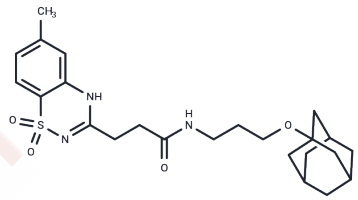
# Data Sheet (Cat.No.T37763)

BTD

## Chemical Properties



CAS No. : 896684-04-1

Formula: C24H33N3O4S

Molecular Weight: 459.6

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 | BTD is a selective transient receptor potential classical 5 (TRPC5) activator, which activates heteromeric channel complexes formed by TRPC5 and its recent relatives TRPC1 or TRPC4, used for studying neurodegenerative diseases. |
| Targets(IC50) | TRP/TRPV Channel |
| In vitro | BTD can activate TRPC5 with EC50 values of 1.4 μM (fluorescence microporous Ca2+ analysis) and 1.3 μM (in whole-cell patch-clamp experiments).<br>BTD can activate TRPM8-expressing HEK293 cells with an EC50 value of 20.6 μM.<br>BTD can activate the heteropolymeric channel complex composed of TRPC5 and its close relatives, TRPC1 or TRPC4. [1]<br>BTD treatment down-regulates TRPC5 expression by increasing the activity of protein kinase C, thereby down-regulating downstream pain markers (CAMKII, ERK) in the spinal cord. [2] |
| In vivo | BTD (1 and 3 mg/kg intraperitoneally injected for 14 days) improved mechanical pain in diabetic neuropathic rats, but did not improve hypothermia or neurological deficits. [2] |

## Solubility Information

| | |
|---|---|
| Solubility | DMSO: 80 mg/mL (174.06 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 2.1758 mL | 10.879 mL | 21.7581 mL |
| 5 mM | 0.4352 mL | 2.1758 mL | 4.3516 mL |
| 10 mM | 0.2176 mL | 1.0879 mL | 2.1758 mL |
| 50 mM | 0.0435 mL | 0.2176 mL | 0.4352 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

Beckmann H, et al. A benzothiadiazine derivative and methylprednisolone are novel and selective activators of transient receptor potential canonical 5 (TRPC5) channels. Cell Calcium. 2017 Sep;66:10-18.
Adhya P, et al. BTD: A TRPC5 activator ameliorates mechanical allodynia in diabetic peripheral neuropathic rats by modulating TRPC5-CAMKII-ERK pathway. Neurochem Int. 2023 Nov;170:105609.