

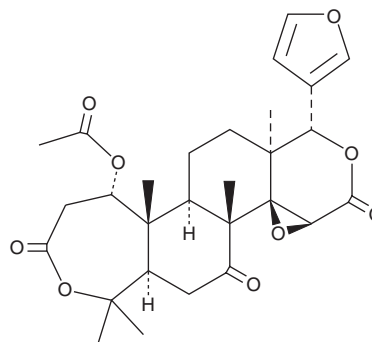
# PRODUCT INFORMATION



## Nomilin

Item No. 20836

**CAS Registry No.:** 1063-77-0  
**Formal Name:** (1S,3aS,4aR,4bR,6aR,11S,11aR,11bR,13aS)-11-(acetyloxy)-1-(3-furanyl)decahydro-4b,7,7,11a,13a-pentamethyl-oxireno[4,4a]-2-benzopyrano[6,5-g][2]benzoxepin-3,5,9(3aH,4bH,6H)-trione  
**Synonym:** NSC 297134  
**MF:** C<sub>28</sub>H<sub>34</sub>O<sub>9</sub>  
**FW:** 514.6  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Nomilin is supplied as a crystalline solid. A stock solution may be made by dissolving the nomilin in the solvent of choice, which should be purged with an inert gas. Nomilin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of nomilin in these solvents is approximately 30 mg/ml.

### Description

Nomilin is a limonoid triterpenoid that has been found in grapefruit seeds and has diverse biological activities, including antiviral, antiproliferative, and anti-obesity properties.<sup>1</sup> It dose-dependently reduces HIV-1 replication in infected human peripheral blood mononuclear cells (PBMCs; EC<sub>50</sub> = 52.2 μM) and reduces human umbilical vein endothelial cell (HUVEC) proliferation, invasion, tube formation, and matrix metalloproteinase-2 (MMP-2) and MMP-9 activity without reducing cell viability when used at concentrations ranging from 5 to 25 μg/ml.<sup>2,3</sup> Nomilin (100 μM) increases luciferase activity 5.5-fold when the G protein-coupled receptor TGR5 is expressed in HEK293 cells with a TGR5-dependent reporter gene.<sup>4</sup> It increases GST activity in the small intestinal mucosa, liver, and forestomach of mice by 4.17-, 3.44-, and 1.16-fold, respectively, when administered at a dose of 10 mg/kg.<sup>1</sup> Nomilin (0.2% w/w, p.o.) completely prevents weight gain and reduces serum glucose and insulin levels by 30 and 89.8%, respectively, in mice fed a high-fat diet.<sup>4</sup> It also increases the white blood cell count and the specific antibody titer in blood by approximately 10-fold in mice in response to sheep red blood cells when administered at a dose of 10 μmol/kg.<sup>5</sup>

### References

1. Lam, L., Li, Y., and Hasegawa, S. Effects of citrus limonoids on glutathione S-transferase activity in mice. *J. Agric. Food Chem.* **37**(4), 878-880 (1989).
2. Battinelli, L., Mengoni, F., Lichtner, M., et al. Effect of limonin and nomilin on HIV-1 replication on infected human mononuclear cells. *Planta Med.* **69**(10), 910-913 (2003).
3. Pratheeshkumar, P. and Kuttan, G. Nomilin inhibits tumor-specific angiogenesis by downregulating VEGF, NO and proinflammatory cytokine profile and also by inhibiting the activation of MMP-2 and MMP-9. *Eur. J. Pharmacol.* **668**(3), 450-458 (2011).
4. Ono, E., Inoue, J., Hashidume, T., et al. Anti-obesity and anti-hyperglycemic effects of the dietary citrus limonoid nomilin in mice fed a high-fat diet. *Biochem. Biophys. Res. Commun.* **410**(3), 677-681 (2011).
5. Raphael, T.J. and Kuttan, G. Effect of naturally occurring triterpenoids glycyrrhizic acid, ursolic acid, oleanolic acid and nomilin on the immune system. *Phytomedicine* **10**(6-7), 483-489 (2003).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM