

2101 (Diterpene)

Name: Aplysin-20 {6-Bromo-1-(5-hydroxy-3-methyl-pent-3-enyl)-2,5,5,8a-tetramethyl-decahydro-naphthalen-2-ol}

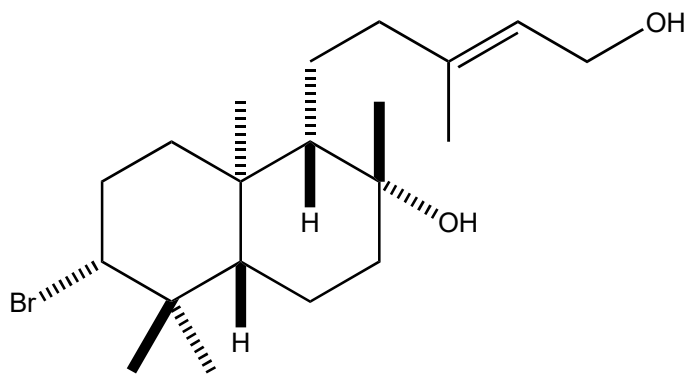
Origin: *Laurencia venusta* (Moura, Aomori Prefecture, Japan)⁽¹⁾;
Laurencia venusta (Katsuura, Chiba Prefecture, Japan)⁽²⁾;
Laurencia venusta (Fukuyama, Hiroshima Prefecture, Japan)⁽²⁾;
Laurencia sp. (Galapagos Islands, Ecuador)⁽³⁾;
Aplysia kurodai (Hokkaido, Japan)⁽⁴⁾;

Formula: C₂₀H₃₅BrO₂

Mol. Wt.: 387.39

Opt. Rot.: [α]_D²¹ -21.4 (MeOH)⁽¹⁾; [α]_D²¹ -78.1 (MeOH)⁽⁴⁾

Mp.: 145-147⁽¹⁾; 146-147⁽⁴⁾



References and Notes

(1) Suzuki, M., Kurosawa, E., and Kurata, K. 1988. *Phytochemistry*, **27**, 1209-1210. Venustanol, a brominated labdane diterpene from the red alga *Laurencia venusta*.

(¹³C-NMR; monoacetate, ¹³C-NMR) (together with venustanol, [aplysin-20](#), (3Z)-epoxyvenustin)

(2) Fukuda, R., Yamagishi, Y., Nagasaka, M., Osada, D., Nimura, K., Oshima, I., Tsujimoto, K., Kurihara, M., Takizawa, S., Kikuchi, N., Ishii, T., and Kamada, T. 2023. *Chem. Biodiversity*, **20**, (8) e202300888. Antifouling brominated diterpenoids from Japanese marine red alga *Laurencia venusta* Yamada. (together with aplysin-20 aldehyde, 13-dehydroxyisoaplysin-20, [aplysin-20](#), (3Z)-venustin, (3Z)-venustinene, (3Z)-chondriol, 4,7(11)-selinadiene)

(3) **Found in *Laurencia* sp. from Galapagos Islands:** Howard, B. M. and Fenical, W. 1978.

Tetrahedron Lett., **19**, 2453-2456. Obustadiol, a unique bromoditerpenoid from the marine red alga *Laurencia obtusa*. footnote 3.

(4) **From the sea hare:** (a) Matsuda, H., Tomiie, Y., Yamamura, S., and Hirata, Y. 1967. *J. Chem. Soc. Chem. Commun.*, **1967**, 898-899. The structure of aplysin-20. (**IR**, ¹H-NMR; monoacetate, **IR**, ¹H-NMR); (b) Yamamura, S. and Hirata, Y. 1971. *Bull. Chem. Soc. Jpn.*, **44**, 2560-2562. A naturally-occurring bromo-compound, aplysin-20 from *Aplysia kurodai*. (**IR**, ¹H-NMR, **MS**; monoacetate, **IR**, ¹H-NMR, **MS**)

(5) **Synthesis:** (a) Murai, A., Abiko, A., and Masamune, T. 1984. *Tetrahedron Lett.*, **25**, 4955-4958. Total synthesis of (*dl*)-aplysin-20.; (b) Yamaguchi, Y., Uyehara, T., and Kato, T. 1985. *Tetrahedron Lett.*, **26**, 343-346. Biogenetic type synthesis of (*dl*)-concinndiol and (*dl*)-aplysin 20.