Product Data Sheet

Product Name: Uridine triphosphate trisodium salt
Cat. No.: GC37867

Chemical Properties

Cas. No.	19817-92-6		
SMILES	O[C@H]1[C@H](N2C(NC(C=C2)=O)=O)O[C@H](COP(OP(OP(O[Na])(O[Na])=O)(O[Na])=O)(O)=O)[C@H]1O		
Formula	$C_9H_{12}N_2Na_3O_{15}P_3$	M.Wt	550.09
Solubility	Water: 110 mg/mL (199.97 mM); DMSO: < 1 mg/mL (insoluble or slightly soluble)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Background

Uridine 5'-triphosphate (UTP) is a nucleotide and dual agonist of purinergic $P2Y_2$ and $P2Y_4$ receptors (EC_{50}s = 55 and 80 nM, respectively, for stimulation of phospholipase C in 1321N1 cells expressing human receptors).[1,2] It is selective for $P2Y_2$ and $P2Y_4$ receptors over $P2Y_6$ receptors (EC_{50} = >10,000 nM).[2] UTP stimulates proliferation of PANC-1 cells (EC_{50} = 13.1 µM), an effect that can be prevented by siRNA against the $P2Y_2$ receptor.[1] It induces vasoconstriction in perfused isolated canine epicardial coronary artery in a concentration-dependent manner.[3] UTP is formed from uridine monophosphate (UMP) by two sequential phosphorylations and can be converted to cytidine 5'-triphosphate .[4] It also reacts with glucose-1-phosphate to form UDP-glucose , a precursor in the biosynthesis of glycogen.[5]

1.Choi, J.H., Ji, Y.G., and Lee, D.H.Uridine triphosphate increases proliferation of human

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cancerous pancreatic duct epithelial cells by activating P2Y2 receptorPancreas42(4)680-686(2013) 2.Maruoka, H., Jayasekara, M.P.S., Barrett, M.O., et al.Pyrimidine nucleotides with 4-alkyloxyimino and terminal tetraphosphate δ-ester modifications as selective agonists of the P2Y4 receptorJ. Med. Chem.54(12)4018-4033(2011) 3.Matsumoto, T., Nakane, T., and Chiba, S.UTP induces vascular responses in the isolated and perfused canine epicardial coronary artery via UTP-preferring P2Y receptorsBr. J. Pharmacol.122(8)1625-1632(1997) 4.Berg, J.M., Tymoczko, J.L., and Stryer, L.In de novo synthesis, the pyrimidine ring is assembled from bicarbonate, aspartate, and glutamineBiochemistry(2002) 5.Berg, J.M., Tymoczko, J.L., and Stryer, L.Glycogen is synthesized and degraded by different pathwaysBiochemistry(2002)

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