

# ent-pimarane-type diterpenoids from *Siegesbeckia orientalis* L.

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**Abstract:** A new ent-pimarane glucoside, named hythiemoside B (4), was isolated from the aerial part of *Siegesbeckia orientalis* L. (Asteraceae) together with four known ent-pimarane-type diterpenoids: darutigenol (1), darutoside (2), hythiemoside A (3), and ent-(15R),16,19-trihydroxypimar-8(14)-ene 19-O- $\beta$ -D-glucopyranoside (5). The structure of the new compound was elucidated by spectroscopic analyses and chemical transformation. The NMR data of compounds 1 ( $^1\text{H}$ -) and 5 ( $^1\text{H}$ - and  $^{13}\text{C}$ -) were also compiled in this study on the basis of 2D experiments. © 2005 Pharmaceutical Society of Japan.

**Author Keywords:** Asteraceae; Diterpenoid; Ent-pimarane; Hythiemoside; *Siegesbeckia orientalis*

**Index Keywords:** 15,16,19 trihydroxypimar 8(14) ene 19 o beta glucopyranoside; 16 acetoxypimar 8(14) ene 3beta diol; 3 o beta dextro glucoside; caffeic acid; darutigenol; darutoside; diterpenoid; geranylnerol derivative; germacranolide derivative; hythiemoside A; hythiemoside B; melampolide; pimarane; rutoside; sitosterol; stigmasterol; thiazolidine derivative; unclassified drug; abietane derivative; diterpene; arthritis; article; Asteraceae; carbon nuclear magnetic resonance; drug isolation; drug structure; furunculosis; hydrolysis; impetigo; menstruation disorder; nonhuman; proton nuclear magnetic resonance; rheumatic disease; *siegesbeckia orientalis*; stereochemistry; thin layer chromatography; traditional medicine; Viet Nam; chemistry; fast atom bombardment mass spectrometry; high performance liquid chromatography; infrared spectroscopy; isolation and purification; nuclear magnetic resonance spectroscopy; Asteraceae; Chromatography, High Pressure Liquid; Chromatography, Thin Layer; Diterpenes; Diterpenes, Abietane; Hydrolysis; Magnetic Resonance Spectroscopy; Spectrometry, Mass, Fast Atom Bombardment; Spectroscopy, Fourier Transform Infrared; Vietnam

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References:

- Do, T.L., (1991) Dictionary of Vietnamese Medicinal Plants, pp. 555-556. , Science and Technology, Hanoi
- (1999) Selected Medicinal Plants in Vietnam, pp. 277-282. , ed. by Le V. T., Science and Technology, Hanoi
- Barua, R.N., Sharma, R.P., Madhusudanan, K.P., Thyagarajan, G., Werner, H., Ramaswamy, M., (1979) *Phytochemistry*, 18, pp. 991-994
- Barua, R.N., Sharma, R.P., Thyagarajan, G., Werner, H., Serengolam, V.G., (1980) *Phytochemistry*, 19, pp. 323-325
- Zdero, C., Bohlmann, F., King, R.M., Robinson, H., (1991) *Phytochemistry*, 30, pp. 1579-1584
- Phan, T.S., Le, K.N., Phan, M.G., Nguyen, V.D., (2002) *Journal of Vietnam Pharmaceutical Society*, 7, pp. 11-13
- Phan, T.S., Phan, M.G., Sattler, I., Gräfe, U., *Natural Products Research*, , in press
- Xiong, J., Jin, Q.D., Xu, Y.L., (2001) *Chinese Chemical Letters*, 12, pp. 51-54
- Miyaichi, Y., Tomimori, T., (1995) *Natural Medicines*, 49, pp. 82-86
- Kim, J.H., Han, K.D., Yamasaki, K., Tanaka, O., (1979) *Phytochemistry*, 18, pp. 894-895