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Abstract

Three new steroidal alkaloids **1**-**3**, together with four known compounds **4**-**7**, were isolated from the ethanol extract of *Veratrum Grandiflorum* Loes. Their structures were elucidated by NMR (1D and 2D NMR) and MS spectroscopic data. The inhibition activities on Hedgehog (Hh) pathway were evaluated using a cell-based bioassay system (Shh-LIGHT 2 cells). The results showed that compounds **1**-**3** and **5** displayed inhibitory activities obviously with the IC_{50} values of 0.63–3.11 μM. Among them, compound **5** showed the most prominent inhibition activity (IC_{50} = 0.63±0.02 μM). Thus, these active alkaloids may be potent natural compounds as Hh pathway inhibitors for the treatment of various cancers.

Keywords: alkaloids; *Veratrum Grandiflorum* Loes.; Hedgehog pathway;