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Effects of Sophoraflavanone G, a Prenylated Flavonoid from *Sophora Flavescens*, on Cyclooxygenase-2 and *In Vivo* Inflammatory Response

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Previously, several prenylated flavonoids having a C-8 lavandulyl moiety were found to inhibit cyclooxygenase-1 (COX-1) as well as 5-lipoxygenase (5-LOX), and sophoraflavanone G was the most potent inhibitor against these eicosanoid generating enzymes among the prenylated flavonoids tested. In this investigation, effects of sophoraflavanone G on COX-2 induction from RAW 264.7 cells and in vivo inflammatory response were studied. Sophoraflavanone G inhibited prostaglandin E_2 (PGE_2) production from lipopolysaccharide (LPS)-treated RAW cells by COX-2 down-regulation without significantly affecting COX-2 activity at 1 50 uM. Other prenylated flavonoids including kuraridin and sanggenon D also down-regulated COX-2 induction at 10 - 25 uM, while kurarinone and echinoisoflavanone did not. In addition, sophoraflavanone G showed in vivo anti-inflammatory activity against mouse croton oil-induced ear edema and rat carrageenan paw edema via oral (2 - 250 mg/kg) or topical administration (10 - 250 ug/ear). Although the potencies of inhibition were far less than that of a reference drug, prednisolone, this compound showed higher anti-inflammatory activity when applied topically, suggesting a potential use for several eicosanoid-related skin inflammation such as atopic dermatitis.