Studies on Okinawan Resource Plants

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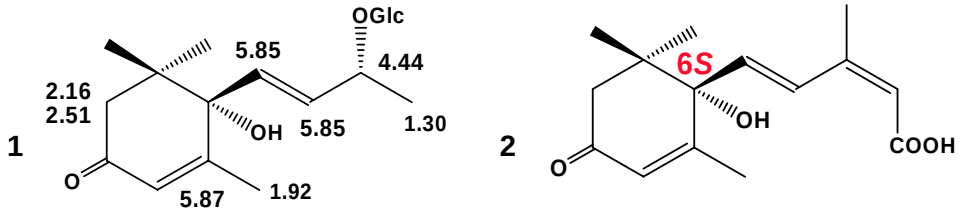
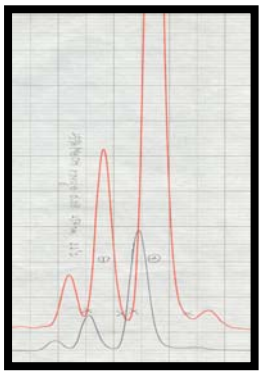
It is my policy that all plant materials to be used for my research must be collected by myself. Therefore, I have made trips to Okinawa once or twice a year since 1989. Here I present results obtained for *Alangium premnifolium* Ohwi (Japanese name: Shima-Urinoki), which was collected during my second collection trip to Okinawa.
A. premnifolium belongs to the Alangiaceae, and two other *Alangium* species also grow wild in Japan. Megastigmane glucoside, isolated from *A. premnifolium*, is of great interest. Compound **1** is a roseoside commonly found in many plant species and compound **2** is abscisic acid, which is known as a dormancy hormone in plants.

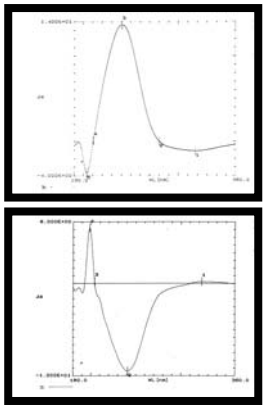


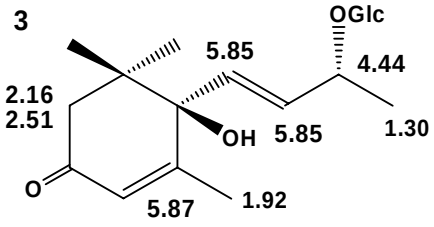
The absolute configuration at the 6-position of **1** was believed to be *S*, because **1** was probably biosynthesized from **2**, the two carbon unit of the side chain of **2** remaining. Compounds **1** and **3**, isolated from the same fraction of *A. premnifolim* by preparative HPLC, showed exactly the same ^{1}H NMR spectra. However, they exhibited different retention times on HPLC. Thus, they are different compounds, which have created quite a stir regarding the well known theory.

Preparative HPLC profile
Right large peak is compound **1**
Left one is compound **3**



CD spectra





Since the Cotton effects at around 241 nm in the CD spectra of compounds **1** (upper) and **3** (lower) had different signs, it was found that the absolute configurations at the 6-positions of **1** and **3** were opposite. There is a preconceived idea that the NMR spectra of diastereomers must be different, because they are different compounds. However, in the case of megastigmanes, even diastereomers show the same NMR spectra and thus we have to be very careful when we elucidate the structures of megastigmanes. Otsuka et *al.*, *Chem. Pharm. Bull.*, **43**, 754-759 (1995).