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### Effects of Isoflavones from *Sophora* Species on the Growth and Activation of a Mouse Macrophage-like Cell Line

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We investigated the effect of eleven isoflavones on the growth and activation of mouse macrophage-like Raw 264.7 cells. The study of structure-activity relationship suggests that both hydrophilic (hydroxyl) and hydrophobic (prenyl) groups within isoflavone molecules are the determinants for the induction of cytotoxic activity. When hydrophobicity was assessed by octanol-water partition coefficient (log P), the maximum cytotoxic activity was observed at a log P value above 2.5. All isoflavones did not significantly stimulate the nitric oxide (NO) production by Raw 264.7 cells, but reduced the NO production by lipopolysaccharide (LPS)-stimulated Raw 264.7 cells, at cytotoxic concentrations. Amino acid analysis in the culture medium demonstrated that isoflavones significantly inhibited the LPS-stimulated production of citrulline and asparagine. Isoflavones inhibited the LPS-stimulated NO production more efficiently than citrulline and asparagine production, possibly due to their NO scavenging activity. These data suggest that the inhibition of LPS action by isoflavones may be coupled with their cytotoxic activity.