

Product Data Sheet

Product Name: Aurintricarboxylic acid

Cat. No.: GC39699

Chemical Properties

Cas. No. 4431-00-9

SMILES O=C(C=C/C1)C(C(O)=O)=CC1=C(C2=CC(C(O)=O)=C(O)C=C2)\C3=CC(C(O)=O)=C(O)C=C3

Formula $C_{22}H_{14}O_9$ M.Wt 422.34

Solubility DMSO: 125 mg/mL (295.97 mM) Storage Store at -20°C

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

Shipping Evaluation sample solution: ship with blue ice All other available size: ship with RT, or Condition blue ice upon request.

Structure

Background

Aurintricarboxylic acid (ATA) is an inhibitor of protein synthesis that has diverse biological activities.^{1,2,3,4,5,6,7,8} It inhibits the activity of a variety of enzymes, including the nucleases DNase I, RNase A, and S1, as well as the serine proteases trypsin and chymotrypsin in a concentration-dependent manner.^{2,3} ATA inhibits replication of severe acute respiratory syndrome coronavirus (SARS-CoV; EC₅₀ = 200 µg/ml) and human enterovirus 71 in Vero cells (EV71; EC₅₀ = 2.9 µM), as well as reduces HIV-1- or HIV-2-induced cytopathogenicity in MT-4 cells (IC₅₀s = 1.1 and 0.85 µg/ml, respectively).^{4,5,6} It inhibits apoptosis induced by sanguinarine in K562 leukemia cells when used at a concentration of 100 µM.⁷ ATA (20 mg/kg, i.p.) decreases CNS CD4⁺ T cell infiltration and reduces hind limb weakness and paralysis in a mouse model of myelin oligodendrocyte glycoprotein-induced experimental autoimmune encephalomyelitis (EAE).⁸

1. Siegelman, F., and Apirion, D. Aurintricarboxylic acid, a preferential inhibitor of initiation of protein synthesis. *J. Bacteriol.* 105(3)902-907(1971) 2. Hallick, R.B., Chelm, B.K., Gray, P.W., et al. Use of aurintricarboxylic acid as an inhibitor of nucleases during nucleic acid isolation. *Nucleic Acids Res.* 4(9)3055-3064(1977) 3. Bina-Stein, M., and Tritton, T.R. Aurintricarboxylic acid is a nonspecific enzyme inhibitor. *Mol. Pharmacol.* 12(1)191-193(1976) 4. He, R., Adonov, A., Traykova-Adonova, M., et al. Potent and selective inhibition of SARS coronavirus replication by aurintricarboxylic acid. *Biochem. Biophys. Res. Commun.* 320(4)1199-1203(2004) 5. Hung, H.-C., Chen, T.-C., Fang, M.-Y., et al. Inhibition of enterovirus 71 replication and the viral 3D polymerase by aurintricarboxylic acid. *J. Antimicrob. Chemother.* 65(4)676-683(2010) 6. Cushman, M., Wang, P.L., Chang, S.H., et al. Preparation and anti-HIV activities of aurintricarboxylic acid fractions and analogues: Direct correlation of antiviral potency

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

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with molecular weight]. *J. Med. Chem.* 34(1)329-337(1991) 7. Hallock, S., Tang, S.-C., Buja, L.M., et al. Aurintricarboxylic acid inhibits protein synthesis independent, sanguinarine-induced apoptosis and oncogenesis. *Toxicol. Pathol.* 35(2)300-309(2007) 8. Zhang, F., Wei, W., Chai, H., et al. Aurintricarboxylic acid ameliorates experimental autoimmune encephalomyelitis by blocking chemokine-mediated pathogenic cell migration and infiltration. *J. Immunol.* 190(3)1017-1025(2013)

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