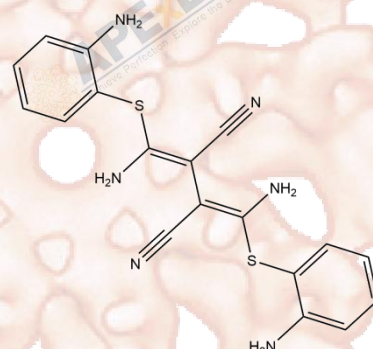


# Product Data Sheet

## U0126

<b>Cat. No.:</b>	BA2003
<b>CAS No.:</b>	109511-58-2
<b>Formula:</b>	C <sub>18</sub> H <sub>16</sub> N <sub>6</sub> S <sub>2</sub>
<b>M.Wt:</b>	380.49
<b>Synonyms:</b>	2,3-bis[amino[(2-aminophenyl)thio]methylene]-butanedinitrile
<b>Target:</b>	MEK; MAPK
<b>Pathway:</b>	MAPK/ERK; MEK; Autophagy
<b>Storage:</b>	Store at -20° C



## Solvent & Solubility

≥23.15 mg/mL in DMSO with ultrasonic; ≥2.6 mg/mL in EtOH with ultrasonic; insoluble in H<sub>2</sub>O

In Vitro

	Solvent	Mass Concentration	1mg	5mg	10mg
Preparing Stock Solutions		1 mM	2.6282 mL	13.1409 mL	26.2819 mL
		5 mM	0.5256 mL	2.6282 mL	5.2564 mL
		10 mM	0.2628 mL	1.3141 mL	2.6282 mL

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

## Biological Activity

Shortsummary

U0126 (CAS 109511-58-2) is a cell-permeable, non-ATP competitive, selective inhibitor belonging to the class of small molecule kinase inhibitors, functioning as an inhibitor of MEK1 and MEK2 in signal transduction pathways and exhibiting suppression of downstream ERK phosphorylation in various cellular systems. Additionally, it acts as an inhibitor of autophagy and mitophagy processes.

In in vitro experimental settings, U0126 demonstrates effective inhibition of MEK1 and MEK2 with IC<sub>50</sub> values of 72 nM and 58 nM, respectively, tested against recombinant kinase assays and cell line models. It can also disrupt the activation of ERK1/2 MAP kinases and block signal propagation within the Raf/MEK/ERK

pathway, thereby affecting cell proliferation, differentiation, and survival signals.

In application contexts such as studies on cancer biology, cell signaling, and neurobiology, U0126 is widely used for dissecting the roles of the MAPK/ERK pathway and its contribution to cellular responses to growth factors and stress stimuli. As a research tool, it aids in delineating the contribution of MEK-mediated signaling to disease progression, drug response, and cell fate determination. U0126's capacity to inhibit autophagy and mitophagy further supports its value in experimental investigation of these degradative processes.

#### IC<sub>50</sub> & Target

#### Cell Viability Assay

Cell Line:	A549 and MDCK II cells.
Preparation method:	U0126 was dissolved at a stock-concentration of 10 mM in DMSO, from which a dilution series was prepared in DMSO to attain the desired U0126 concentration. As DMSO affects the cell vitality, only 1% U0126/DMSO solution was given to the medium.
Reacting conditions:	0.001-1000 $\mu$ M, 48 h.
Applications:	The EC50 values for U0126 against H1N1v were $1.2 \pm 0.4 \mu$ M in A549 cells and $74.7 \pm 1.0 \mu$ M in MDCKII cells

#### Animal experiment

Animal models:	Twelve-week-old female Wistar rats (250 to 265 g)
Dosage form:	30 mg/kg.
Applications:	The vasoconstriction to S6c is markedly reduced.
Preparation method:	Intraperitoneally.
Other notes:	The technical data provided above is for reference only.

## Product Citations

See more customer validations on [www.apexbt.com](http://www.apexbt.com).

## References

- 1.Droebner K, et al. Antiviral activity of the MEK-inhibitor U0126 against pandemic H1N1v and highly pathogenic avian influenza virus in vitro and in vivo. Antiviral Res. 2011, 92(2), 195-203.
- 2.Bessard A, et al. RNAi-mediated ERK2 knockdown inhibits growth of tumor cells in vitro and in vivo. Oncogene. 2008 Sep 11;27(40):5315-25.

## 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.*

**APExBIO Technology**

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