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Vetiverianines A, B and C, three new sesquiterpenoids from *Vetiveria zizanioides* rootsYukiko Matsuo, Saori Maeda, Chika Ohba, Haruhiko Fukaya, and Yoshihiro Mimaki
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Vetiveria zizanioides (Gramineae) is a perennial grass that grows widely in India and Indonesia. *V. zizanioides* has deep complex root systems and it is widely used to prevent red soil erosion and soil contamination. The volatile matter obtained from steam distillation of the roots of *V. zizanioides*, which is commonly called vetiver oil, shows antibacterial, antioxidant and antifungal activities and is used in aromatherapy and perfumery. The roots of *V. zizanioides* contain sesquiterpenoids such as α -vetivone, β -vetivone and isovalencenol and several flavonoids. However, no systematic phytochemical investigation has been carried out on *V. zizanioides* roots. During our continuous search for bioactive secondary metabolites of higher plants that yield essential oils, we performed a chemical examination of a methanolic extract of *V. zizanioides* roots and isolated three new sesquiterpenoids, named vetiverianines A (1), B (2) and C (3), and a known eudesmane sesquiterpenoid, identified as (+)-1 β , 4 β , 6 α -trihydroxyeudesmane (4). In particular, vetiverianine A has a unique carbon framework of a rigid tricyclic ring system, designated here as the neo-eremophilane skeleton. Vetiverianines B and C are new eremophilane sesquiterpenoids. The structures of 1-3 including their absolute configurations were determined by analysis of NMR, X-ray crystallography and vibrational circular dichroism (VCD) data. Furthermore, the cytotoxic activity of 1-4 against HL-60 cells is briefly presented.

Biography

Yukiko Matsuo has received her PhD degree in 2014 from Tokyo University of Pharmacy and Life Sciences, Japan. She has been an Assistant Professor in the Department of Medicinal Pharmacognosy at Tokyo University of Pharmacy and Life Sciences since 2014. Her current research includes isolation and structural determination of plant natural products with tumor-selective cytotoxic activities.

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