Two new dihydroflavonol derivatives, macarecurvatins A and B, have been isolated from the leaves of *Macaranga recurvata* (Euphorbiaceae), along with the known compounds disopropenylaromadendrin, glyasperin A and broussoflavonol F. The structures of the new compounds were determined on the basis of spectroscopic evidence. Upon cytotoxic evaluation against P-388 cells, macarecurvatin B showed strong activity with an IC₅₀ of 0.83 μM.

**Keywords:** Macarecurvatins A and B, Flavanol, Dihydroflavonol, *Macaranga recurvata*, Euphorbiaceae, P-388 cells.

In our previous reports, we disclosed the presence of isoprenylated and geranylated flavonoids [1-4], and phenolic derivatives containing an irregular sesquiterpenyl side chain, from Indonesian *Macaranga* [3,5]. In continuation of these chemical investigations, we have examined *M. recurvata* Gage and succeeded in isolating two new dihydroflavonols, trivially named as macarecurvatins A (1) and B (2), together with the known compounds 6,8-disopropenylaromadendrin (3) [6], glyasperin A (4) [7], and broussoflavonol F (5) [8]. This paper discusses the structure elucidation of the new compounds. Also, cytotoxic properties of compounds 1-5 against murine leukemia P-388 cells are briefly described.

Macarecurvatin A (1), obtained also as a yellowish solid, [α]D²⁰ +40.4 (c 0.32, MeOH), showed a quasimolecular ion [M+H]⁺ at m/z 441.1902 corresponding to the molecular formula C₂₅H₂₈O₇. The UV spectrum of 1 exhibited absorption maxima at λmax 204 and 291 nm, and showed bathochromic shifts on addition of NaOH, AlCl₃, and NaOAc solution. In the 1H NMR spectrum, the presence of a pair of doublets at δH 4.97 and 4.56, as well as a singlet of a chelated -OH group at δH 11.97, are reminiscent of a 2,3-dihydroflavonol structure. This was substantiated by the presence of a conjugated carbonyl group (δC 198.8) and two methines of oxycarbons (δC 84.3 and 73.3). The presence of five signals of oxysaryl carbons (δC 162.7, 159.7, 158.7, 146.4, and 145.7) suggested that 1 has the basic structure of taxifolin (= 5,7,3',4'-tetrahydroxy-2,3-dihydroflavonol). Furthermore, by the observation of four methyl singlets in the 1H NMR spectrum (δH 1.75, 1.64, 1.60, and 1.55), together with two vinyl (δH 5.17 and 5.13) and two methylene (δH 3.32 and 3.24) signals, this compound should contain two isoprenyl groups. In the aromatic region of 1H NMR spectrum, three signals at δH 7.07, 6.91, and 6.85 were observed with multiplicities consistent with the structural unit of the ring B of taxifolin, and, consequently, the isoprenyl groups must be located at C-6 and C-8. Key 1H-13C long range correlations found in the HMBC spectrum, particularly from the chelated -OH (δH 11.97) and the methylene (δH 3.32 and 3.24) signals confirmed the assignment of structure 1 for macarecurvatin A. From the coupling constant of H-2/H-3 (11.5 Hz, trans) and the sign and value of its specific optical rotation, the stereochemistry at C-2 and C-3 was determined to be 2R,3R [9].

Macarecurvatin B (2), obtained also as a yellowish solid, has the molecular formula C₃₀H₃₆O₇, deduced from the [M+H]⁺ ion at m/z 509.2534. The UV absorptions of 2 had very similar characteristics to those of 1, and the NMR parameters in 2 (Table 1) also showed characteristics of the taxifolin structure. The presence of geranyl and isoprenyl groups in 2 was indicated by the 1H NMR signals of five methyl singlets (δH 1.58, 1.54, 1.54, 1.51, and 1.51), together with three methine vinyl (δH 5.20, 5.12, and 5.02), and four methylene (δH 3.58, 3.16, 1.98 and 1.95) signals. Furthermore, a singlet (δH 6.07) of aromatic signals was found, suggesting that one of the side chain groups must be located either at C-6 or C-8. In the HMBC spectrum, the chelated-OH signal (δH 11.65) was correlated with an oxycaril (δC 162.6), a quaternary (δC 101.4), and a methine (δC 96.6) carbon signals, showing that C-6 is unsubstituted. The methylene signal that showed long-range correlations with the oxycaril carbon signals (δC 165.4 and 161.1) in the A-ring was a doublet at δH 3.16, which, from its COSY spectrum, is part of the isoprenyl group (δH 5.12, 3.16, 1.58, and 1.51). Consequently, the geranyl group must be the side chain of ring B. From the presence of a pair of ortho-coupled doublets (J = 8.4 Hz) at δH 7.05 and 6.82, this group should be located at C-2. Analysis of HMOC and HMBC spectra confirmed the assignment of structure 2. By the same argument used for 1 (δHH2H3 = 11.7 Hz; [α]D²⁰ +35.3 (c 0.24, MeOH), the stereo-chemistry at C-2 and C-3 was also determined to be 2R,3R [9].