Abstract
It has been known that the leaves of Gymnema sylvestre suppress the sensitivity to sweet substances. Since 1887 several investigators have tried to isolate the active principle, named “gymnemic acid”. In 1967 Stocklin at al. reported that “gymnemic acid” (gymnemic acid A) consists of gymnemic acid A1 (a main component), A, A3, and A4 based on thin layer chromatography. They proposed the structure of gymnemic acid as D-glucuronide of hexahydroxy-triterpene which is esterified with acids. In order to elucidate the relationship between the structures of gymnemic acids and the abilities to suppress sweetness, the antisweat activities of these different gymnemic acid components are compared in this paper, based on studies of their structural differences. Since the reported isolation methods are not satisfactory to obtain sufficient quantities of gymnemic acid A1 for preparative purposes, we devised a new isolation method to obtain gymnemic acid A1 in high yields. The effect on sweet taste by gymnemic acid A1 using substances of quite diverse chemical structures is also studied in this paper.