Product Data Sheet

Product Name: ST034307
Cat. No.: GC18584

Chemical Properties

Cas. No.	133406-29-8		
Chemical Name	6-chloro-2-(trichloromethyl)-4H-1-benzopyran-4-one		
SMILES	O=C1C2=CC(Cl)=CC=C2OC(C(Cl)(Cl)Cl)=C1		
Formula	$C_{10}H_4Cl_4O_2$	M.Wt	298
Solubility	DMF: 10 mg/ml,DMF:PBS (pH 7.2) (1:4): 0.2 mg/ml,DMSO: 5 mg/ml	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	ST034307		

Protocol

Cell experiment:

Cell viability assays are conducted with HEK-AC1 cells following plating and compound incubation protocols identical to the procedures described in “cAMP accumulation in cells.” Cell viability is measured as a percentage of vehicle using 2% Triton X-100 as a control. The CellTiter-Glo Luminescent Cell Viability Assay kit from Promega is used to assess cell viability according to the manufacturer’s instructions. Luminescence counts are measured using Synergy 4.

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References:

[1]. Brust TF, et al. Identification of a selective small-molecule inhibitor of type 1 adenylyl cyclase activity with analgesic properties. Sci Signal. 2017 Feb 21;10(467).

Background

ST034307 is a potent and selective adenylyl cyclase 1 (AC1) inhibitor, with IC50 of 2.3 μM.

ST034307 reveals selective inhibition of AC1 and potentiates AC8 activity to a nonsignificant small extent. ST034307 potentiates phorbol 12-myristate 13-acetate (PMA)-stimulated cAMP production by AC2. ST034307 significantly inhibits the forskolin- or isoproterenol-stimulated AC1 activity in HEK cells stably expressing AC1. In contrast, ST034307 has no significant effects in the wild-type HEK cells. ST034307 significantly inhibits the Ca2+/calmodulin-stimulated cAMP accumulation in the hippocampal homogenates. ST034307 dose-dependently inhibits both the development and the maintenance of MOR-mediated sensitization of AC1[1].

ST034307 (0.25 μg) causes a significant relief of CFA-induced inflammatory pain in mice. ST034307 exhibits an estimated median effective dose (E50) value for analgesia of 0.28 μg in the mouse pain model[1].

References:
[1]. Brust TF, et al. Identification of a selective small-molecule inhibitor of type 1 adenylyl cyclase activity with analgesic properties. Sci Signal. 2017 Feb 21;10(467).

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