAACTTGCTGGTTGCAAATTGGGGTTCTAGCCACATCGAAGTC* *TTTGGTCCGGATGGTGGCCAGCCGAAGATGCGCATCCGTTGCCCGTT* *CGAGAAGCCGAGCAATCTGCACTTCAAGCCGCAGACCAAGACGATT* *TTTGTGACCGAGCATGAGAACAATGCAGTTTGGAAATTTGAGTGGCA* *ACGTAACGGTAAGAAACAGTATTGTGAAACCCTGAAGTTTGGTATCT* *TC*GAATTCCCTGCAGGTAATTAA ATGAACATGACAAAAGGTGCACTCATCCTCAGCCTTTCATTTTTG CTTGCCGCATGTAGTTCAATTCCGCAAAATATCAAAGGCAATAA CCAACCTGATATTCAAAAAAGTTTTGTTGCTGTTCATAACCAGCC GGGGTTATATGTTGGTCAACAAGCGCGCTTTGGTGGGAAGGTTAT CAACGTTATCAATGGCAAAACGGATACGTTGTTAGAAATCTCTGT ATTACCGTTGGATAGCTATGCGAAGCCTGATATTGAAGCCAACT ATCAGGGCCGACTGCTCGCCAGACAAAGCGGCTTCCTTGATCCA GTGAACTATCGTAATCACTTTGTTACCATCCTCGGCACCATTCAG GGTGAACAACCTGGCTTTATCAATAAAGTCCCGTATAACTTCCTG GAAGTGAATATGCAGGGCATCCAGGTGTGGCATTTGAGAGAAGT GGTTAATACCACCTATAACCTGTGGGATTACGGCTATGGTGCATT CTGGCCGGAACCGGGCTGGGGTGCGCCTTACTACACCAATGCGG TGAGTCAGGTAACACCTGAGCTGGTCAAAAATTCGAGCTCGAAC AACAACAACAATAACAATAACAACAACCTCGGGATCGAGGGAA GGATTTCACATATGAGCATTGGCACCGGCGAT*ATGGGGGAAATCC* *CTGTCATTGAGCCGCTGTTTACCAAAGTCACCGAAGATATCCCGGGT* *GCCGAGGGTCCGGTGTTCGACAAAAACGGTGACTTTTACATCGTTGC* *GCCGGCAGTTGAAGTGAATGGCAAGCCTGCTGGTGAGATTCTGCGT* *ATTGACCTGAAAACGGGCAAGAAAACGGTGATTTGTAAACCTGAAG* *TTAATGGTTATGGCGGCATCCCGGCCGGTTGCCAATGCGATCGTGAT* *GCCAACCAACTGTTCGTGGCAGACATGCGCCTGGGCCTGTTGGTCGT* *TCAGACCGACGGCACCTTCGAAGAAATCGCGAAAAAAGACTCCGAG*

SlyB- DFPase	*GGTCGTCGTATGCAGGGCTGCAATGACTGCGCGTTCGACTACGAGG* *GCAATCTGTGGATTACCGCGCCAGCGGGCGAAGTCGCTCCGGCGGA* *TGCTACCGCGAGCATGCAAGAAAAGTTCGGTAGCATTTATTGTTTCA* *CGACTGATGGCCAGATGATTCAAGTCGATACGGCGTTCCAATTTCCG* *AATGGTATTGCGGTCCGTCACATGAACGATGGTCGCCCGTACCAGCT* *GATCGTTGCCGAGATGCCGACTAAGAAATTGTGGTCGTACGACATCA* *AGGGTCCGGCAAAGATTGAGAACAAAAAAGTGTGGGGTCACATTCC* *GGGTACGCATGAGGGTGGCGCGGATGGTATGGATTTTGACGAAGAT* *AACAACTTGCTGGTTGCAAATTGGGGTTCTAGCCACATCGAAGTCTT* *TGGTCCGGATGGTGGCCAGCCGAAGATGCGCATCCGTTGCCCGTTCG* *AGAAGCCGAGCAATCTGCACTTCAAGCCGCAGACCAAGACGATTTT* *TGTGACCGAGCATGAGAACAATGCAGTTTGGAAATTTGAGTGGCAA* *CGTAACGGTAAGAAACAGTATTGTGAAACCCTGAAGTTTGGTATCTT* *C*GAATTCCCTGCAGGTAATTAA ATGATTAAACGCGTATTGGTTGTTTCAATGGTAGGTCTGTCTCTTG TCGGTTGTGTTAATAACGACACCCTGTCAGGGGATGTTTATACCG CTTCTGAAGCGAAACAAGTACAGAATGTCAGCTATGGCACCATC GTTAACGTACGTCCGGTACAGATTCAGGGCGGTGATGATTCCAA CGTTATCGGTGCAATTGGCGGTGCTGTTCTTGGTGGTTTCCTGGGG AATACTGTTGGTGGCGGAACCGGGCGTTCTCTGGCTACTGCAGC AGGCGCTGTTGCAGGTGGCGTAGCTGGTCAGGGCGTACAGAGTG CAATGAACAAAACGCAGGGTGTCGAGCTGGAAATTCGTAAAGA CGATGGTAATACCATCATGGTGGTACAGAAACAAGGCAACACTC GTTTCTCTCCGGGCCAACGTGTCGTACTGGCCAGCAATGGCAGTC AGGTGACCGTTTCTCCGCGCAATTCGAGCTCGAACAACAACAAC AATAACAATAACAACAACCTCGGGATCGAGGGAAGGATTTCAC ATATGAGCATTGGCACCGGCGAT*ATGGGGGAAATCCCTGTCATTG* *AGCCGCTGTTTACCAAAGTCACCGAAGATATCCCGGGTGCCGAGGG* *TCCGGTGTTCGACAAAAACGGTGACTTTTACATCGTTGCGCCGGCAG* *TTGAAGTGAATGGCAAGCCTGCTGGTGAGATTCTGCGTATTGACCTG* *AAAACGGGCAAGAAAACGGTGATTTGTAAACCTGAAGTTAATGGTT* *ATGGCGGCATCCCGGCCGGTTGCCAATGCGATCGTGATGCCAACCA* *ACTGTTCGTGGCAGACATGCGCCTGGGCCTGTTGGTCGTTCAGACCG* *ACGGCACCTTCGAAGAAATCGCGAAAAAAGACTCCGAGGGTCGTCG* *TATGCAGGGCTGCAATGACTGCGCGTTCGACTACGAGGGCAATCTGT* *GGATTACCGCGCCAGCGGGCGAAGTCGCTCCGGCGGATGCTACCGC* *GAGCATGCAAGAAAAGTTCGGTAGCATTTATTGTTTCACGACTGATG* *GCCAGATGATTCAAGTCGATACGGCGTTCCAATTTCCGAATGGTATT* *GCGGTCCGTCACATGAACGATGGTCGCCCGTACCAGCTGATCGTTGC* *CGAGATGCCGACTAAGAAATTGTGGTCGTACGACATCAAGGGTCCG* *GCAAAGATTGAGAACAAAAAAGTGTGGGGTCACATTCCGGGTACGC* *ATGAGGGTGGCGCGGATGGTATGGATTTTGACGAAGATAACAACTT* *GCTGGTTGCAAATTGGGGTTCTAGCCACATCGAAGTCTTTGGTCCGG* *ATGGTGGCCAGCCGAAGATGCGCATCCGTTGCCCGTTCGAGAAGCC* *GAGCAATCTGCACTTCAAGCCGCAGACCAAGACGATTTTTGTGACCG* *AGCATGAGAACAATGCAGTTTGGAAATTTGAGTGGCAACGTAACGG* *TAAGAAACAGTATTGTGAAACCCTGAAGTTTGGTATCTTC*GAATTCC CTGCAGGTAATTAA

RBS – Underlined.

Lpp' – Bold

Linker/Fusion partner - Shaded

6x-His – Bold, Italics

PTE/DFPase – Italics, Underlined