

Thesis Title - Synthesis of Chroman Amide and
NicotinyI Amide Derivatives as Inhibitors
of Lipid Peroxidation.

Name Suwana Toasaksiri

Degree Master of Science (Pharmacy)

Thesis Supervisory Committee

Opa Vajragupta, Ph.D.
Aimon Samanabandhu, Ph.D.
Jiraporn Ungwitayatorn, Ph.D.

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ABSTRACT

A new type of antiradical agents chroman amides and nicotinyI amides were designed and synthesized in this study. Structure modification was accomplished by varying the chemical function on both sides of amides. The acid parts were trolox, nicotinic acid and 6-hydroxynicotinic acid and the amine parts were 2-(aminomethyl) pyridine and 4-(3-aminopropyl)morpholine. Six newly synthesized amides were tested for inhibitory activity against lipid peroxidation by thiobarbituric acid method. It was found that at 50 μ M concentration, chroman amides and hydroxynicotinyI amides were active against lipid peroxidation whereas nicotinyI amides were inactive. Chroman amides appeared to be more potent than hydroxynicotinyI amides. [(3, 4 - dihydro-6-hydroxy-2, 5, 7, 8- tetramethyl - 2H - 1 -benzopyran-2yl) carbonyl]-2'-(aminomethyl) pyridine (V) was the most active compound in the series. Percent inhibition against lipid peroxidation of compound V was 59.48 %

at 5 μM which was significantly more potent than trolox, the reference compound ($p < 0.01$). It was apparent that the inhibitory action against lipid peroxidation of antiradical agents related with the electron donating property of the molecule to scavenge radicals and the lipophilicity of the molecule to penetrate the membrane lipids.