

A New Sphingolipid from the Fungus *Paxillus panuoides*

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The ceramides, cleavage products of various sphingolipids, including gangliosides and cerebroside, are involved in various signal transduction pathways. Many extracellular stresses, such as tumor necrosis factors- α (TNF- α) and human immunodeficiency virus (HIV) have been shown to activate sphingomyelinases that release ceramides which inhibit cell growth and induce apoptosis. Because of the importance of ceramides, chemistry and biology of ceramides have been the vital subject of the latest research in recent years.^[1-4]

Repeated column chromatography of the chloroform/methanol (1:1, V:V) extract from the fruiting bodies of a basidiomycetous fungus, *Paxillus panuoides* resulted in the isolation of a previously unknown C-18 phytosphingosine-type ceramide (1), which has uncommon 2',3'-dihydroxy fatty acyl group in its structure. Its structure was characterized as (2*S*,3*S*,4*R*)-2-*N*-(2',3'-dihydroxytetracosanoyl)-octadecan-1,3,4-triol on the basis of spectroscopic (IR, MS, ¹H NMR, ¹³C NMR, ¹H-¹H COSY) analysis and chemical means (hydrolysis, acetylation).

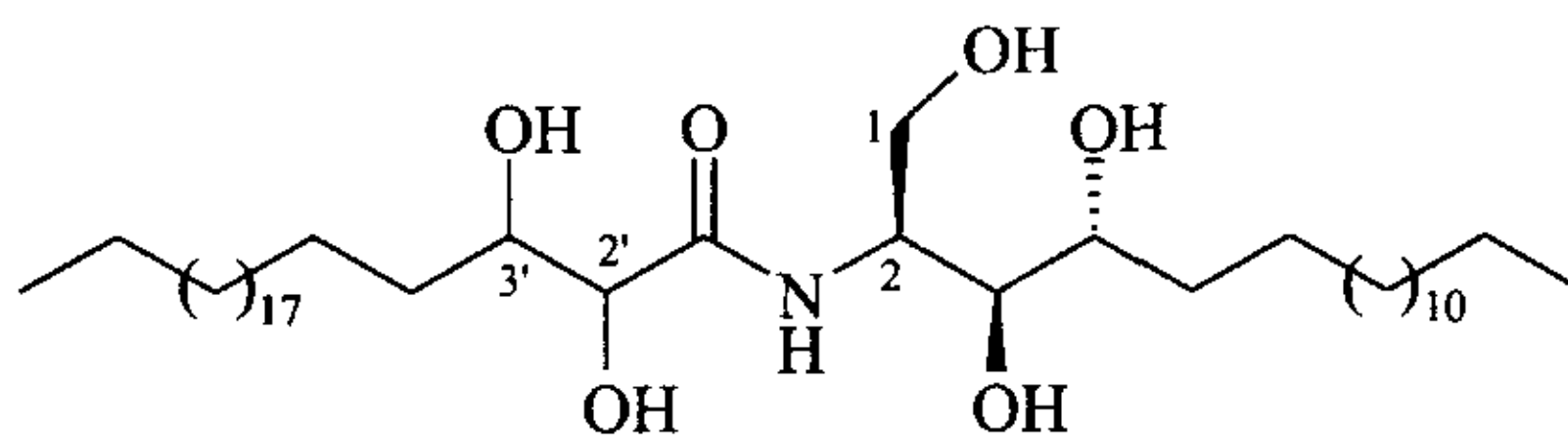


Figure 1 Structure of compound 1

References

- 1 Gao, J. M.; Dong, Z. J.; Liu, J. K. *Lipids* **2001**, *36*, 175.
- 2 Gao, J. M.; Dong, Z. J.; Liu, J. K. *Chin. Chem. Lett.* **2001**, *12*, 139.
- 3 Gao, J. M.; Hu, L.; Dong, Z. J.; Liu, J. K. *Lipids* **2001**, *36*, 521.
- 4 Gao, J. M.; Zhang, A. L.; Wang, C. Y.; Wang, X. H.; Liu, J. K. *Chin. Chem. Lett.* **2002**, *13*, 325.

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