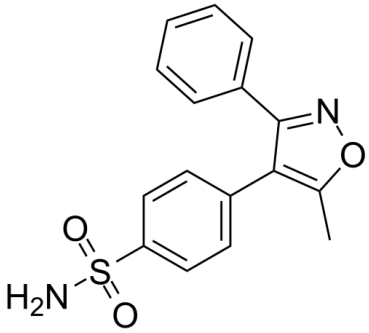
Data Sheet

Product Name:	Valdecoxib
Cat. No.:	CS-1674
CAS No.:	181695-72-7
Molecular Formula:	C16H14N2O3S
Molecular Weight:	314.36
Target:	COX
Pathway:	Immunology/Inflammation
Solubility:	DMSO : ≥ 34 mg/mL (108.16 mM)



BIOLOGICAL ACTIVITY:

Valdecoxib is a highly potent and selective inhibitor of **COX-2**, with **IC_{50}**s of 5 nM and 140 μM for COX-2 and COX-1, respeceively. Valdecoxib can be used in the research of arthritis and pain. IC50 & Target: IC50: 5 nM (COX-2), 140 μM (COX-1)[1] **In Vitro:** Valdecoxib (Compound 2) is a highly potent, selective and orally active inhibitor of COX-2, with IC_{50}s of 5 nM and 140 μM for COX-2 and COX-1, respeceively[1]. Valdecoxib (10, 100 μM) inhibits LPS-induced proliferation of endothelial cells and bFGF secretion in a dose-dependent manner. Valdecoxib stimulates VEGF formation via HMEC-1 under inflammatory conditions[2]. **In Vivo:** Valdecoxib (Compound 2) shows potent oral activity in an acute antiinflammatory assay (rat carrageenan foot pad edema; ED_{50} = 10.2 ± 1.4 mg/kg). Valdecoxib also has chronic antiinflammatory activity in the rat adjuvant arthritis model, with an ED_{50} of 0.032 ± 0.002 mg/kg/day[1]. Valdecoxib (10 mg/kg, i.p.) significantly attenuates the behavioral and biochemical (oxidative damage) alterations in chronic-stressed mice[3].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: [2]**HMEC-1 cells** proliferation is measured using the MTT conversion method. Cells are seeded (**50.000 cells/well**) into 96-well plates. The cells are incubated for 24 h with LPS 100 μg/mL, $CoCl_2$ 200 μM, **Valdecoxib 10 or 100 μM**, LPS and Valdecoxib or $CoCl_2$ and Valdecoxib or without tested chemicals (control group). All the substances are added at the same time. After incubation, 50 μL MTT (1 mg/mL) is added and the plates are incubated at 37°C for 4 h. At the end of the experiment, cells are exposed to 100 μL DMSO, which enables the release of the blue reaction product-formazan. The absorbance at 570 nm is read on a microplate reader and results are expressed as a percentage of the absorbance measured in control cells[2].

Animal Administration: [3]Mice[3]

The drugs including naproxen (14 mg/kg, i.p.), rofecoxib (5 mg/kg, i.p.), meloxicam (5 mg/kg, i.p.), nimesulide (5 mg/kg, i.p.) and **Valdecoxib (10 mg/kg, i.p.)** are used in the assay. The animals are randomized into 7 groups (n=10 in each group), including the naive group, in which the mice only receive vehicle for 15 d without forced swimming session; the control (chronically stressed) group, in which mice receive vehicle 30 min before the forced swimming session (6 min) for 15 d; the naproxen (14 mg/kg) group; the **Valdecoxib (10 mg/kg)** group; the rofecoxib (5 mg/kg) group; the meloxicam (5 mg/kg) group; and the nimesulide (5 mg/kg) group. Drugs are **suspended in 0.25% carboxymethylcellulose (CMC)** and administered **intraperitoneally**, 30 min before the forced swimming session for 15 consecutive days[3].

References:

[1]. Talley JJ, et al. 4-[5-Methyl-3-phenylisoxazol-4-yl]- benzenesulfonamide, valdecoxib: a potent and selective inhibitor of COX-2. J Med Chem. 2000 Mar 9;43(5):775-7.

[2]. Wiktorowska-Owczarek A. The effect of valdecoxib on the production of growth factors evoked by hypoxia and bacterial lipopolysaccharide in HMEC-1 cells. Adv Clin Exp Med. 2013 Nov-Dec;22(6):795-800.

[3]. Kumar A, et al. Protective effects of selective and non-selective cyclooxygenase inhibitors in an animal model of chronic stress. Neurosci Bull. 2010 Feb;26(1):17-27.

CAIndexNames:

Benzenesulfonamide, 4-(5-methyl-3-phenyl-4-isoxazolyl)-

SMILES:

O=S(C1=CC=C(C2=C(C)ON=C2C3=CC=CC=C3)C=C1)(N)=O

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA