

## 4435-1 (C15 acetogenin)

Name: *cis*-Pinnatifidenyne<sup>(1)</sup>; *Z*-pinnatifidenyne<sup>(2,3)</sup>

{8-(1-Bromo-propyl)-3-chloro-2-pent-2-en-4-ynyl-3,4,7,8-tetrahydro-2*H*-oxocine}

Origin: *Laurencia pinnatifida* (Los Cristianos, Tenerife, Canary Islands, Spain)<sup>(1)</sup>;

*Laurencia pinnatifida* (Los Cristianos, Tenerife, Canary Islands, Spain)<sup>(2)</sup>;

*Laurencia pinnatifida* (Tenerife, Canary Islands, Spain)<sup>(3)</sup>;

*Laurencia nangii* (Plau Tiga, Kuala Penyu, Sabah, Malaysia)<sup>(5)</sup>;

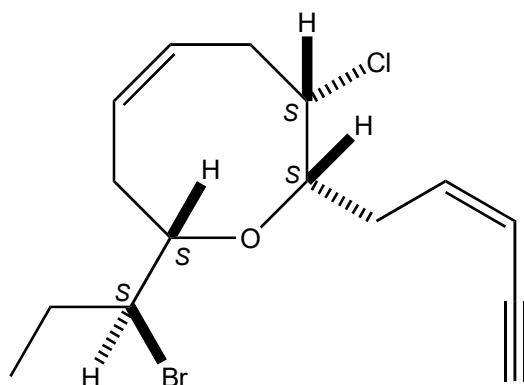
*Laurencia nangii* (Sulug Island and Manukan Island, Sabah, Malaysia)<sup>(5)</sup>;

Formula: C<sub>15</sub>H<sub>20</sub>BrClO

Mol. Wt.: 331.68

Opt. Rot.: [α]<sub>D</sub><sup>25</sup> +39 (CHCl<sub>3</sub>)<sup>(1)</sup>; [α]<sub>D</sub><sup>25</sup> +39.2 (CHCl<sub>3</sub>)<sup>(3)</sup>; [α]<sub>D</sub><sup>28</sup> -31.7 (CHCl<sub>3</sub>)<sup>(5)</sup>

Mp.: 47.5-48.5<sup>(1)</sup>



### References and Notes

(1) Gonzalez, A. G., Martin, J. D., Martin, V. S., Norte, M., Perez, R., Ruano, J. Z., Drexler, S. A., and Clardy, J. 1982. *Tetrahedron*, **38**, 1009-1014. Non-terpenoid C-15 metabolites from the red seaweed *Laurencia pinnatifida*. (IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, MS)

(2) Gonzalez, A. G., Artega, J. M., Fernandez, J. J., Martin, J. D., Norte, M., and Ruano, J. Z. 1984. *Tetrahedron*, **40**, 2751-2755. Terpenoids of the red alga *Laurencia pinnatifida*. (together with new and known laurane-sesquiterpenes, dehydrothirsiferol, *cis*-pinnadifidenyne)

(3) Reassignment of the absolute configuration; Norte, M., Gonzalez, A. G., Cataldo, F., Rodoriguez, M. L., and Brito, I. 1991. *Tetrahedron*, **47**, 9411-9418. New examples of acyclic and cyclic C-15 acetogenins from *Laurencia pinnatifida*. Reassignment of the absolute configuration for E and Z pinnatifidenyne. (X-ray crystallographic analysis)

(4) Masuda, M., Abe, T., Kogame, K., Kawaguchi, S., Phang, S. M., Daitoh, M., Sakai, T., Takahashi, Y., and Suzuki, M. 2002. *Botanica Marina*, **45**, 571-579. Taxonomic notes on marine algae from Malaysia. VIII. Three species of *Laurencia* (Rhodomelaceae). (together with *cis*-pinnatifidenyne, obtusenyne, (3*Z*)-laurenyne, aplysiadiol)

(5) 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. (<sup>1</sup>H-NMR, <sup>13</sup>C-NMR) (together with α-snyderol, (6*S*\*,10*S*\*,11*R*\*)-rearranged snyderol, *Z*-pinnatifidenyne, (3*Z*)-laurenyne, (3*Z*,6*R*,7*R*)-obtusenyne, neoirieone, (-)-angasiol, 11-deacetylpinaterpene)

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References and Notes

(Continue from 4435-1)

(6) **Total synthesis**; (a) Kim, H., Choi, W. J., Jung, J., Kim, S., and Kim, D. 2003. *J. Am. Chem. Soc.*, **125**, 10238-10240. Construction of eight-membered ether rings by olefin geometry-dependent internal alkylation: First asymmetric total synthesis of (+)-3-(*E*)- and (+)-3-(*Z*)-pinnatifidenyne.; (b) Snyder, S. A., Brucks, A. P., Treitler, D. S., and Moga, I. 2012. *J. Am. Chem. Soc.*, **134**, 17714-17721. Concise synthetic approaches for the *Laurencia* family: Formal total syntheses of (*dl*)-laurefucin and (*dl*)-*E*- and (*dl*)-*Z*-pinnadifidenyne.