

1236-1 (Sesquiterpene)

Name: (Z)-(9R,10S)-10,15-Dibromochamigra-1,3(15),7(14)-trien-9-ol

{2-Bromo-9-bromomethylene-1,1-dimethyl-5-methylene-spiro[5.5]undec-7-en-3-ol}

Origin: *Laurencia majuscula* (Nyudogatane, Okinoshima Island, Kochi Prefecture, Japan)^(1,2);

Laurencia cartilaginea (Ma'ili Pt. Park, , Wai'anae coast of O'ahu, Hawaii, USA)⁽³⁾;

Laurencia sp. (Taytay, Philippines)⁽⁴⁾;

Laurencia majuscula (Yagachi, Nago, Okinawa, Japan)⁽⁵⁾;

Laurencia scoparia (Praia Brava, coast of Ubatuba, State of Sao Paulo, Brazil)⁽⁶⁾;

Laurencia tristicha (the coast of Hsiao Liuchiu Island, Taiwan)⁽⁷⁾;

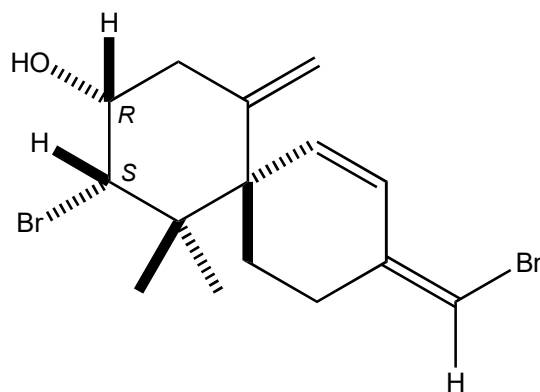
Aplysia dactylomela (La Parguera, Puerto Rico)⁽⁸⁾;

Formula: C₁₅H₂₀Br₂O

Mol. Wt.: 376.13

Opt. Rot.: [α]_D -4 (CHCl₃)⁽¹⁾; [α]_D -4.8 (CHCl₃)⁽⁸⁾; [α]_D²⁴ -4 (CHCl₃)⁽⁷⁾

Mp.: Oil



References and Notes

(1) Suzuki, M. and Kurosawa, E. 1978. Tetrahedron Lett., **19**, 4805-4808. Two new halogenated sesquiterpenes from the red alga *Laurencia majuscula* Harvey. (UV, IR, ¹H-NMR, ¹³C-NMR, MS)

(2) X-ray crystallographic analysis of acetate derivative; Suzuki, M., Furusaki, A., Hashiba, N., and Kurosawa, E. 1979. Tetrahedron Lett., **20**, 879-882. The structures and absolute stereochemistry of two halogenated chamigrenes from the red alga *Laurencia majuscula* Harvey.

(3) Juagdan, E. G., Kalidindi, R., and Scheuer, P. 1997. Tetrahedron, **53**, 521-528. Two new chamigranes from an Hawaiian red alga, *Laurencia cartilaginea*. (together with ma'ilione, *allo*-isoobtusol, elatol, (Z)-(9R,10S)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, (E)-(9S,10R)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, isoobtusadiene)

(4) Francisco, M, E, Y., Turnbull, M. M., and Erickson, K. L. 1998. Tetrahedron Lett., **39**, 5289-5292. Cartilagineol, the fourth lineage of *Laurencia*-derived polyhalogenated chamigrene. (together with cartilagineol (*allo*-isoobtusol), ma'ilione, (Z)-(9R,10S)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, (E)-(9R,10S)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol)

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References and Notes

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- (5) Vairappan, C. S., Suzuki, M., Abe, T., and Masuda, M. 2001. *Phytochemistry*, **58**, 517-523. Halogenated metabolites with antibacterial activity from the Okinawan *Laurencia* species.
- (6) Davyt, D., Fernandez, R., Suescun, L., Mombro, A. W., Saldana, J., Dominguez, L., Coll, J., Fujii, M. T., and Manta, E. 2001. *J. Nat. Prod.*, **64**, 1552-1555. New sesquiterpene derivatives from the red alga *Laurencia scoparia*. Isolation, structure determination, and anthelmintic activity. (together with scopariol, isorigidol, (Z)-10,15-dibromo-chamigra-1,3(15),7(14)-triene, (E)-10,15-dibromo-chamigra-1,3(15),7(14)-triene, 5 known chamigranes ((Z)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, (E)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, 10-bromo-9-hydroxy- β -chamigrene, 2,10-dibromo-9-hydroxychamigra-7(14)-en-9-ol, 2,10-dibromo-3-chlorochamigra-7(14)-ene), 2 known *seco*-chamigranes (ma'ilione, majusculone), α,β -unsaturated aldehyde)
- (7) Chen, J.-Y., Huang, C.-Y., Lin, Y.-S., Hwang, T.-L., Wang, W.-L., Chiou, S.-F., and Sheu, J.-H. 2016. *J. Nat. Prod.*, **79**, 2315-2323. Halogenated sesquiterpenoids from *Laurencia tristicha* collected in Taiwan. (together with 8 new chamigranes; tristichones A-D, tristichols A-D, 4 α -hydroxybromocuparene, known 9 related compds; ma'ilione, ma'iliohydrin, isorigidol, allo-isoobtusol, majusculone, (3(15)Z)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, (3(15)E)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, (3(15)Z)-15-bromochamigra-1,3(15),7-trien-9-one, (3(15)E)-15-bromochamigra-1,3(15),7-trien-9-one)
- (8) **From the sea hare**: Schmitz, F. J., Michaud, D. P., and Schmidt, P. G. 1982. *J. Am. Chem. Soc.*, **104**, 6415-6423. Marine natural products: Parguerol, deoxyparguerol, and isoparguerol. New brominated diterpenes with modified pimarane skeletons from the sea hare *Aplysia dactylomela*. (together with parguerane-, deoxyparguerane-, isoparguerane-diterpenes, 2,3,5-tribromo-N-methylindole, elatol, allolaurinterol acetate, (Z)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, (E)-10,15-dibromochamigra-1,3(15),7(14)-trien-9-ol, isoobtusol acetate)