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Effect of aqueous extract of *Moringa Oleifera* lam leaves on LDL receptor mRNA level of HepG2 cells in comparison to atorvastatin

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Heart disease is one of the major causes of death among world population. Free radicals and high level of low density lipoproteins (LDL) in blood have been verified to be related to inflammation, plaque accumulation and atherosclerosis. Complications resulted from atherosclerosis are hypertension, stroke, and myocardial infarction, etc. *Moringa oleifera* Lam. is a popular plant of South East Asia. In Thiland, *M. oleifera* leaves are used as common vegetable and traditional medicine for more than 100 years. In our previous studies, we found that water extract of *Moringa oleifera* Lam. leaves possessed antioxidant activity (*in vitro and ex vivo*), hypolipidemic and anti-atherosclerotic activities (*in vivo*). These effects are contributed from the phenolic compounds in the aqueous extract. We intended to elucidate the underlying mechanisms of our finding. Therefore in this study, we evaluated the LDL receptor mRNA level of $HepG_2$ cells treated with water extract of *M. oleifera* leaves and compared with atorvastatin. Treatment of *M. oleifera* leaves extract (concentration 1-100 ug/ml) and atorvastatin (concentration 1x10-6 Molar) significantly increased the LDL receptor mRNA levels of HepG2 cells up to 80% and 100%, respectively (comparing with non-treated group). Thus, the result obtained revealed that one of the hypolipidemic mechanisms of M. oleifera leaves extract is by increasing LDL receptor mRNA level of $HepG_2$ cells. So, *M. oleifera* leaves should be recommended to use as food or traditional medicine for anti-atherosclerotic purpose.

Biography

Pilaipark Chumark is an Instructor of Department of Public Health, School of Allied Health Science and Public Health, Walailak University, Thailand. He did his PhD in Pharmacology and MSc in Toxicology from Mahidol University. He has completed his Bachelor's degree in Nursing and Midwifery from Prince of Songkla University. His fields of interest are pharmacological and toxicological effects of medicinal plants especially antioxidant and anti-atherosclerosis, environmental toxicology, heavy metal contamination and nutrition.

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