LKT Laboratories, Inc.

Puromycin Dihydrochloride

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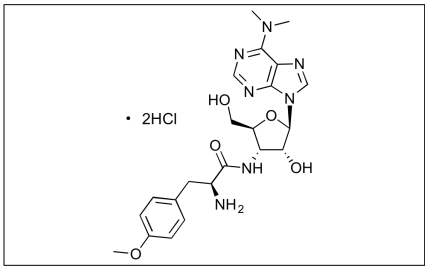
Product Information

Product ID P8168
CAS No. 58-58-2
Chemical Name (3'-[[(2S)-2-Amino-3-(4-methoxyphenyl)-1- oxopropyl]amino]-3'-deoxy-N,N-dimethyl-adenosine
Synonym Stylomycin Hydrochloride



Formula $C_{22}H_{29}N_7O_5 \cdot 2HCl$
Formula Wt. 544.43
Melting Point 175.5-177°C
Purity ≥98%
Solubility Soluble in water.

Bulk quanitites available upon request

Product ID	Size
P8168	10 mg
P8168	25 mg
P8168	100 mg

Store Temp 4°C
Ship Temp Ambient

Description Puromycin is an aminonucleoside antibiotic compound originally produced by *Streptomyces alboniger*. Puromycin displays antibacterial activity through inhibition of ribosomal protein translation; it resembles the 3' end of tRNA and is incorporated into growing protein chains through the ribosomal A site, inducing premature chain termination. Puromycin also induces DNA damage mediated by ROS and oxidative stress in animal models. In vitro, puromycin inhibits insulin-stimulated glycolysis by inhibiting insulin activation of phosphofructokinase 2. Puromycin also inhibits dipeptidyl peptidase II (DPP2; serine peptidase) and metallopeptidase. Additionally, this compound induces ERK activation-dependent apoptosis and mTOR-dependent autophagy in podocytes, leading to proteinuria and glomerular damage.

References

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Liu S, Ding J, Fan Q, et al. The activation of extracellular signal-regulated kinase is responsible for podocyte injury. Mol Biol Rep. 2010 Jun;37(5):2477-84. PMID: 19728154.

Marshall CB, Pippin JW, Krofft RD, et al. Puromycin aminonucleoside induces oxidant-dependent DNA damage in podocytes in vitro and in vivo. Kidney Int. 2006 Dec;70(11):1962-73. PMID: 17035936.

Probst I, Quentmeier A, Schweickhardt C, et al. Stimulation by insulin of glycolysis in cultured hepatocytes is attenuated by extracellular ATP and puromycin through purine-dependent inhibition of phosphofructokinase 2 activation. Eur J Biochem. 1989 Jun 15;182(2):387-93. PMID: 2525468.