

Anti-inflammatory effect of a novel phospholipid, phosphatidyl-panthenol

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Phosphatidyl-panthenol (P-panthenol) is a novel phospholipid prepared by phospholipase D-mediated transphosphatidylation. In this study, we found that P-panthenol suppressed mRNA expression of pro-inflammatory factors such as IL-6, IL-1 β , TNF- α , COX-2 and iNOS in LPS-stimulated macrophages like RAW264.7 cells. In addition, P-panthenol also down-regulated mRNA expression of pro-inflammatory cytokines in TNF- α stimulated human keratinocytes, HaCaT cells. The suppressive effects by P-panthenol were stronger than those of free panthenol and phosphatidylcholine used as substrate for P-panthenol synthesis. Inhibition of phosphorylation of p38, ERK and JNK in MAPK cascade is suggested to be the mechanism of anti-inflammatory effects by P-panthenol.