Effect of kaempferol on the production and gene expression of monocyte chemoattractant protein-1 in J774.2 macrophages

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Abstract:
Monocyte chemoattractant protein-1 (MCP-1) is produced by activated macrophages, and is involved in pathogenesis of cardiovascular and neurodegenerative disorders. There is a need to develop drugs that inhibit excessive infiltration of monocytes and lymphocytes to the arterial wall and central nervous system. The aim of this study was to evaluate the effect of kaempferol on the (MCP-1) gene expression and MCP-1 protein release by J774.2 macrophage cultures in vitro. Kaempferol given both before and after lipopolysaccharide (LPS) administration reduced secretion of MCP-1. Kaempferol administered before LPS stimulation significantly decreased the number of copies of MCP-1 mRNA. The results suggest that kaempferol inhibits MCP-1 production at the transcriptional level, and that this is an additional anti-inflammatory mechanism of action of this flavonoid.

Key words: kaempferol, J774.2 macrophages, MCP-1