Isosteviol is a derivative of stevioside, a constituent of Stevia rebaudiana, which is commonly used as a noncaloric sugar substitute in Japan and Brazil. Target: Isosteviol dose-dependently relaxed the vasopressin (10^{-8} M)-induced vasoconstriction in isolated aortic rings with or without endothelium. However, in the presence of potassium chloride (3 \times 10^{-2} M), the vasodilator effect of isosteviol on arterial strips disappeared. Only the inhibitors specific for the ATP-sensitive potassium (KATP) channel or small conductance calcium-activated potassium (SKCa) channel inhibited the vasodilator effect of isosteviol in isolated aortic rings contracted with 10^{-8} M vasopressin [1]. The attenuation by isosteviol of the vasopressin- and phenylephrine-induced increase in [Ca^{2+}]_i was inhibited by glibenclamide, apamin and 4-aminopyridine but not by charybdotoxin. Furthermore, the inhibitory action of isosteviol on [Ca^{2+}]_i was blocked when A7r5 cells co-treated with glibenclamide and apamin in conjunction with 4-aminopyridine were present [2]. Isosteviol (1-100 micromol/l) inhibits angiotensin-II-induced DNA synthesis and endothelin-1 secretion. Measurements of 2'7'-dichlorofluorescin diacetate, a redox-sensitive fluorescent dye, showed an isosteviol-mediated inhibition of intracellular reactive oxygen species generated by the effects of angiotensin II [3].
