



LKT Laboratories, Inc.

## Patulin

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### Product Information

**Product ID** P0278

**CAS No.** 149-29-1

**Chemical Name** 4-Hydroxy-4H-furo[3,2-c]pyran-2(6H)-one

**Synonym** Clavacin, clavatin, penicidin

**Formula** C<sub>7</sub>H<sub>6</sub>O<sub>4</sub>

**Formula Wt.** 154.12

**Melting Point** 109-111 °C

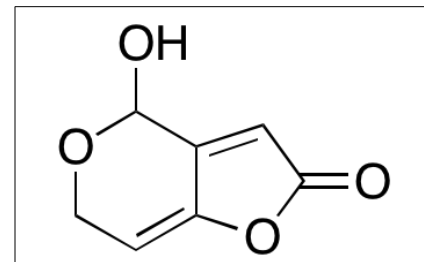
**Purity** ≥98%

**Solubility** acetonitrile, ethanol,  
acetone, ethyl acetate, also  
soluble in water

**Store Temp** 4 °C

**Ship Temp** Ambient

**Description** Patulin is a mycotoxin initially produced by species of *Penicillium* and *Aspergillus* that is commonly found as a contaminant in apples and apple products. In keratinocytes, patulin increases phosphorylation of EGFR, activates Ras/MAPK/Akt signaling, activates NF-κB, and increases expression of cyclin D1 and COX-2, increasing cell proliferation. Patulin exhibits genotoxic and anticancer activities in a variety of cellular models. Patulin induces DNA damage through the formation of crosslinks. Patulin also activates cleavage of poly(ADP)-ribose polymerase (PARP), increases phosphorylation of EGR-1, and activates caspase 3, resulting in ROS-dependent apoptosis in colorectal cancer cells and leukemia cells. Additionally, patulin decreases transepithelial resistance, altering intestinal epithelial barrier function; this mechanism involves inactivation of protein tyrosine phosphatase.



**Bulk quantities available upon request**

Product ID	Size
P0278	1 mg
P0278	5 mg
P0278	10 mg

**References** Alam S, Pal A, Kumar R, et al. EGFR-mediated Akt and MAPKs signal pathways play a crucial role in patulin-induced cell proliferation in primary murine keratinocytes via modulation of Cyclin D1 and COX-2 expression. *Mol Carcinog*. 2013 Jun 29. [Epub ahead of print]. PMID: 23813870.

Glaser N, Stopper H. Patulin: Mechanism of genotoxicity. *Food Chem Toxicol*. 2012 May;50(5):1796-801. PMID: 22425938.

Kwon O, Soung NK, Thimmegowda NR, et al. Patulin induces colorectal cancer cells apoptosis through EGR-1 dependent ATF3 up-regulation. *Cell Signal*. 2012 Apr;24(4):943-50. PMID: 22230687.

Wu TS, Liao YC, Yu FY, et al. Mechanism of patulin-induced apoptosis in human leukemia cells (HL-60). *Toxicol Lett*. 2008 Dec 15;183(1-3):105-11. PMID: 18992795.

Mahfoud R, Maresca M, Garmy N, et al. The mycotoxin patulin alters the barrier function of the intestinal epithelium: mechanism of action of the toxin and protective effects of glutathione. *Toxicol Appl Pharmacol*. 2002 Jun 15;181(3):209-18. PMID: 12079430.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.