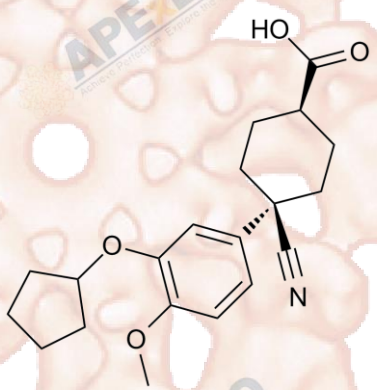
Product Data Sheet

Cilomilast



Cat. No.:	A4329
CAS No.:	153259-65-5
Formula:	C20H25NO4
M.Wt:	343.42
Synonyms:	Ariflo,SB 207499,SB207499
Target:	Metabolism
Pathway:	PDE
Storage:	Store at -20°C

Solvent & Solubility

In Vitro

insoluble in H2O; ⩾12.95 mg/mL in DMSO; ⩾49.9 mg/mL in EtOH with gentle warming and ultrasonic

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	2.9119 mL	14.5594 mL	29.1189 mL
5 mM	0.5824 mL	2.9119 mL	5.8238 mL
10 mM	0.2912 mL	1.4559 mL	2.9119 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary	Potent PDE4 inhibitor
IC_{50} & Target	110 nM (PDE4)

In Vitro

Cell Viability Assay

Cell Line:	MCS cell lines
Preparation method：	The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.
Reacting conditions:	11 d; 40 μM

	Applications:	The results demonstrate that inhibition of PDE (Cilomilast) enhances ALP expression in MSCs via the cAMP pathway. The increase in the level of ALP activity is dependent on the dose of cilomilast. To study the effect of the inducers on MSC differentiation at similar proliferation rates, we treated MCSs, except those cultured in osteogenic medium, with 1% DMSO. We compared MSCs cultured for 11 days in the presence of different inducers with MSCs cultured in osteogenic medium in order to quantify the osteogenetic effects of the inducers. We found that the ALP activity levels of MCSs treated with a combination of PDE4 inhibitor (40 μM) and BMP-2 (300 ng/mL) were almost double the ALP activity level of MSCs treated with osteogenic medium, suggesting that the mineralisation process is more rapid.
In Vivo	**Animal experiment**	
	Animal models:	Female C57BL/6 mice
	Dosage form:	Cilomilast 0.05%; ocular surface instillation three times per day over a period of 7 days.
	Applications:	Real-time PCR was used to quantify the expression of transcripts encoding IL-1α, IL-1β, and TNF-α in the corneas and conjunctivae of DED-induced mice. Treatment with topical cilomilast significantly decreased the corneal expression of TNF-α as compared with the vehicle-treated group. Compared with the DED-untreated corneas, treatment with cilomilast significantly reduced IL-1α and TNF-α expression.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

[1] Munisso M C, Kang J H, Tsurufuji M, et al. Cilomilast enhances osteoblast differentiation of mesenchymal stem cells and bone formation induced by bone morphogenetic protein 2[J]. Biochimie, 2012, 94(11): 2360-2365.

[2] Sadrai Z, Stevenson W, Okanobo A, et al. PDE4 inhibition suppresses IL-17–associated immunity in dry eye disease[J]. Investigative ophthalmology & visual science, 2012, 53(7): 3584-3591.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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