

SUPPLEMENTARY INFORMATION

Supplementary Figure 1. ESI-MS spectra of N-acetylcysteamine showing absence of malonyl transferase activity. (A) ESI-MS of N-acetylcysteamine (N-acetyl cysteamine (F.W. 119) + Na⁺ (F.W. 23) = 142) (B) malonyl transferase reaction performed on N-acetyl cysteamine. No product is observed.

Supplementary Figure 2. CD spectra of various wild type and mutant acyl carrier proteins. (A) shows CD spectra of wild type and various mutants of PfACP. (B) shows CD spectra of wild type and various mutants of BnACP. (C) shows CD spectra of wild type and various mutants of EcACP. Based on the CD spectra of the mutants of PfACP, mutants of BnACP and mutants of EcACP retained their structure akin to their wild type counterparts and were used as specified in the text to study self-acylation and/or transferase behavior.

Supplementary Figure 3. Kinetic characterization of malonyl transferase activity of various mutants of *P. falciparum* acyl carrier protein.

(A), (B), and (C) represent the malonyl transferase activities of E20APfACP, T65APfACP and Q67RPfACP, respectively, as a function of their concentrations.

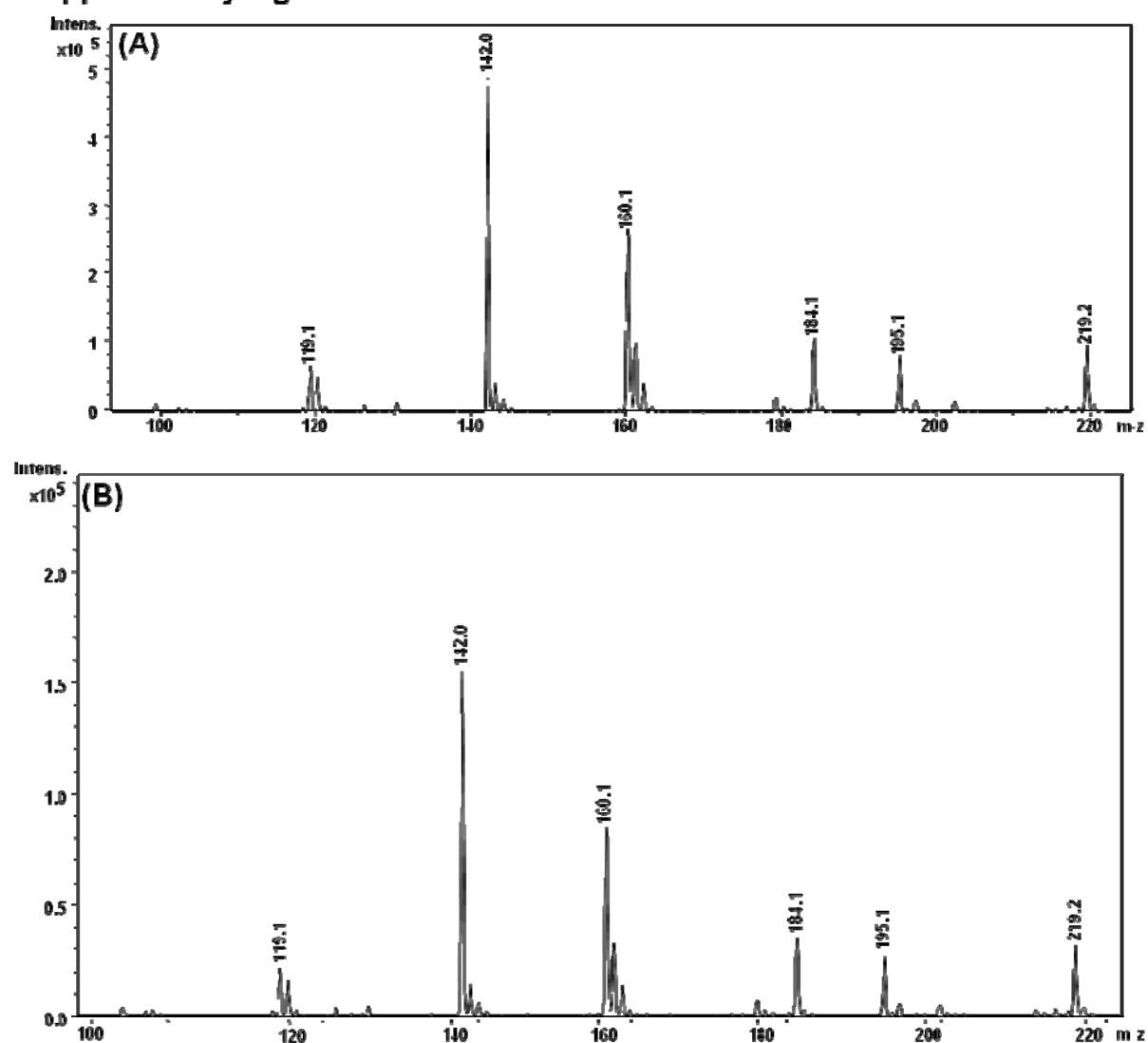
Supplementary Figure 4. Kinetic characterization of malonyl transferase activity of various mutants of *E. coli* acyl carrier protein.

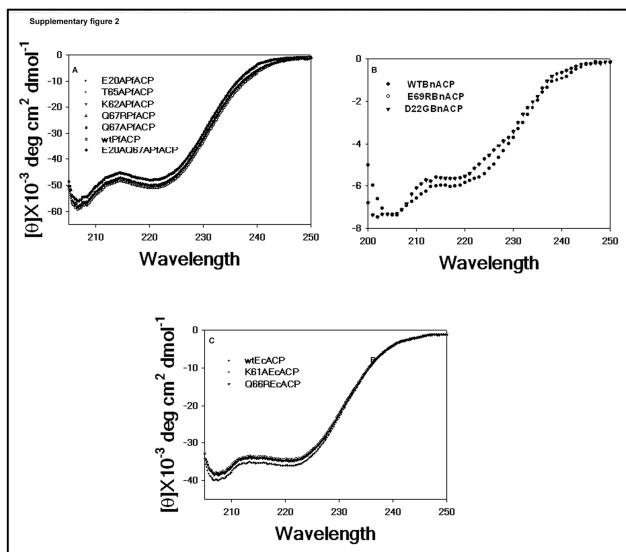
(A) and (B) represent the malonyl transferase activities as a function of the concentration of the Wild type and Q66R EcACP, respectively.

Supplementary Figure 5. Kinetic characterization of malonyl transferase activity of *B. napus* acyl carrier protein.

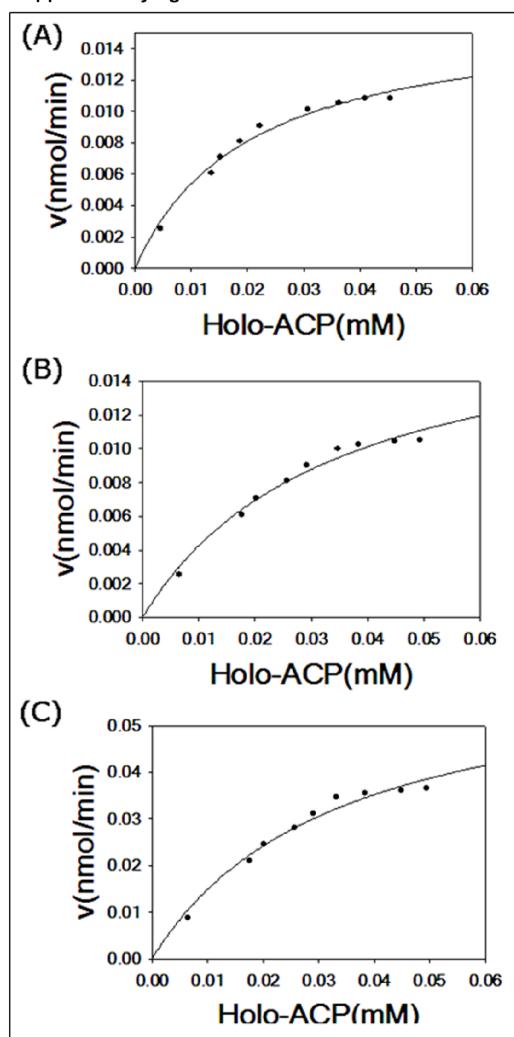
Graph represents the malonyl transferase activities as a function of the concentration of E69RBnACP.

Supplementary Figure 1

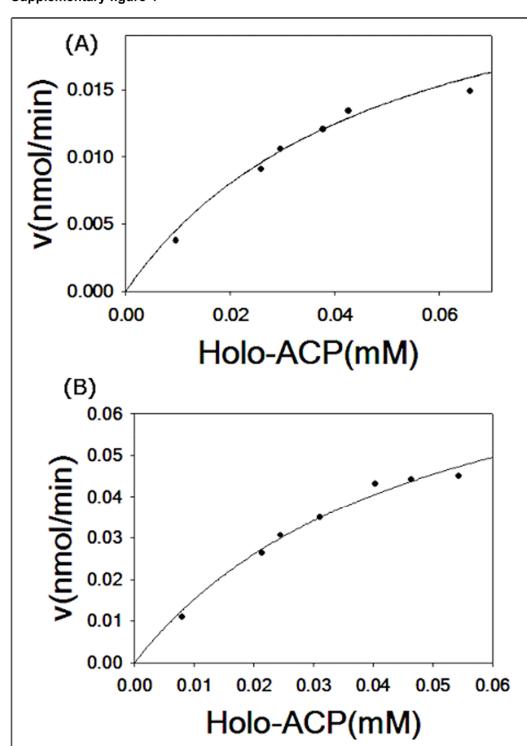




Supplementary figure 3



Supplementary figure 4



Supplementary figure 5

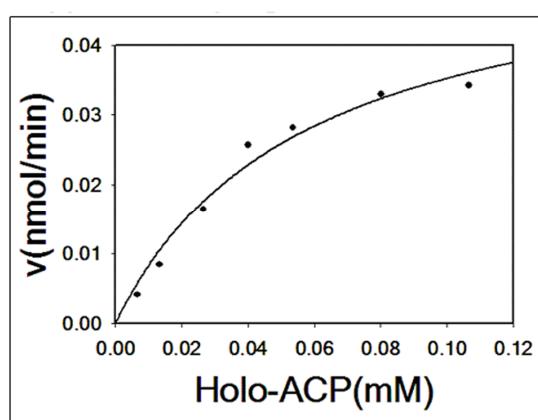


Table 1: List of primers used for mutagenesis experiments

T65APfACP for	5'-GATGCTTGAAAATTAAATGCCGTTCAAGATGCTATAG -3'
T65APfACP rev	5'-CTATAGCATCTGAACGGCATTAAATTCAAAGCATC -3'
T65GPfACP for	5'-GATGCTTGAAAATTAAATGGCGTTCAAGATGCTATAG-3'
T65GPfACP rev	5'-CTATAGCATCTGAACGCCATTAAATTCAAAGCATC-3'
K62A PfACP for	5'-CTGATCAAGATGCTTGGCCATTAAATACAGTTCAAGATGC-3'
K62A PfACP rev	5'-GCATCTTGAACGTGATTAATGGCCAAAGCATCTTGATCAG-3'
Q67A PfACP for	5'-GCTTGAAAATTAAATACAGTTGCCATGCTATAGATTATAG -3'
Q67A PfACP rev	5'-CTATATAATCTATAGCATCGGCAACTGTATTAATTCAAAGC -3'
Q67G PfACP for	5'-GCTTGAAAATTAAATACAGTTGGCGATGCTATAGATTATAG -3'
Q67G PfACP rev	5'-CTATATAATCTATAGCATGCCAACTGTATTAATTCAAAGC -3'
Q67R PfACP for	5'-GCTTGAAAATTAAATACAGTTCGCGATGCTATAGATTATAG -3'
Q67R PfACP rev	5'- CTATATAATCTATAGCATCGCGAACGTGATTAATTCAAAGC-3'
EcACP for	5'-GGAATTCCATATGAGCACCATCGAAGAACGTGTG-3'
EcACP rev	5'-CGGGATCCTTACGCCTGGTTCCGTTAATATAG-3'
K62A EcACP for	5'-CCGGACGAAGAACGCTGAGGCCATCACCACCGTCAGGC-3'
K62A EcACP rev	5'-GCCTGAACGGTGGTATGGCCTCAGCTTCTCGTCCGG-3'
Q67R EcACP for	5'-GAGAAAATCACCACCGTTGCCGCTCGCATTGTCTATATTAACGG-3'
Q67R EcACP rev	5'-CCGTTAATATAGACAATGCGAGCGGCAACGGTGGTATTTCTC-3'
Q67G EcACP for	5'-GAGAAAATCACCACCGTTGCCGCTGGCATTGTCTATATTAACGG-3'
Q67G EcACP rev	5'-CCGTTAATATAGACAATGCCAGCGGCAACGGTGGTATTTCTC-3'
Q67A EcACP for	5'-GAGAAAATCACCACCGTTGCCGCTGCCATTGTCTATATTAACGG-3'
Q67A EcACP rev	5'-CCGTTAATATAGACAATGGCAGCGGCAACGGTGGTATTTCTC-3'
E67R BnACP for	5'- GAAGATCACACCGTGCAGCGAACGCTGCTGAGCTCATTG-3'
E67R BnACP rev	5'-CAATGAGCTCAGCAGCTCGCGACCCTGTGATCTTC -3'
E67Q BnACP for	5'-GAAGATCACACCGTGCAGGAAGCTGCTGAGCTCATTG-3'
E67Q BnACP rev	5'-CAATGAGCTCAGCAGCTCCTGCACCGTTGTGATCTTC-3'
E67A BnACP for	5'-GAAGATCACACCGTGGCCGAAGCTGCTGAGCTCATTG-3'
E67A BnACP rev	5'-CAATGAGCTCAGCAGCTCGGCCACCGTTGTGATCTTC-3'