

Extracts of Thai *Perilla frutescens* nutlets attenuate tumor necrosis factor-activated generation of microparticles, ICAM-1 and IL-6 in human endothelial cellsNarisara Paradee^a, Niramon Utama-ang^b, Chairat Uthaipibull^c and Somdet Srichairatanakool^a^{a,b}) Chiang Mai University, Thailand^c) National Science and Technology Development Agency, Thailand

Elevation of endothelial-derived microparticles (EMPs) plays an important role in the progression of inflammation-related vascular diseases such as cardiovascular disease. Thai perilla (*Perilla frutescens*) nutlets are rich in phenolic compounds and flavonoids that exert potent anti-oxidant and anti-inflammatory effects. The goal of this study was to investigate the effects of ethyl acetate (EA) and ethanol (Eth) extracts of Thai perilla nutlets on endothelial activation and EMP generation in tumor necrosis factor- α (TNF- α)-induced EA.hy926 cells. We found that TNF- α (10 ng/mL) activated EA.hy926 cells and subsequently generated EMP. Pre-treatment with the extracts significantly attenuated the endothelial activation by decreasing the expression of the intracellular adhesion molecule-1 (ICAM-1) in a dose-dependent manner. Only the Eth extract showed protective effects against overproduction of interleukin-6 (IL-6) in the activated cells. Furthermore, the extracts significantly reduced TNF- α -enhanced EMP generation in a dose-dependent manner. In conclusion, Thai perilla nutlet extracts, especially the Eth extract may have the potential to protect endothelium against vascular inflammation through inhibition of endothelial activation and microparticle generation.

Biography

Narisara Paradee is a student at the Department of Biochemistry, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand.

narisara.paradee@gmail.com