



Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

U0126

5 mg

Store at -20C
#9903

For Research Use Only. Not for Use in Diagnostic Procedures.

Background

MEK1 and MEK2, also called MAPK or Erk kinases, are dual-specificity protein kinases that function in a mitogen activated protein kinase cascade controlling cell growth and differentiation (1-3). Activation of MEK1 and MEK2 occurs through phosphorylation of two serine residues at positions 217 and 221, located in the activation loop of subdomain VIII, by Raf-like molecules. MEK1/2 is activated by a wide variety of growth factors and cytokines and also by membrane depolarization and calcium influx (1-4). Constitutively active forms of MEK1/2 are sufficient for the transformation of NIH/3T3 cells or the differentiation of PC-12 cells (4). MEK activates p44 and p42 MAP kinase by phosphorylating both threonine and tyrosine residues at sites located within the activation loop of kinase subdomain VIII.

Molecular Formula

C₁₈H₁₆N₆S₂

Molecular Weight

380.5 g/mol

Purity

>98%

CAS

109511-58-2

Solubility

Soluble in DMSO at 35mg/ml and EtOH at 2mg/ml.

Storage

Store lyophilized or in solution at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use

U0126 is supplied as a lyophilized beige to light brown powder. For 10 mM stock, resuspend 5 mg of the inhibitor in 1.31 ml DMSO. Methanol can be substituted for DMSO. Aliquot and freeze at -20°C or below to avoid multiple freeze/thaw cycles which can degrade the inhibitor. For experiments with cultured cells, we recommend pretreating the cells with U0126 at 10 µM for 30 minutes to two hours prior to stimulation. (It may be necessary to use higher concentrations.) This product is for in vitro research use only and is not intended for use in humans or animals.

U0126 has been shown to be a highly selective inhibitor of MEK 1 and MEK 2. When compared with PD98059 #9900, U0126 shows a significantly higher affinity for MEK1. U0126 and PD98059 bind to this enzyme in a mutually exclusive fashion suggesting that they share a common binding site (5). U0126 is able to inhibit both MEK1 and MEK2 while PD98059 inhibits MEK1 more potently than MEK2.

Background References

1. Crews, C.M. et al. (1992) *Science* 258, 478-480.
2. Alessi, D.R. et al. (1994) *EMBO J.* 13, 1610-19.
3. Rosen, L.B. et al. (1994) *Neuron* 12, 1207-21.
4. Cowley, S. et al. (1994) *Cell* 77, 841-52.
5. Favata, M.F. et al. (1998) *J Biol Chem* 273, 18623-32.

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for

diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.