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Determination of seasonal change of 1-deoxynojirimycin content in *Morus alba* leaves

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Glycosidases are involved in a variety of biological processes and glycosidase inhibitors have potential as drugs for diabetes type 2, cancers, viral infection, and so forth. 1-Deoxynojirimycin(DNJ), a polyhydroxylated piperidine, is a potent α-glycosidase inhibitor and is abundant in *Morus* spp. (mulberry trees) leaves and roots. Nowadays, *M. alba* leaves and dried *Bombyx mori* (silkworm) powder are taken as healthy foods in Korea. A simple method for the assay of DNJ was established and seasonal change of DNJ content in *M. alba* leaves was determined using the method. The method includes simple hot-water extraction, derivatization with 9-fluorenylmethyl chloroformate and reversed-phase high-performance liquid chromatography. Optimal conditions for extraction and derivatization are described. For the stability of FMOC-derivative of DNJ, it was essential to dilute derivatization mixture with 0.1% acetic acid and to operate at 4℃. The seasonal change of DNJ content in *M. alba* leaves seemed considerately related to that of temperature.