

Product Data Sheet

Product Name: 2',3',5'-Triacetyluridine

Cat. No.: GC45321

Chemical Properties

Cas. No. 4105-38-8

SMILES O=C(NC(C=C1)=O)N1[C@H]2[C@H](OC(C)=O)[C@H](OC(C)=O)[C@@H](COC(C)=O)O2

Formula C₁₅H₁₈N₂O₉

M.Wt 370.3

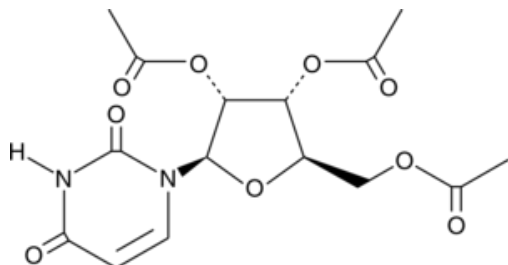
Solubility DMF: 30 mg/ml, DMSO: 30 mg/ml, DMSO: PBS (pH 7.2) (1:3): 0.25 mg/ml

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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

2',3',5'-Triacetyluridine is a prodrug of uridine.¹ It is more lipid soluble than uridine and resistant to degradation by uridine phosphorylase. It is cleaved by plasma esterases in vivo to release uridine. 2',3',5'-Triacetyluridine (6% in the diet) decreases neurodegeneration in the piriform cortex and striatum, as well as reduces the amount of huntingtin-positive aggregates and increases BDNF protein levels in the piriform cortex in a transgenic mouse model of Huntington's disease.² It also improves rotarod performance and increases survival in transgenic mouse models of Huntington's disease. 2',3',5'-Triacetyluridine reverses toxicity and increases survival in a mouse model of dihydropyrimidine dehydrogenase (DPD) deficiency-induced 5-fluorouracil overdose when used at a concentration of 2,000 mg/kg three times per day beginning within 24 hours of 5-FU administration.³

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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Formulations containing 2',3',5'-triacetyluridine have been used in the treatment of hereditary orotic aciduria and of overdose or life-threatening toxicity due to flurouracil or capecitabine.

References

1. Ashour, O.M., Naguib, F.N.M., and el Kouni, M.H. 5-(m-Benzyloxybenzyl)barbituric acid acyclonucleoside, a uridine phosphorylase inhibitor, and 2',3',5'-tri-O-acetyluridine, a prodrug of uridine, as modulators of plasma uridine concentration: Implications for chemotherapy. *Biochem. Pharmacol.* 51(12), 1601-1611 (1996).
2. Saydoff, J.A., Garcia, R.A.G., Browne, S.E., et al. Oral uridine pro-drug PN401 is neuroprotective in the R6/2 and N171-82Q mouse models of Huntington's disease. *Neurobiol. Dis.* 24(3), 455-465 (2006).
3. von Borstel, R.W., O'Neil, J.D., Saydoff, J.A., et al. Uridine triacetate for lethal 5-FU toxicity due to dihydropyrimidine dehydrogenase (DPD) deficiency. *J. Clin. Oncol.* 28(15_suppl), e13505-e13505 (2010).

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