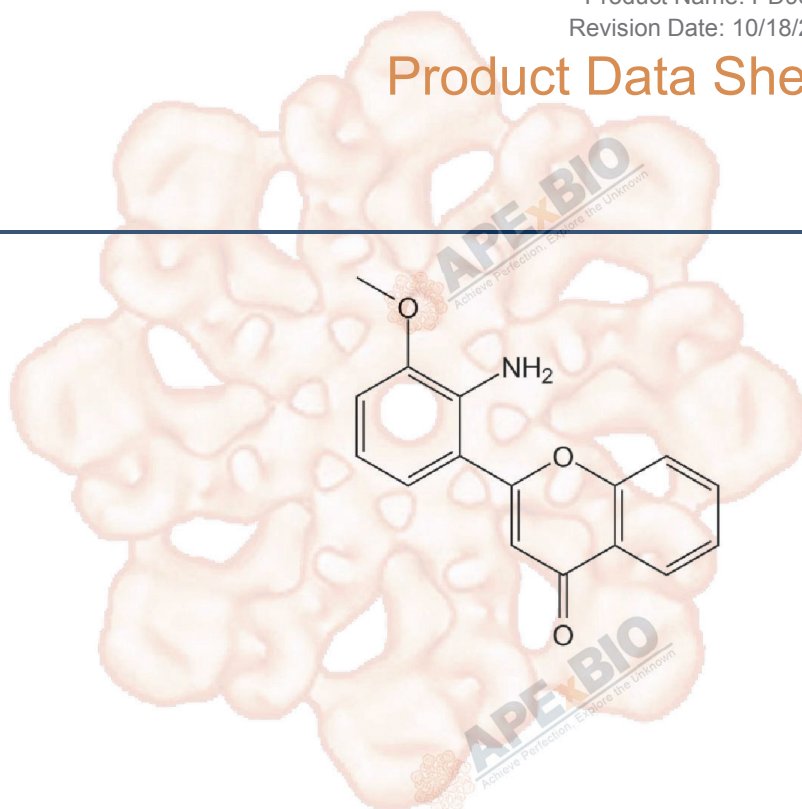


Product Data Sheet

PD98059

Cat. No.:	A1663
CAS No.:	167869-21-8
Formula:	C ₁₆ H ₁₃ NO ₃
M.Wt:	267.28
Synonyms:	
Target:	MAPK Signaling
Pathway:	MEK1/2
Storage:	Store at -20°C



Solvent & Solubility

insoluble in EtOH; insoluble in H₂O; ≥40.23 mg/mL in DMSO

In Vitro

Preparing Stock Solutions	Solvent	Mass		
		1mg	5mg	10mg
	Concentration			
	1 mM	3.7414 mL	18.7070 mL	37.4139 mL
	5 mM	0.7483 mL	3.7414 mL	7.4828 mL
	10 mM	0.3741 mL	1.8707 mL	3.7414 mL

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

Biological Activity

Shortsummary

MEK inhibitor, selective and reversible

IC₅₀ & Target

10 μM (GST-MEK1), 10 μM (GST-MEK-2E))

In Vitro

Cell Viability Assay

Cell Line: C-81 LNCaP cells (LNCaP cells with 80–120 passage numbers)

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: 10 μM, 3 days

	Applications:	Treatment of C-81 LNCaP cells with 10 μ M PD98059 as a single agent resulted in a 5-fold elevation of Bax protein, while 1.2 nM docetaxel alone caused only a 2-fold elevation. A combination of 10 μ M PD98056 with 1.2 nM docetaxel led to a 15-fold elevated expression of Bax in addition to the phosphorylation inactivation of Bcl-2 and diminished elevation of Bcl-XL. These combined effects were associated with a great increase of apoptotic cells, which may contribute to the approximately 20% additional suppression of cell growth.
In Vivo	Animal experiment	
	Animal models:	Male SV-129 mice
	Dosage form:	Intracerebroventricular injection, 200 μ M
	Applications:	Mice were treated with PD98059 and 30 min later, ischemia was induced. Pretreatment with PD98059 reduced phospho-ERK1/2 immunostaining in the cortex within the MCA territory after 2 hr of ischemia and 3 min of reperfusion. PD98059 also attenuated infarct size by 55%.
	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

1. Lan YY, Wang YQ, et al. "CCR5 silencing reduces inflammatory response, inhibits viability, and promotes apoptosis of synovial cells in rat models of rheumatoid arthritis through the MAPK signaling pathway." J Cell Physiol. 2019 Aug;234(10):18748-18762.PMID:31066041
2. Ramos-Alvarez I, Lee L, et al. "Cyclic AMP-dependent protein kinase A and EPAC mediate VIP and secretin stimulation of PAK4 and activation of Na(+),K(+)-ATPase in pancreatic acinar cells." Am J Physiol Gastrointest Liver Physiol. 2019 Feb 1;316(2):G263-G277.PMID:30520694
3. Yuan W, Deng D, et al. "Hyperresponsiveness to interferon gamma exposure as a response mechanism to anti-PD-1 therapy in microsatellite instability colorectal cancer." Cancer Immunol Immunother. 2018 Nov 7.PMID:30406373
4. Wu Y, Liu L, et al. "MicroRNA let-7b inhibits keratinocyte differentiation by targeting IL-6 mediated ERK signaling in psoriasis." Cell Commun Signal. 2018 Sep 15;16(1):58.PMID:30219085
5. Ramos-Alvarez I, Jensen RT. "P21-activated kinase 4 in pancreatic acinar cells is activated by numerous gastrointestinal hormones/neurotransmitters and growth factors by novel signaling, and its activation stimulates secretory/growth cascades." Am J Physiol Gastrointest Liver Physiol. 2018 Aug 1;315(2):G302-G317.PMID:29672153

See more customer validations on www.apexbt.com.

References

- [1] Zelivianski S, Spellman M, Kellerman M, et al. ERK inhibitor PD98059 enhances docetaxel-induced apoptosis of androgen-independent human prostate cancer cells. International journal of cancer, 2003, 107(3): 478-485.
- [2] Alessandrini A, Namura S, Moskowitz M A, et al. MEK1 protein kinase inhibition protects against damage resulting from focal cerebral ischemia. Proceedings of the National Academy of Sciences, 1999, 96(22): 12866-12869.

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. Short-term 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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