

PP53. Brasilane sesquiterpenes, bioactive essential-oil constituentsSonja Filipović^{1*}, Niko Radulović^{1*}*Keywords:* brasilane, liverwort, volatile, biological activity

A bicyclo[4.3.0]nonane sesquiterpene skeleton with a *gem*-dimethyl group at C-3, methyl group at C-9 and an isopropyl group at C-5, is referred to as the brasilane skeleton. Biosynthetically, brasilanes originate from α -humulene. The structural complexity of this skeleton is illustrated by the first synthesis of conocephalenol from (1*R**,7*aS**)-1-methyl-7,7*a*-dihydroindan-5(6*H*)-one in 20 steps [1]. A shorter 7-step synthetic strategy was successfully accomplished by Cossy et al. starting from (*R*)-pulegone with an overall yield of 15% [2].

Up to now, 32 brasilane sesquiterpenes have been identified mainly in liverworts, fungi, and algae. Brasilane-type structures have been previously known only from marine organisms of the Rhodomelaceae family (species *Laurencia obtusa* (Huds.) Lamouroux and *Laurencia implicata* J. Agardh). In addition, brasilanes were detected in the sea hare *Aplysia brasiliiana* due to its algae diet. A number of isolated derivatives bear an –OH at C-9, while there are four C-8 halogenated brasilanes and three metabolites with a 1,6-epoxy moiety [3]. In the equatorial liverwort species *Noteroclada confluens* (Hooker & Taylor) Spruce (Pelliaceae), two brasilane-type sesquiterpenes, similar to those found in *Conocephalum conicum* (L.) Dum. with tetrasubstituted double bonds at C-1, C-6, and C-5, were recorded. Xylarenic acid, possessing the brasilane structure, is recorded in the ascomycetous fungus *Xylaria* sp. [4]. The endophyte *Diaporthe* sp. [5], isolated from the leaves of *Rhizophora stylosa* Griff., yielded six brasilane-type sesquiterpenoids, diaporols J-O. *In vitro* cytotoxicity evaluation of brasilanes was performed on various human cancer cell lines (HL-60, SMMC-7712, A-549, MCF-7, HepG2, HCT116, MDA-MB-231, and SW480) [5,6]. A related, moderately cytotoxic, brasilane compound was isolated from the basidiomycete *Coltricia sideroides* (Lév.) Teng.

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