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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

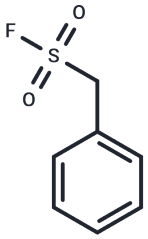
linkedin.com/company/szaboscandic

Data Sheet (Cat.No.T0789)

TargetMol

PMSF

Chemical Properties



CAS No. : 329-98-6

Formula: C7H7FO2S

Molecular Weight: 174.19

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Phenylmethanesulfonyl fluoride (PMSF (Phenylmethylsulfonyl fluoride)) is an enzyme inhibitor that inactivates IRC-50 arvin, subtilisin, and the fatty acid synthetase complex.
Targets(IC50)	Serine Protease,Cysteine Protease
In vitro	Treatment with PMSF (intraperitoneal injection) in mice elicits cannabinoid-like effects, providing analgesia (ED50: 86 mg/kg), hypothermia (ED50: 224 mg/kg), and catalepsy (ED50: 206 mg/kg). When administered to Sprague-Dawley rats, PMSF induces a dose-dependent analgesic effect and significantly potentiates the analgesic effect of β-endorphin in vivo. By inhibiting fatty acid amide hydrolase (FAAH) activity, PMSF suppresses typical cannabinoid or Δ(9)-tetrahydrocannabinol-like effects in ICR mice. Pretreatment with 30 mg/kg PMSF before the injection of [3H]-labeled cannabinoids results in a notable increase in brain cannabinoid levels after 5 minutes compared to [3H]-THC. PMSF pretreatment at 30 mg/kg enhances the cannabinoid-induced effects on the tail-flick response (analgesic effect), locomotion, and spontaneous activity by 5, 8, and 10-fold respectively. Administering PMSF 12 hours before paraoxon (PSP) protects hens from delayed neurotoxicity, whereas administration 4 hours later exacerbates the neurotoxic effects. PMSF pretreatment also prevents organophosphate-induced delayed neuropathy in hens and inhibits neuropathilament degeneration induced by tri-ortho-tolyl phosphate.
In vivo	PMSF is a specific inhibitor of phospholipase C involved in the hydrolysis of phosphatidylinositol. In the longitudinal smooth muscle of guinea pig ileum, PMSF (2 mM) almost completely inhibits carbachol-activated synthesis of phosphatidylinositol muscarinic, without affecting synthesis activated by potassium. PMSF transiently inhibits muscle contractions induced by both potassium and carbachol. As an acetylcholinesterase inhibitor, PMSF outperforms BSF (at 8 times the concentration of PMSF), with BSF being sixfold less effective. PMSF rapidly inhibits the activity of trypsin purified from the human pancreas and acetylcholinesterase in human erythrocytes but has a negligible effect on human trypsin. In Trypanosoma brucei, PMSF inhibits the addition of ethanolamine phosphate to the intermediate of glycosylphosphatidylinositol and the acylation of the glycosyl residue in the blood GPI intermediates as well as the addition of ethanolamine phosphate and the acylation of glycosyl in the procyclic form, with no inhibition observed on the latter in mammalian HeLa cells.

Solubility Information

Solubility	Ethanol: 17.4 mg/mL (100 mM), DMSO: 55 mg/mL (315.75 mM), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.7409 mL	28.7043 mL	57.4086 mL
5 mM	1.1482 mL	5.7409 mL	11.4817 mL
10 mM	0.5741 mL	2.8704 mL	5.7409 mL
50 mM	0.1148 mL	0.5741 mL	1.1482 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.

Reference

Turini P, et al. J Pharmacol Exp Ther, 1969, 167(1), 98-104.
Xu G, Li T, Chen J, et al. Autosomal dominant retinitis pigmentosa-associated gene PRPF8 is essential for hypoxia-induced mitophagy through regulating