Mechanisms of Herb-Drug Interactions Involving Cinnamon and Cytochrome P450 2A6: Focus on Time-dependent Inhibition by Cinnamaldehyde and 2-Methoxycinnamaldehyde

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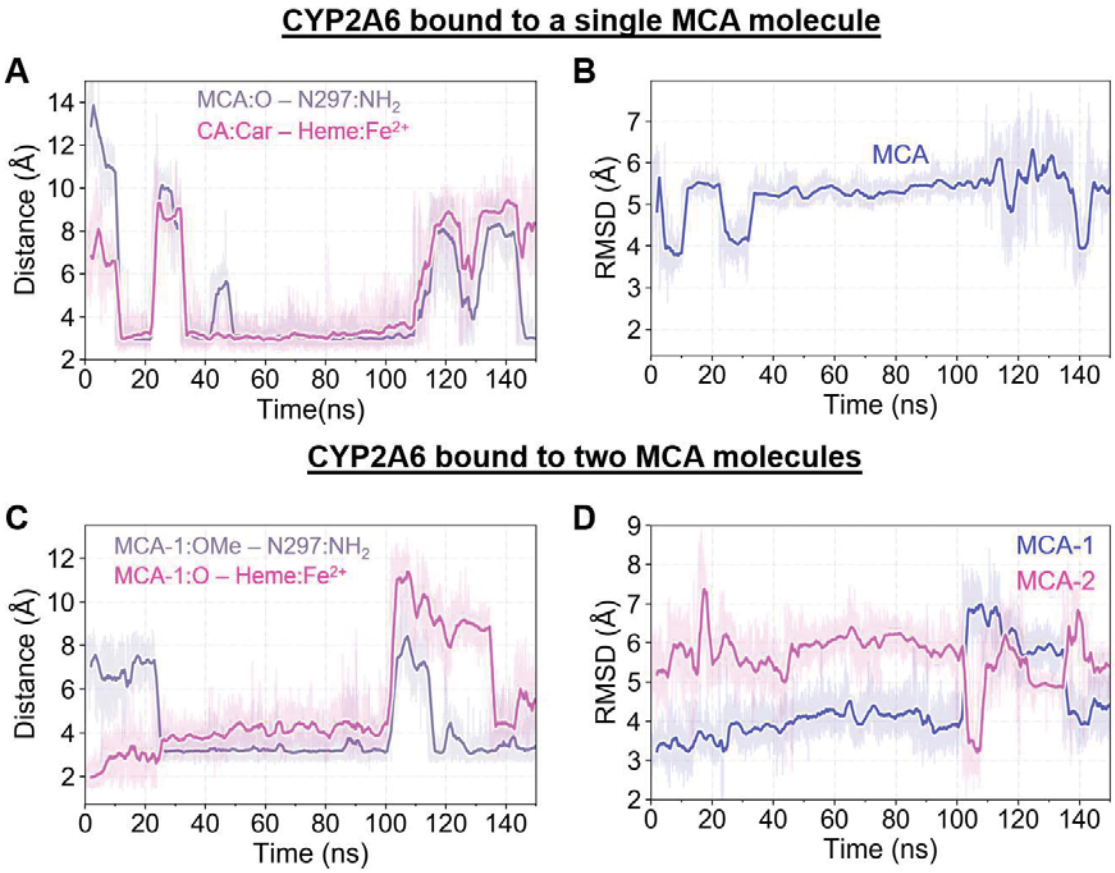

Supplemental Figure 3. Molecular interactions and stability of 2-methoxy cinnamaldehyde (MCA), one and two copies with the binding site of CYP2A6. A) The time evolution of critical interactions of one MCA's carbonyl oxygen engaging in an H-bond interaction with the N297 side chain amido group as well as the aromatic ring (distance between only one of the aromatic carbon atom) in close proximity to the heme iron. B) The RMSD changes in the single MCA molecule within the binding site, indicating its dynamic nature. C) The presence of two MCA molecules within the binding site stabilized each other in their initial docked positions until 100 ns and allowed the expected interactions of MCA-1's methoxyl oxygen with N297 and carbonyl oxygen atom with the heme iron. D) The RMSD plot indicates the stabilization effect of two MCA molecules on each other until 100 ns, after which the molecules rearrange slightly.