SUPPLEMENTARY INFORMATION

Converting cytochrome *c* into a DyP-like metalloenzyme

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Supplementary Table 1: Oligonucleotides used for construction of expression vectors for mutants. The underlined bases signify the introduced mutations.

Mutants	Primers (top, sense; bottom, anti-sense)
M80V	5′– ACGAAAGTGATCTTCGCGGGCATCAAA – 3′
	5′– GAAGATCACTTTCGTGCCCGGGATGTA – 3′
Y48H	5′– TTCACGCATACGGACGCGAACAAAAAC – 3′
	5′– GTCCGTATGCGTGAAGCCCGGCGCCTG – 3′
Y67H	5′– ATGGAACATCTCGAGAACCCGAAAAAA – 3′
	5′– CTCGAGATGTTCCATCAGCGTTTCTTC – 3′
Y97H	5′– ATCGCGCATCTGAAAAAGGCGACGAAC – 3′
	5′– CGCGAAGACCTGATCGCGCATCTGAAA – 3′
P76W	5′– TACATCTGGGGCACGAAAATGATCTTC – 3′
	5′– CGTGCCCCAGATGTATTTTTTCGGGTT – 3′
G41S	5′– AAAACGTCTCAGGCGCCGGGCTTCACG – 3′
	5′– CGCCTGAGACGTTTTGCGGCCGAACAG – 3′
A51V	5′– ACGGACGTGAACAAAAACAAAGGCATC – 3′
	5′– TTTGTTCACGTCCGTGTACGTGAAGCC – 3′
G29D	5′– AAAACCGACCCCAACCTGCACGGCCTG – 3′
	5′– GTTGGGGTCGGTTTTGTGTTTGCCGCC – 3′

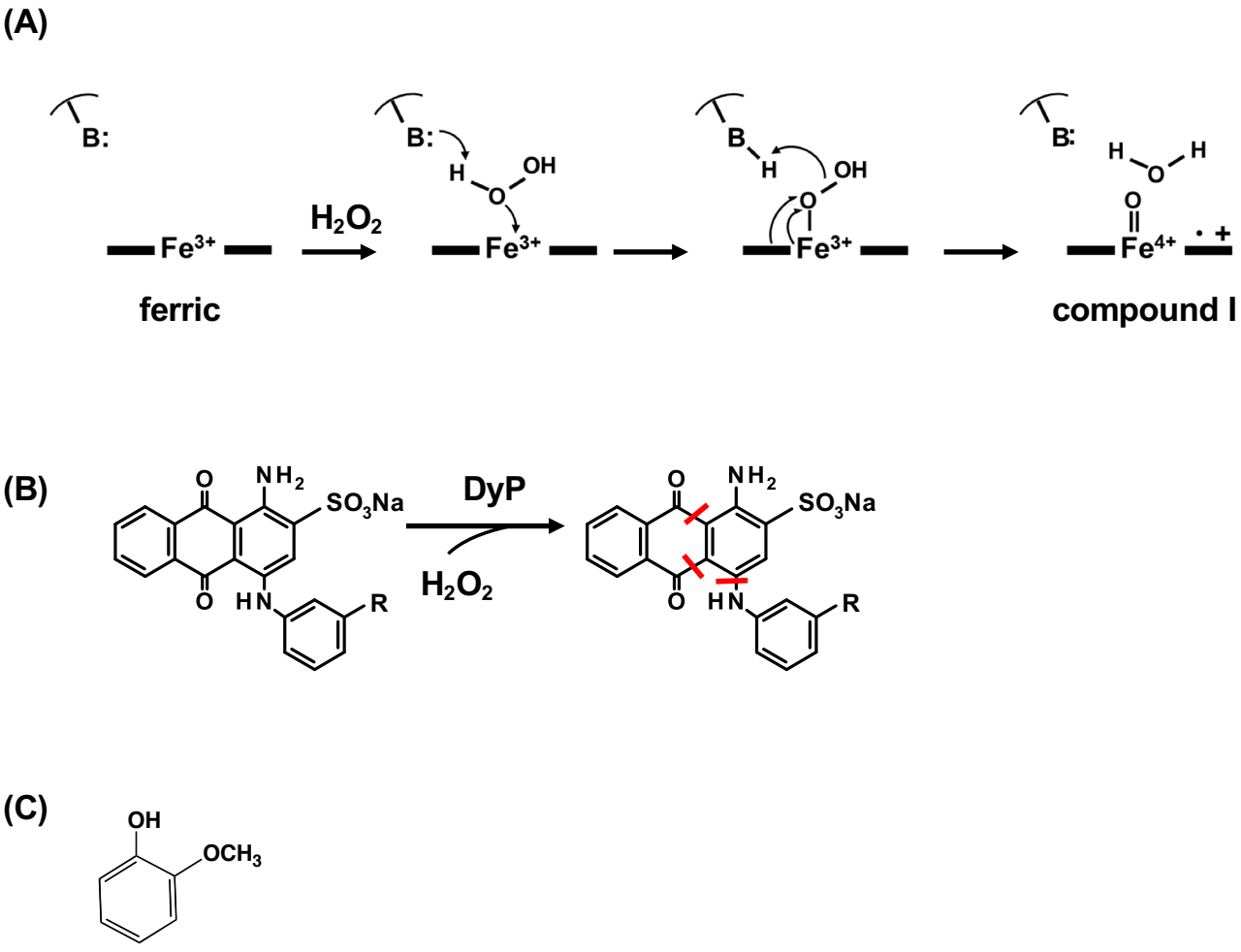

Fig. S1 (A) The mechanism of compound I formation by the reaction of DyP and H_2O_2 (Sugano *et al*., *J. Biol. Chem.*, 2007, 282, 36652–36658). (B) degradation of RB19. (C) molecular structure of guaiacol.

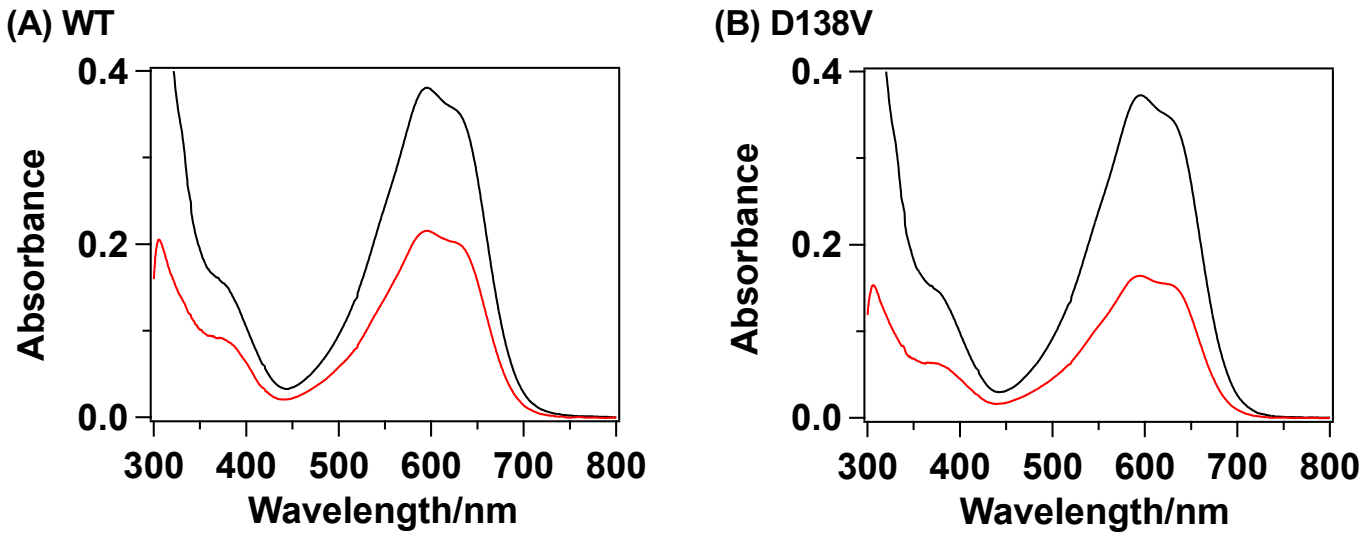

Fig. S2 Absorbance of the supernatant of culture medium with RB19 (40 μM) of *E. coli* expressed (A) WT and (B) D138V *Vc*DyP; 0h (black line) and 24h (red line).

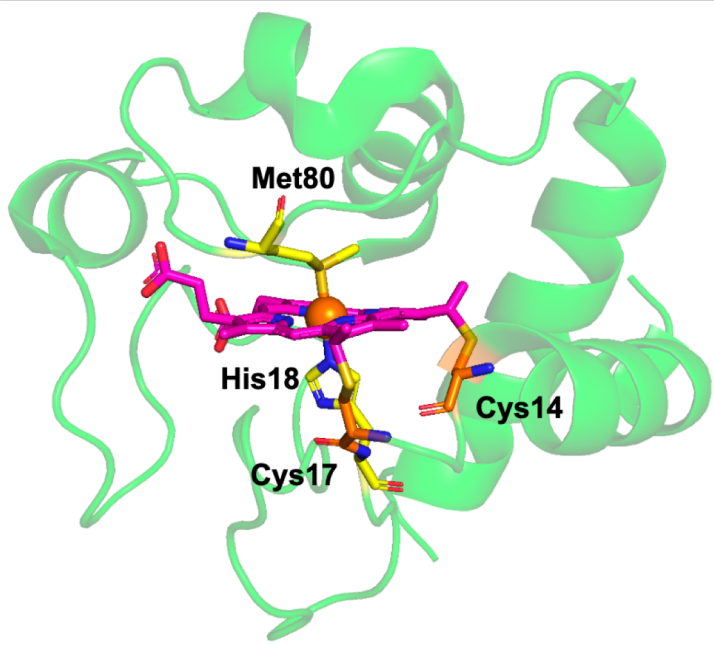

Fig. S3 X-ray crystal structure of cyt *c* (PDB ID: 6K9I)

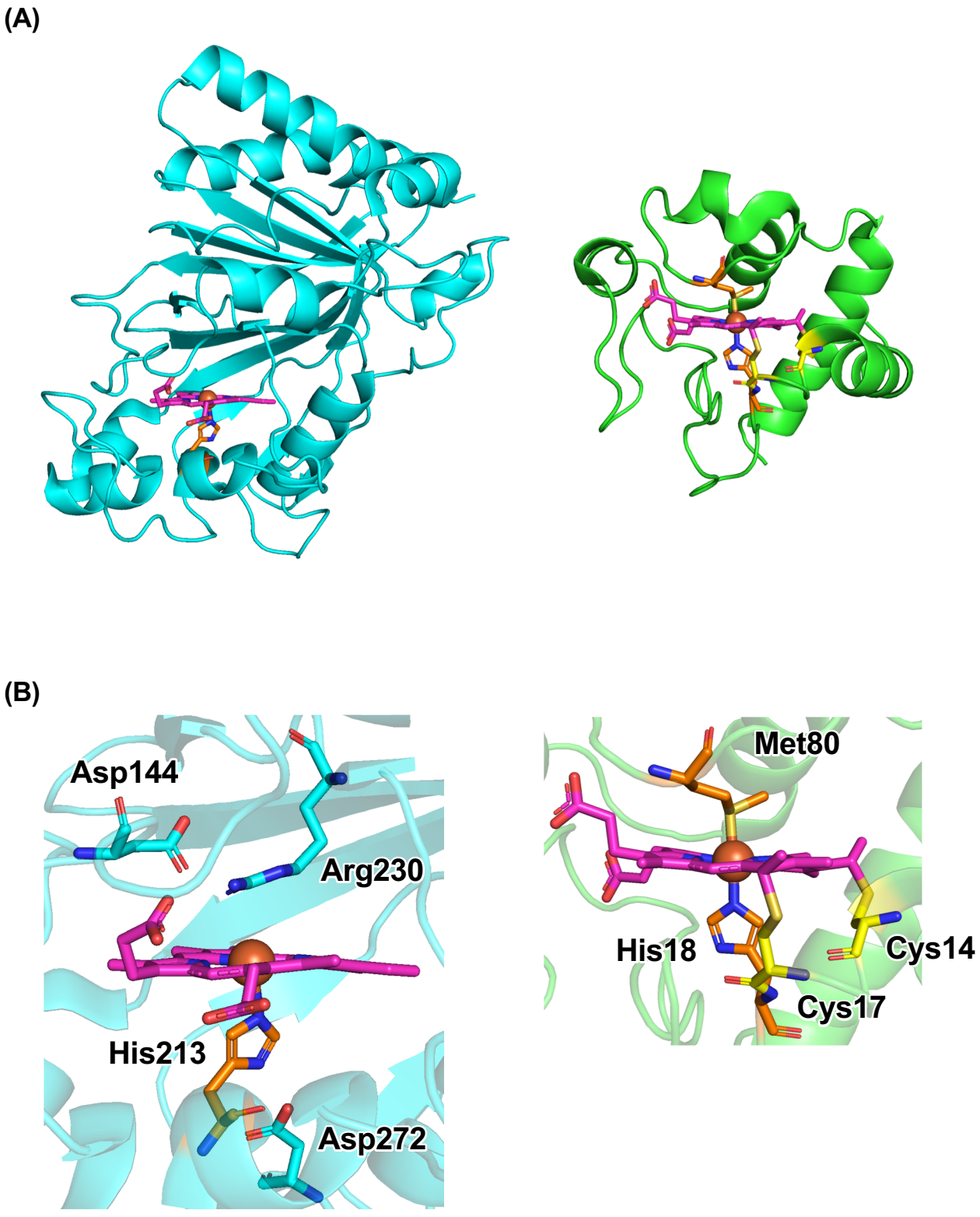

Fig. S4 Structural comparison between *Vc*DyP and cyt *c*. Comparison of overall structures (A) and structures around heme (B).

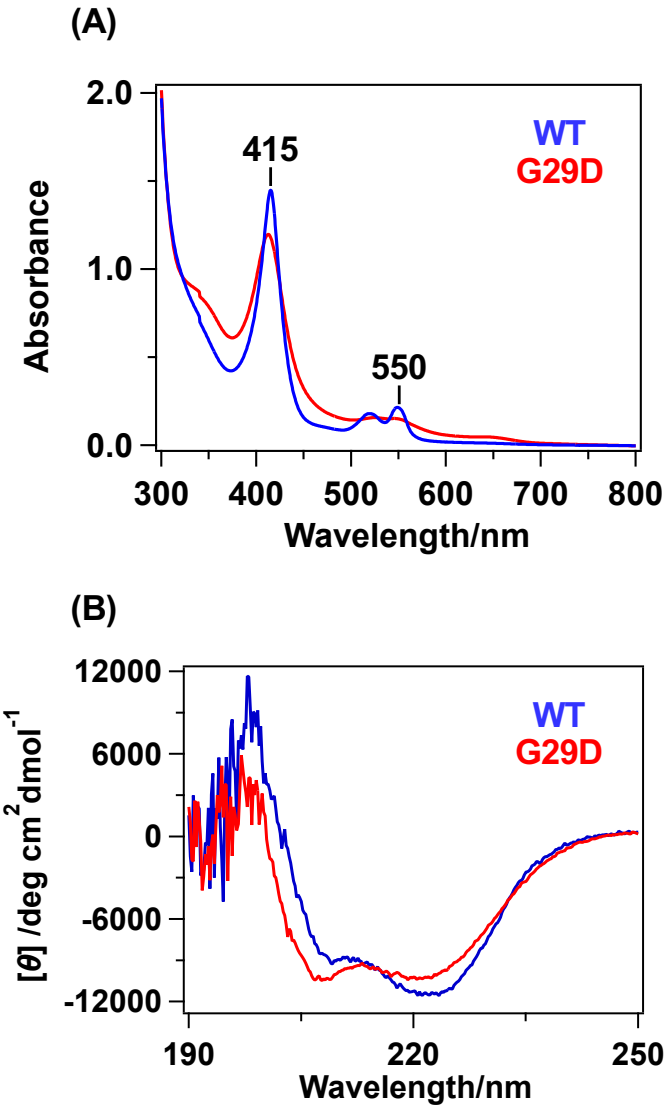

Fig. S5 (A) Absorbance of supernatant of lysate of *E. coli* expressed WT and G29D cyt *c*. (B) CD spectra of WT and G29D as purified.

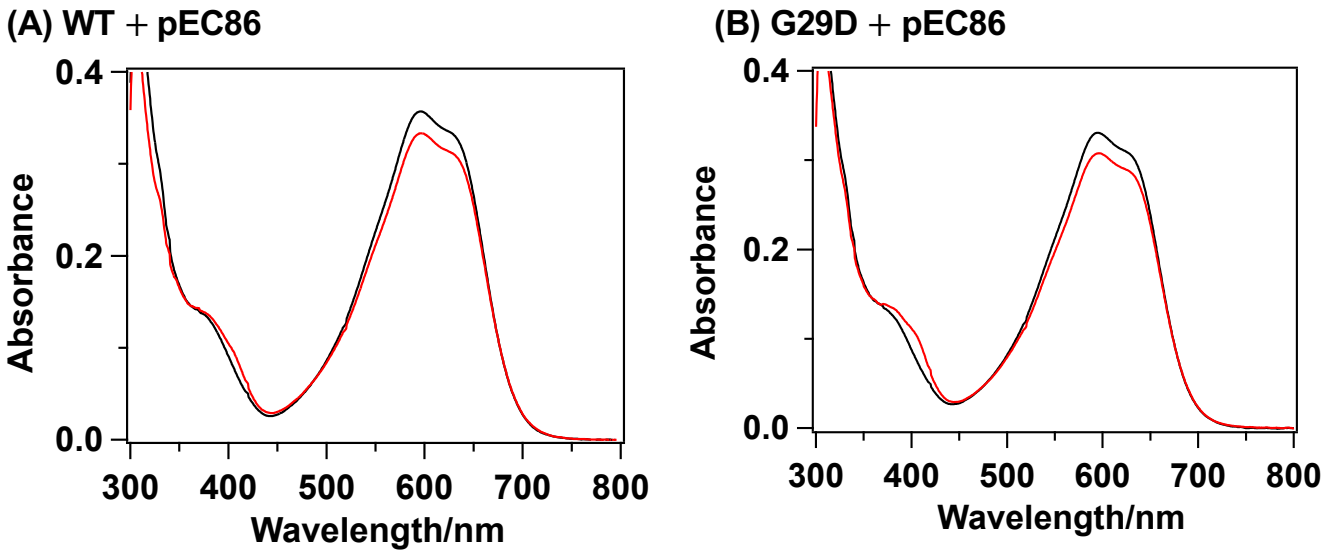

Fig. S6 Absorbance of the supernatant of culture medium with RB19 (40 μM) of *E. coli* expressed (A) WT cyt *c* + pEC86, (B) WT cyt *c*, (C) G29D cyt *c* + pEC86, and (D) G29D cyt *c*; 0h (black line) and 24h (red line).