Three new terpenoids from the fruit peels of Citrus Hassaku Yu.Tanaka.

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Abstract

Citrus hassaku Yu. Tanaka is a relatively less-known species within the genus. In this study, we aimed to isolate novel compounds from this species, elucidate their chemical structures via spectroscopic and physicochemical analyses, and evaluate their antiproliferative effects using the WST-8 assay. Two new limonoids, 1-acetyl-sphaerocarpainic acid I (**1**) and 1-acetyl-sphaerocarpain I (**2**), and a new eremophilane-type nor-sesquiterpenoid enantiomer, 12-nor-11*S*-hydroxy-11-hydronootkatone (**9**), were isolated from the peels of *C. hassaku*, together with eleven known compounds: deacetylnomilin (**3**), nomilin (**4**), methyl nomilinate (**5**), obacunone (**6**), limonin (**7**), ichangin (**8**), nootkatone (**10**), (+)-(4*R*,5*S*,7*R*)-13-hydroxynootkatone (**11**), umbelliferone (**12**), auraptene (**13**), and marmin (**14**). Among them, compound (**9**) exhibited weak antiproliferative effects against human glioblastoma U-251 MG cells.