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Effects of Prenylflavanones from *Sophora* Species on Growth and Activation of Mouse Macrophage-like Cell Line

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We investigated the effect of 2 flavanones and 8 chemically-defined prenylflavanones on the growth and activation of mouse macrophage-like Raw 264.7 cells. Amino acid analysis in the culture medium demonstrated the rapid consumption of serine and glutamine by Raw 264.7 cells, suggesting the necessity to supplement these amino acids for the prolonged culture. Naringenin and hesperetin showed little or no cytotoxic activity. However, addition of the isoprenyl group (sophoraflavanone B, euchrestaflavanone A) or the lavandulyl and hydroxyl group (sophoraflavanone G) significantly enhanced the cytotoxic activity. The cytotoxic activity of these compounds was significantly influenced by both log P value and ionization potential. These compounds slightly, but significantly, reduced both nitric oxide (NO) and tumor necrosis factor (TNF) production by lipopolysaccharide (LPS)-stimulated Raw 264.7 cells, regardless of their cytotoxic activity. These data suggest that the macrophage inhibitory effect of prenylflavanones might not be related to their cytotoxic activity.