

Mangiferonic acid, 22-hydroxyhopan-3-one, and physcion as specific chemical markers for *Alnus nepalensis*

Phan M.G., Chinh Truong T.T., Phan T.S., Matsunami K., Otsuka H.

Faculty of Chemistry, College of Natural Science, Vietnam National University, Hanoi, 19 Le Thanh Tong Street, Hanoi, Viet Nam; Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8553, Japan

Abstract: [No abstract available]

Author Keywords: *Alnus nepalensis*; Anthraquinone; Betulaceae; Flavonoid; Phytosterol; Triterpenoid

Index Keywords: deciduous tree; ketone; organic acid; phytochemistry; secondary metabolite; *Alnus*; *Alnus nepalensis*; Betulaceae

Year: 2010

Source title: Biochemical Systematics and Ecology

Volume: 38

Issue: 5

Page : 1065-1068

Link: Scopus Link

Correspondence Address: Phan, M.G.; Faculty of Chemistry, College of Natural Science, Vietnam National University, Hanoi, 19 Le Thanh Tong Street, Hanoi, Viet Nam; email: phanminhgiang@yahoo.com

ISSN: 3051978

CODEN: BSECB

DOI: 10.1016/j.bse.2010.09.020

Language of Original Document: English

Abbreviated Source Title: Biochemical Systematics and Ecology

Document Type: Article

Source: Scopus

Authors with affiliations:

- Phan, M.G., Faculty of Chemistry, College of Natural Science, Vietnam National University, Hanoi, 19 Le Thanh Tong Street, Hanoi, Viet Nam
- Chinh Truong, T.T., Faculty of Chemistry, College of Natural Science, Vietnam National University, Hanoi, 19 Le Thanh Tong Street, Hanoi, Viet Nam
- Phan, T.S., Faculty of Chemistry, College of Natural Science, Vietnam National University, Hanoi, 19 Le Thanh Tong Street, Hanoi, Viet Nam
- Matsunami, K., Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8553, Japan
- Otsuka, H., Graduate School of Biomedical Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8553, Japan

References:

- Aoki, T., Ohta, S., Suga, T., (1988) *Phytochemistry*, 27, p. 2915
- Aoki, T., Ohta, S., Suga, T., (1990) *Phytochemistry*, 279, p. 3611
- Chen, J., Gonzalez-Laredo, R., Karchesy, J.J., (2000) *Phytochemistry*, 53, p. 971
- Cho, S.M., Kwon, Y.M., Lee, J.H., Yon, K.H., Lee, M.W., (2002) *Arch. Pharm. Res.*, 25, p. 885
- Choi, J.S., Jung, J.H., Lee, J.H., Kang, S.S., (1996) *Arch. Pharm. Res.*, 19, p. 302
- Choi, S.E., Kim, K.H., Kwon, J.H., Kim, S.B., Kim, H.W., Lee, M.W., (2008) *Arch. Pharm. Res.*, 31, p. 1287
- Chung, M.Y., Rho, M.C., Lee, S.W., Park, R.P., Kim, K., Lee, I.A., Kim, D.H., Kim, Y.K., (2006) *Planta Med.*, 72, p. 267
- Daniere, C., Gonnet, J.-F., Moiroud, A., (1991) *Biochem. Syst. Ecol.*, 19, p. 587
- Favre-Bonvin, J., Jay, M., Wollenweber, E., (1978) *Phytochemistry*, 17, p. 821
- Goad, L.J., Akihisha, T., (1997) *Analysis of Sterols*, Chapman & Hall, London
- Gonnet, J.-F., Daniere, C., (1989) *Biochem. Syst. Ecol.*, 17, p. 239
- Guz, N.R., Lorenz, P., Métraus, J.P., (2002) *Biochem. Syst. Ecol.*, 30, p. 471
- (1994) *The Flavonoids. Advances in Research Since 1986*, Chapman & Hall, London, J.B. Harborne (Ed.)
- Jin, W.J., Cai, X.F., Na, M.K., Lee, J.J., Bae, K.H., (2007) *Biol. Pharm. Bull.*, 30, p. 810
- Jin, W.J., Cai, X.F., Na, M.K., Lee, J.J., Bae, K.H., (2007) *Arch. Pharm. Res.*, 30, p. 412
- Jung, S.J., Kim, D.H., Hong, Y.H., Lee, J.H., Song, H.N., Rho, Y.D., Baek, N.I., (2007) *Arch. Pharm. Res.*, 30, p. 146
- Kim, H.J., Yeom, S.H., Shim, M.K., Paek, I.N., Lee, M.W., (2005) *Arch. Pharm. Res.*, 28, p. 177
- Kuo, C.H., Lee, C.W., Lai, Y.C., Lee, S.S., (2008) *J. Pharm. Biomed. Anal.*, 47, p. 195
- Kuroyanagi, M., Shimomae, M., Nagashima, Y., Muto, N., Okuda, T., Kawahara, N., Nakane, T., Sano, T., (2005) *Chem. Pharm. Bull.*, 53, p. 1519
- Lee, M.W., Park, M.S., Jeong, D.W., Kim, K.H., Kim, H.H., Toh, S.H., (2000) *Arch. Pharm. Res.*, 23, p. 50
- Lee, M.W., Kim, J.H., Jeong, D.W., Ahn, K.H., Toh, S.H., Surh, Y.J., (2000) *Biol. Pharm. Bull.*, 23, p. 517
- Lee, W.S., Kim, J.H., Im, K.R., Cho, K.H., Sok, D.E., Jeong, T.S., (2005) *Planta Med.*, 71, p. 295
- Nomura, M., Tokoroyama, T., Kubota, T., (1981) *Phytochemistry*, 20, p. 1097
- O'Rourke, C., Byres, M., Delazar, A., Kumarasamy, Y., Nahar, L., Stewart, F., Sarker, S.D., (2005) *Biochem. Syst. Ecol.*, 33, p. 749
- Pham, H.H., (1993) *Illustrated Flora of Vietnam*, Published by the author, Montreal
- Sakamura, F., Ohta, S., Aoki, T., Suga, T., (1985) *Phytochemistry*, 24, p. 2744
- Silva, M.S.S., Citó, A.M.G.L., Lopes, M.H.C.J.A.D., (2005) *Quim. Nova*, 28, p. 801
- Suga, T., Ohta, S., Ohta, E., Aoki, T., (1986) *Phytochemistry*, 25, p. 1243
- Tanaka, R., Matsunaga, S., (1992) *Phytochemistry*, 31, p. 3535
- Ternai, B., Markham, K.R., (1976) *Tetrahedron*, 32, p. 565
- Tori, M., Hashimoto, A., Hirose, K., Asakawa, Y., (1995) *Phytochemistry*, 40, p. 1263
- Vo, V.C., (1997) *The Dictionary of Vietnamese Medicinal Plants*, Publishing House Medicine, Ho Chi Minh city
- Wang, K.J., Yang, C.R., Zhang, Y.J., (2007) *Food Chem.*, 101, p. 365
- Wang, W.L., Liu, P.P., Zhang, Y.P., Li, J., Tao, H.W., Gu, Q.Q., Zhu, W.M., (2009) *Arch. Pharm. Res.*, 32, p. 1211
- Wilkins, A.L., Ronaldson, K.J., Jager, P.M., Bird, P.W., (1987) *Aust. J. Chem.*, 40, p. 1713
- Wollenweber, E., (1974) *Phytochemistry*, 13, p. 2318
- Yu, Y.B., Miyashiro, H., Nakamura, N., Hattori, M., Park, J.C., (2007) *Arch. Pharm. Res.*, 30, p. 820