SUPPORTING INFORMATION

 $\underline{\textbf{\textit{Title:}}}$ A Mechanistic Comparison between Cytochrome P_{450} - and Chloroperoxidase-Catalyzed N-Dealkylation of N,N-Dialkyl Anilines

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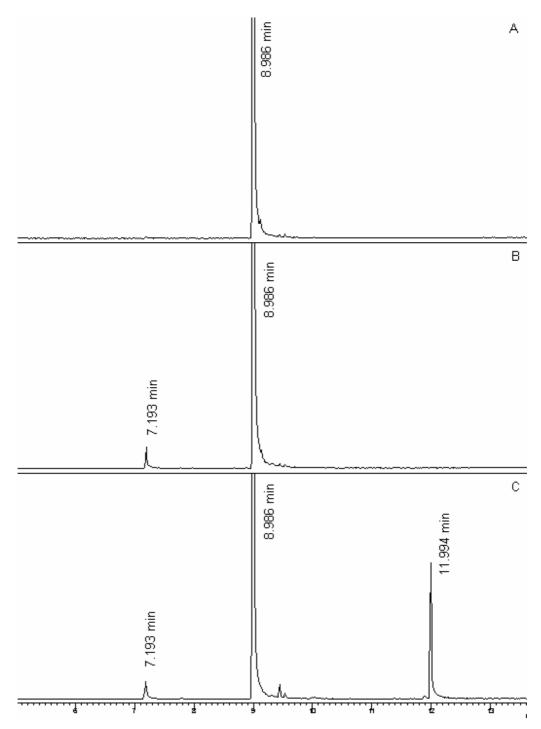


Figure S1. GC traces of Oxidation of 4-Chloro-N-Cyclopropyl-N-Methylaniline by CPO

Reaction in the absence (Panel B) and presence of cyanide (Panel C). Control reaction with H_2O_2 (Panel A). RT: 7.193 min, 4-Chloro-N-methylaniline; 8.986 min, substrate; 11.994 min CN-adduct.

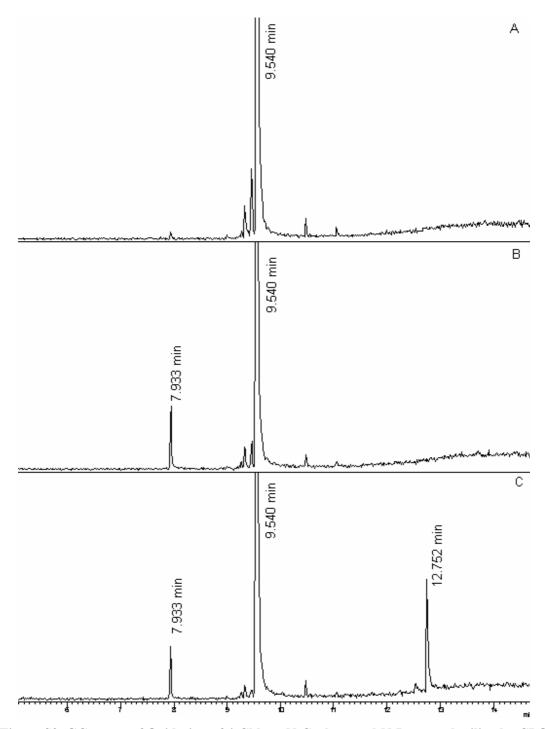


Figure S2. GC traces of Oxidation of 4-Chloro-N-Cyclopropyl-N-Isopropylaniline by CPO

Control reaction with H_2O_2 (Panel A), in the absence (Panel B) and presence of Cyanide (Panel C). RT: 7.933 min, 4-Chloro-N-isopropylaniline; 9.540 min, substrate; 12.752 min CN-adduct.

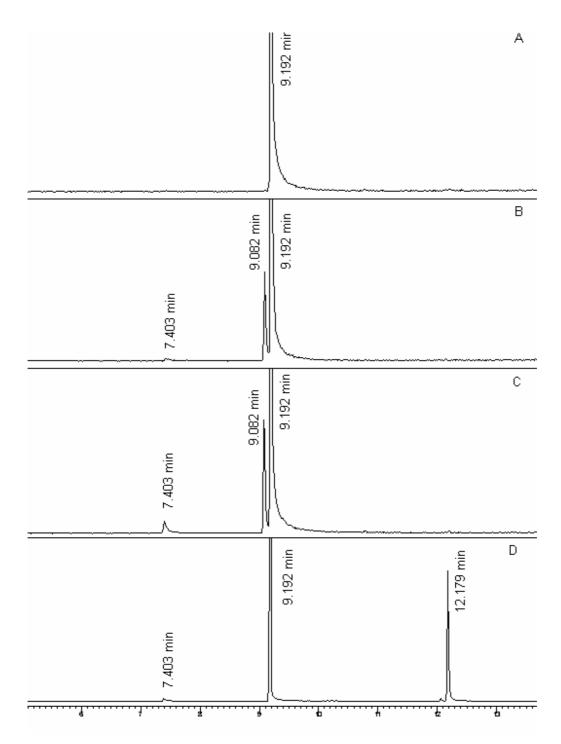
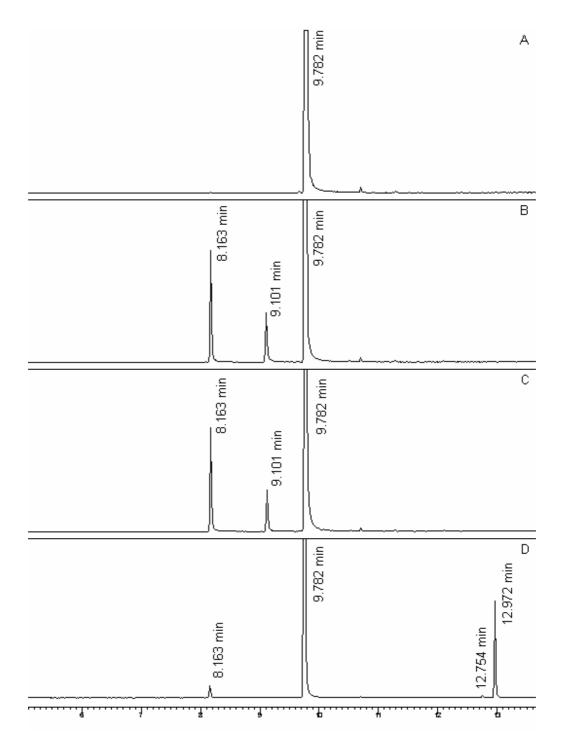


Figure S3. Oxidative N-Dealkylation of 4-Chloro-N-Cyclopropyl-N-Methylaniline by CYP2B1 and HRP Panel A, Control; Panel B, CYP2B1/NADPH oxidation; Panel C, CYP2B1/NADPH with cyanide; and Panel D, HRP oxidation with cyanide. RT = 7.403 min, 4-chloro-N-methylaniline; 9.062 min, 4-chloro-N-cyclopropylamine; 9.192 min, substrate, and 12.179 min, CN-adduct.



Figure~S4.~Oxidative~N-Dealky lation~of~4-Chloro-N-Cyclopropyl-N-Isopropylaniline~by~CYP2B1~and~HRP.

Panel A, Control; Panel B, CYP2B1/NADPH oxidation; Panel C, CYP2B1/NADPH with cyanide; and Panel D, HRP oxidation with cyanide. RT = 8.163 min, 4-chloro-N-isopropylaniline; 9.101 min, 4-chloro-N-cyclopropylamine; 9.782 min, substrate, and 12.754 and 12.972 min, CN-adducts.