

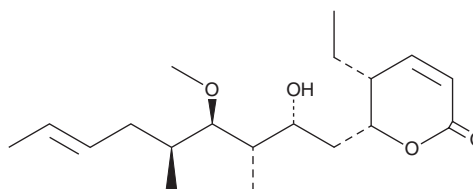
PRODUCT INFORMATION



Pironetin

Item No. 28853

CAS Registry No.: 151519-02-7
Formal Name: (5R,6R)-5-ethyl-5,6-dihydro-6-
[(2R,3S,4R,5S,7E)-2-hydroxy-4-methoxy-
3,5-dimethyl-7-nonen-1-yl]-2H-pyran-2-one
Synonyms: NK 10958, NL 9C, PA 48153c, (-)-Pironetin
MF: C₁₉H₃₂O₄
FW: 324.5
Purity: ≥70%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Bacterium/Micromonospora sp.



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

Laboratory Procedures

Pironetin is supplied as a solid. A stock solution may be made by dissolving the pironetin in the solvent of choice, which should be purged with an inert gas. Pironetin is soluble in ethanol, dichloromethane, and DMSO.

Description

Pironetin is a bacterial metabolite originally isolated from *Streptomyces* that has diverse biological activities, including anti-proliferative, immunosuppressive, and plant growth regulatory properties.¹⁻⁴ It binds to tubulin with a K_d value of 0.33 μM and increases the critical concentration (CrC) for tubulin assembly in glycerol-assembling buffer (GAB) at a concentration of 25 μM.^{2,3} It also induces G₂/M phase cell cycle arrest in 3Y1 rat fibroblasts and apoptosis in HL-60 human leukemia cells when used at concentrations of 50 ng/ml and 33 nM, respectively.^{2,5} It inhibits the growth of HT-29 human colorectal and MCF-7 human breast cancer cells (IC₅₀s = 6.4 and 6 nM, respectively) but also of non-cancerous human HEK293 cells (IC₅₀ = 17 nM). It also inhibits the growth of A2780 human ovarian carcinoma cells, as well as of the drug-resistant, P-glycoprotein-expressing A2780AD subline (IC₅₀s = 8 and 25 nM, respectively). Pironetin (5 mg/kg) decreases the generation of cytotoxic T lymphocytes in mice in response to immunization by EL4 allogeneic mouse T lymphocytes.⁴ It also inhibits rice plant growth by 23% when applied nine days prior to heading.¹

References

1. Kobayashi, S., Tsuchiya, K., Harada, T., et al. *J. Antibiot. (Tokyo)* **47(6)**, 697-702 (1994).
2. Kondoh, M., Usui, T., Nishikiori, T., et al. *Biochem. J.* **340(Pt 2)**, 411-416 (1999).
3. Vilanova, C., Díaz-Olivera, S., Murga, J., et al. *J. Med. Chem.* **57(24)**, 10391-10403 (2014).
4. Yasui, K., Tamura, Y., Nakatani, T., et al. *J. Antibiot. (Tokyo)* **49(2)**, 173-180 (1996).
5. Kondoh, M., Usui, T., Kobayashi, S., et al. *Cancer Lett.* **126(1)**, 29-32 (1998).

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.

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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