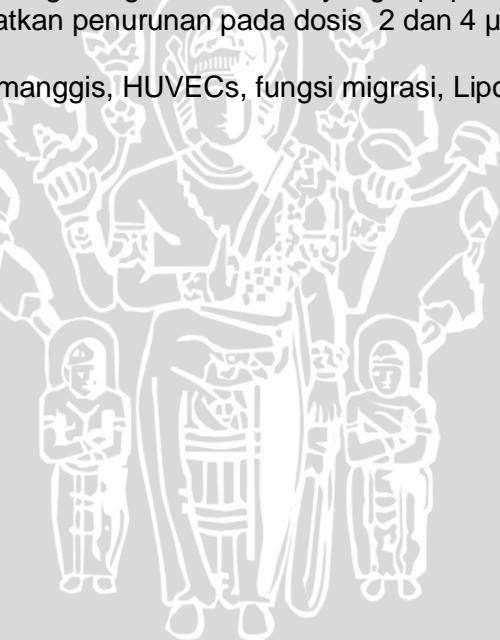


## ABSTRAK

Jayanagara, Adianto. 2014. Pengaruh Ekstrak Kulit Manggis (*Garcinia mangostana*) Terhadap Fungsi Migrasi Human Umbilical Vein Endothelial Cells Yang Dipapar Lipopolisakarida. Tugas Akhir, Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Dr. drg. Nur Permatasari, MS. (2) dr. Dian Nugrahenny, MBiomed.

Peran dari infeksi dipercaya bekerja sebagai stimulus inflamasi penting yang mengakibatkan penyakit kardiovaskuler. Lipopolisakarida (LPS), bagian utama pada lapisan luar membran sel bakteri gram-negatif, adalah penyebab utama inflamasi sel endotel. Penelitian ini dilakukan untuk mengamati pengaruh ekstrak kulit manggis (EKM) terhadap stres oksidatif akibat LPS, khususnya dalam menghambat penurunan migrasi Human Umbilical Vein Endothelial Cells (HUVECs) setelah dipapar LPS. Kultur HUVECs dibagi menjadi kelompok kontrol positif yang dipaparkan LPS 20 ng/ml, kelompok kontrol negatif yang tidak dipaparkan apapun, EKM 1, 2 dan 3 yang dipaparkan LPS 20 ng/ml dengan 1, 2 dan 4  $\mu$ g/ml EKM. Pengamatan dilakukan setelah 6 dan 24 jam. Fungsi migrasi HUVECs diukur dengan uji migrasi scratch wound healing assay. Pemberian LPS mengakibatkan penurunan fungsi migrasi HUVECs. Pemberian EKM dapat menghambat penurunan fungsi migrasi HUVECs yang dipapar LPS pada dosis 1  $\mu$ g/ml. Sedangkan didapatkan penurunan pada dosis 2 dan 4  $\mu$ g/ml EKM.

Kata kunci: Ekstrak kulit manggis, HUVECs, fungsi migrasi, Lipopolisakarida



## ABSTRACT

Jayanagara, Adianto. 2014. Effect of Mangosteen Peel Extract (*Garcinia mangostana*) on Migration Function of Human Umbilical Vein Endothelial Cells Exposed by Lipopolysaccharide. Final Assignment, Medical Program, Faculty of Medicine, Brawijaya University. Supervisors: (1) Dr. drg. Nur Permatasari, MS. (2) dr. Dian Nugrahenny, MBiomed.

The role of infection is believed to work as an important inflammatory stimulus that results in cardiovascular disease. Lipopolysaccharide (LPS), a major part of the outer layer of the cell membrane of gram-negative bacteria, is a major cause of endothelial cells inflammation. This study was conducted to investigate the effect of mangosteen peel extract (MPE) to oxidative stress due to LPS, especially in inhibiting the degradation of Human Umbilical Vein Endothelial Cells (HUVECs) migration function after being exposed to LPS. HUVECs culture were divided into positive group which exposed to LPS 20 ng/ml, negative control which not exposed with anything (normal physiology), MPE 1, 2 and 3 which exposed to LPS 20 ng/ml with 1, 2 and 4  $\mu$ g/ml MPE. Observations were conducted after 6 and 24 hours. HUVECs migration function were measured by scratch wound healing assay. LPS exposure resulted in a decrease in HUVECs migration function. Addition of MPE can inhibit degradation of HUVECs migration function at dose of 1  $\mu$ g/ml. While the reduction found at a dose of 2 and 4  $\mu$ g/ml EKM.

Keywords: mangosteen peel extract, HUVECs, Migration function, Lipopolysaccharide

