Data Sheet (Cat.No.T0457)

TargetMol

Probenecid

Chemical Properties

CAS No. : 57-66-9

Formula: C13H19NO4S

Molecular Weight: 285.36

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Probenecid (Benemid) is a benzoic acid derivative with antihyperuricemic property.
Targets(IC50)	HIV Protease,Antibacterial,TRP/TRPV Channel
In vitro	Probenecid acts as a competitive inhibitor of monoamine transport in the kidneys, liver, and eyes. It decreases the renal clearance of antibiotics, thereby enhancing the levels of antibiotics in the serum. As a competitive inhibitor of the organic anion transporter (OAT), Probenecid prevents OAT-mediated reuptake of uric acid from urine back into the serum, consequently promoting the excretion of uric acid by the kidneys.
In vivo	In 1321N1 astrocytoma cells, Probenecid (2.5 mM) effectively inhibits the efflux of Fura-2 without altering basal calcium ion concentration or the calcium response to muscarine.
Cell Research	Probenecid is dissolved at 500 mM in 1 N NaOH and titrated to pH 7.0[1]. HEK-293T cells are transfected with hTAS2R expression constructs using Lipofectamine 2000 in poly-lysine coated, black 384-well plates with clear bottoms and incubated for 22 hours at 37°C. Growth media is removed and cells are washed twice with HBSS containing 20 mM HEPES, then loaded with a calcium indicator dye in HBSS containing 20 mM HEPES (Calcium 4 Assay kit) with or without 1 mM Probenecid. Cells are incubated at 37°C for 1 hour in the presence of both dye and Probenecid, then moved to a Flexstation II-384 set for 32°C. After a 15-minute temperature equilibration (without washout), indicated compounds are injected (at t=~25 seconds) and fluorescence is measured for 100 to 180 seconds, reading every 3 seconds. Data sets are analyzed and represented as % over baseline signal using Prism 5.0 software. For Schild plots, replicates of raw calcium flux values are expressed as % over baseline signal. The mean value at 36 seconds (corresponding to the maximum flux signal) for each concentration of TAS2R ligand in the presence of the indicated concentration of Probenecid is plotted against the log of ligand concentration. Data points are fit using non-linear regression in GraphPad Prism [1].

Solubility Information

Solubility	DMSO: 97 mg/mL (339.92 mM),Sonication is recommended. Ethanol: 21 mg/mL (73.59 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.5043 mL	17.5217 mL	35.0435 mL
5 mM	0.7009 mL	3.5043 mL	7.0087 mL
10 mM	0.3504 mL	1.7522 mL	3.5043 mL
50 mM	0.0701 mL	0.3504 mL	0.7009 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

McDonough PM, et al. Cell Calcium, 1989, 10(3), 171-180.
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Lu J, Wu K, Sha X, et al.TRPV1 alleviates APOE4-dependent microglial antigen presentation and T cell infiltration in Alzheimer's disease.Translational Neurodegeneration.2024, 13(1): 52.
Bang S, et al. Neurosci Lett, 2007, 425(2), 120-125.
Bakos E, et al. Mol Pharmacol, 2000, 57(4), 760-768.
Greene TA, et al. PLoS One, 2011, 6(5), e20123.
Robbins N, et al. Cardiovasc Toxicol, 2012, 12(1), 1-9.