

# ***Ent*-Kaurane Diterpenoids and Glycosides: Isolation, Properties, and Chemical Transformations**

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**Abstract**—This review is devoted to *ent*-kaurane diterpenoids and related glycosides, which represent two naturally occurring groups of compounds with interesting structures and properties. Much useful information about the biogenesis and biological activities of these compounds is presented; however, the greatest part of the review covers various aspects of the chemical transformations of native *ent*-kaurane diterpenoids, namely, their reactions via COOH, C=O, and OH groups and double bonds. Special attention is given to rearrangements of the carbon skeleton, primarily the Wagner–Meerwein rearrangement of the well-known kaurane diterpenoid steviol into its isomer, the well-known *ent*-beyerane diterpenoid isosteviol. A separate section is devoted to the chemical transformations of isosteviol, which are used to demonstrate how the well-known reactions of COOH and C=O groups, as well as CH<sub>2</sub>–C(O)R fragments, proceed in unusual ways when these moieties are attached to rigid hydrocarbon skeletons of naturally occurring compounds (or when they are parts of them). The final section considers *ent*-kaurane glycosides, focusing on those isolated from the plant *Stevia rebaudiana*, which is well known because they are 300–400 times sweeter than sucrose. The chemical transformations and, in some cases, biotransformations of these compounds (rebaudiosides) are described in detail, including the total synthesis of some rebaudiosides aimed at creating a production technology for low-calorie sweeteners. The review covers data published between 1964 and 2010, including original results obtained by the authors.

**Keywords:** kauranes, beyeranes, glycosides, diterpenoids, steviol, isosteviol, *S. rebaudiana*, steviolbioside.

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