

# New bis-spirolabdane-type diterpenoids from *Leonurus heterophyllus* Sw.

Giang P.M., Son P.T., Matsunami K., Otsuka H.

Faculty of Chemistry, College of Natural Science, Vietnam National University, 19 Le Thanh Tong Street, Hanoi, Viet Nam; Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8551, Japan

**Abstract:** Twelve natural bis-spirolabdane-type diterpenoids, including eight new, named leoheteronones A-E (3, 6, 8, 9, 11), 15-epileoheteronones B (7), D (10), and E (12), and four known leopersin B (1), 15-epileopersin B (2), leopersin C (4), and 15-epileopersin C (5), together with hispanone (13) and galeopsin (14) were isolated from the aerial parts of the medicinal plant *Leonurus heterophyllus* Sw. (Lamiaceae) grown in Vietnam. Their structures were determined by spectroscopic analyses. The current study emphasized the accumulation of C-15 oxygenated bis-spirolabdane-type diterpenoids of both 13R and 13S configurations in *L. heterophyllus*. ?? 2005 Pharmaceutical Society of Japan.

**Author Keywords:** Bis-spirolabdane-type diterpenoid; Lamiaceae; Leoheteronone; *Leonurus heterophyllus*

**Index Keywords:** 15 epileoheteronone b; 15 epileoheteronone d; 15 epileoheteronone e; 15 epileopersin b; 15 epileopersin c; diterpenoid; galeopsin; hispanone; leoheteronone a; leoheteronone b; leoheteronone c; leoheteronone d; leoheteronone e; *Leonurus heterophyllus* extract; leopersin b; leopersin c; plant extract; unclassified drug; article; drug accumulation; drug determination; drug isolation; drug structure; infrared spectroscopy; *Leonurus*; *Leonurus heterophyllus*; medicinal plant; oxygenation; plant growth; Viet Nam; Chromatography, Thin Layer; Diterpenes; *Leonurus*; Magnetic Resonance Spectroscopy; Spectrometry, Mass, Fast Atom Bombardment

Year: 2005

Source title: Chemical and Pharmaceutical Bulletin

Volume: 53

Issue: 11

Page : 1475-1479

Cited by: 5

Link: Scopus Link

Chemicals/CAS: Diterpenes

Correspondence Address: Otsuka, H.; Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8551, Japan; email: hotsuka@hiroshima-u.ac.jp

ISSN: 92363

CODEN: CPBTA

DOI: 10.1248/cpb.53.1475

PubMed ID: 16272737

Language of Original Document: English

Abbreviated Source Title: Chemical and Pharmaceutical Bulletin

Document Type: Article

Source: Scopus

Authors with affiliations:

1. Giang, P.M., Faculty of Chemistry, College of Natural Science, Vietnam National University, 19 Le Thanh Tong Street, Hanoi, Viet Nam, Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8551, Japan
2. Son, P.T., Faculty of Chemistry, College of Natural Science, Vietnam National University, 19 Le Thanh Tong Street, Hanoi, Viet Nam
3. Matsunami, K., Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8551, Japan
4. Otsuka, H., Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8551, Japan

References:

1. Do, T.L., (1991) Dictionary of Vietnamese Medicinal Plants, pp. 41-44. , Science and Technology, Hanoi
2. Tasdemir, D., Wright, A.D., Sticher, O., (1995) J. Nat. Prod., 58, pp. 1543-1554
3. Tasdemir, D., Wright, A.D., Sticher, O., (1996) J. Nat. Prod., 59, pp. 131-134
4. Tasdemir, D., Sticher, O., (1997) J. Nat. Prod., 60, pp. 874-879
5. Tasdemir, D., Calis, I., Sticher, O., (1998) Phytochemistry, 49, pp. 137-143
6. Malakov, P., Papanov, G., Jakupovic, J., Grenz, M., Bohlman, F., (1985) Phytochemistry, 24, pp. 2341-2343
7. Papanov, G.I., Malakov, P.Y., Rodriguez, B., De La Torre, M.C., (1998) Phytochemistry, 47, pp. 1149-1151
8. Savona, G., Piozzi, F., Bruno, M., Rodriguez, B., (1982) Phytochemistry, 21, pp. 2699-2701
9. Boalino, D.M., McLean, S., Reynolds, W.F., Tinto, W.F., (2004) J. Nat. Prod., 67, pp. 714-717
10. Hon, P.M., Lee, C.M., Shang, H.S., Cui, Y.X., Wong, H.N.C., Chang, H.S., (1991) Phytochemistry, 30, pp. 354-356
11. Hon, P.M., Wang, E.S., Lam, S.K.M., Choy, Y.M., Lee, C.M., Wong, H.N.C., (1993) Phytochemistry, 33, pp. 639-641
12. Connolly, J.D., Hill, R.A., (1991) Dictionary of Terpenoids, , Chapman & Hall, London
13. Al-Musayeib, N.M., Abbas, F.A., Ahmad, M.S., Mossa, J.S., El-Ferally, F.S., (2000) Phytochemistry, 54, pp. 771-775
14. Ono, M., Yamamoto, M., Masuoka, C., Ito, Y., Yamashita, M., Nohara, T., (1999) J. Nat. Prod., 62, pp. 1532-1537
15. Ono, M., Yamamoto, M., Yanaka, T., Ito, Y., Nohara, T., (2001) Chem. Pharm. Bull., 49, pp. 82-86
16. Hersel, U., Steck, M., Seifert, K., (2000) Eur. J. Org. Chem., 2000, pp. 1609-1615
17. Rodriguez, B., Savona, G., (1980) Phytochemistry, 19, pp. 1805-1807
18. Wang, E.S., Choy, Y.M., Wong, H.N.C., (1996) Tetrahedron, 52, pp. 12137-12158

Download Full Text: 0737.pdf