

4802-1 (C15 acetogenin)

Name: Neolaurallene {6-Bromo-2-(3-bromo-propa-1,2-dienyl)-5-ethyl-2,3,3a,5,6,7,10,10a-octahydro-furo[3,2-*b*]oxonine}

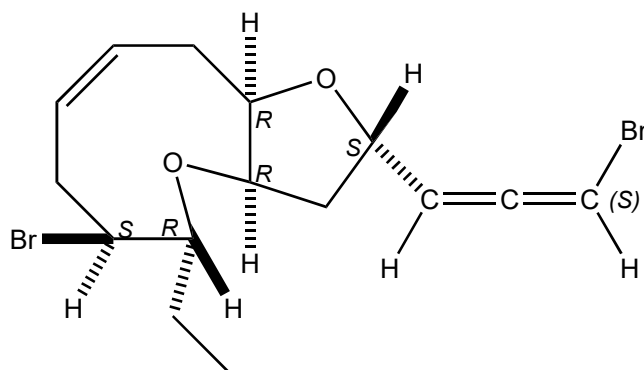
Origin: *Laurencia intricata* (as *L. okamurai*^(1a)) (Bikuni, Hokkaido, Japan)^(1b);
Laurencia saitoi (the coast of Matoba Park, Takehara, Hiroshima Pref., Japan)⁽²⁾;
Laurencia implicata (Florence Bay, Magnetic Island, Australia)⁽³⁾;
Laurencia implicata (Britomart Reef, The Great Barrier Reef, Australia)⁽⁴⁾;
Laurencia saitoi (the coast of Yantai, Shandong Province, China)⁽⁵⁾;
Laurencia okamurai (*L. composita*???) (Weihai coastline, Shandong Province, China)⁽⁶⁾;
Laurencia nangii (Lohok Butun, Sabah, Malaysia)^(7,8);

Formula: C₁₅H₂₀Br₂O₂

Mol. Wt.: 392.13

Opt. Rot.: [α]_D²² +180 (CHCl₃)^(1a); [α]_D²⁰ +83.9 (CHCl₃)⁽²⁾; [α]_D +120.8 (CHCl₃)⁽³⁾;
[α]_D²⁸ +74.0 (CHCl₃)⁽⁸⁾

Mp.: 88-89^(1a); 89-90⁽³⁾



References and Notes

- (1) (a) Suzuki, M., Kurosawa, E., Furusaki, A., Katsuragi, S., and Matsumoto, T. 1984. Chem. Lett., **13**, 1033-1034. Neolaurallene, a new halogenated C-15 nonterpenoid from the red alga *Laurencia okamurai* Yamada. (X-ray crystallographic analysis) (IR, ¹H-NMR, ¹³C-NMR, MS); (b) Suzuki, M., Sasage, Y., Ikura, M., Hikichi, K., and Kurosawa, E. 1989. Phytochemistry, **28**, 2145-2148. Structure revision of okamurallene and structure elucidation of further C₁₅ non-terpenoid bromoallenes from *Laurencia intricata*.
- (2) Minamida, Y., Matsuura, H., Ishii, T., Sato, K., Kamada, T., Kato, A., Yamagishi, Y., Abe, T., Kikuchi, N., and Suzuki, M. 2021. Biochem. Syst. Ecol., **96**, A104259. Chemical composition of *Laurencia* spp. collected from the Seto Inland Sea of Japan.
- (3) Coll, J. C. and Wright, A. D. 1989. Aust. J. Chem., **42**, 1685-1693. Tropical marine algae. IV. Novel metabolites from the red alga *Laurencia implicata* (Rhodophyta, Rhodophyceae, Ceramiales, Rhodomelaceae). (IR, ¹H-NMR, ¹³C-NMR, MS)
- (4) Wright, A. D., König, G. M., and Sticher, O. 1991. J. Nat. Prod., **54**, 1025-1033. New sesquiterpenes and C₁₅ acetogenins from the marine red alga *Laurencia implicata*. (¹³C-NMR)
- (5) Ji, N.-Y., Li, X.-M., and Wang, B.-G. 2008. Molecules, **13**, 2894-2899. Halogenated terpenes and a C₁₅-acetogenin from the marine red alga *Laurencia saitoi*. (¹³C-NMR) (together with parguerane diterpenes, thyrseferol, thyrthyferyl 23-acetate, neolaurallene)

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References and Notes

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- (6) Liang, Y., Li, X.-M., Cui, C.-M., Li, C.-S., Sun, H., and Wang, B.-G. 2012. *Mar. Drugs*, **10**, 2817-2825. Sesquiterpene and acetogenin derivatives from the marine red seaweed *Laurencia okamurai*. (together with okamurenes A-D, okamurene E, okamuragenin, isobromocuparene, 7-hydroxylaurene, laurene, filiformin, debromofiliformin, 6-bromofiliformin, deoxyprepacifenol, 2-bromo-3-chloro-2,7-epoxy-9-chamigren-8 α -ol, 2,10-dibromo-3-chloro-7-chamigren-9-ol, **neolaurallene**, *E*-stereoisomer of neoisoprelaurefucin, (3*Z*)-laureatin, (3*E*,12*Z*)-laurediol)
- (7) Kamada, T. and Vairappan, C. S. 2015. *Nat. Prod. Commun.*, **10**, 843-844. New laurene-type sesquiterpene from Bornean *Laurencia nangii*. (together with neolaurene, 2,10-dibromo-3-chloro- α -chamigrene, deoxyprepacifenol, cycloelatalene B, **neolaurallene**, intricatetraol)
- (8) Vairappan, C. S., Zamil, I. I., and Kamada, T. 2014. *J. Appl. Phycol.*, **26**, 1189-1198. Structural diversity and geographical distribution of halogenated secondary metabolites in red algae, *Laurencia nangii* Masuda (Rhodomelaceae, Ceramiales), in the coastal waters of North Borneo Island. (**¹H-NMR, ¹³C-NMR**)
- (9) Furusaki, A., Katsuragi, S., Suehiro, K., and Matsumoto, T. 1985. *Bull. Chem. Soc. Jpn.*, **58**, 803-809. The conformations of (*Z*)-2,3,4,7,8,9-hexahydrooxonin and (*Z*)-cyclononene. X-ray structure determinations of isolaurallene and neolaurallene, and force-field calculations.