

9-(3,4-Dimethyl-5-pentyl-furan-2-yl) nonanoic Acid and 9-(3,4-Dimethyl-5-propyl-furan-2-yl) nonanoic Acid: New Naturally Occurring Peroxidase Inhibitors

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Horseradish Peroxidase, 9-(3,4-dimethyl-5-pentyl-furan-2-yl) nonanoic Acid [diMeF(9,5)], 9-(3,4-dimethyl-5-propyl-furan-2-yl) nonanoic Acid [diMeF(9,3)], Competitive Inhibitor, Indole-3-acetic Acid

9-(3,4-Dimethyl-5-pentyl-furan-2-yl) nonanoic acid [diMeF(9,5)] and 9-(3,4-dimethyl-5-propyl-furan-2-yl) nonanoic acid [diMeF(9,3)] and its corresponding methyl esters have been assayed for inhibitory activity on horseradish peroxidase (EC 1.11.1.17) by measuring the peroxidase-catalyzed decomposition of indole-3-acetic acid. Both compounds and their methylates are competitive inhibitors to horseradish peroxidase with inhibitor constants (K_I) of $5.0 \pm 0.9 \times 10^{-5}$ M respectively $5.2 \pm 0.8 \times 10^{-5}$ M. Development of inhibitory effect requires not only the presence of the furan heterocycle but also of a polar side chain.