**U0126**

**Autophagy Inhibitor; MEK1/2 Inhibitor**

Catalog code: tlrl-u0126-5  
https://www.invivogen.com/u0126

For research use only  
Version 24A02-MM

### PRODUCT INFORMATION

**Contents**
- 5 x 5 mg U0126

**Storage and stability:**
- U0126 is shipped at room temperature. Upon receipt, store at -20°C.  
- Upon resuspension in DMSO, prepare aliquots of U0126 and store at -20°C. U0126 resuspended in DMSO is stable for 3 months when properly stored. Avoid repeated freeze-thaw cycles.

**Quality control:**
- Purity: ≥97% (UHPLC).  
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

### DESCRIPTION

U0126 is a potent and selective inhibitor of MAP kinase kinases, MEK1 and MEK2\(^1\). It is widely used as an inhibitor for the Raf/MEK/ERK signaling pathway. This signaling pathway plays a critical role in the regulation of diverse cellular activities, including cell proliferation, differentiation, and survival.

U0126 acts by inhibiting the kinase activity of MEK1/2 thus preventing the activation of extracellular signal-regulated kinases 1 and 2 (ERK1/2; also called MAP kinases p44 and p42). ERK1/2 activation is central to different cell death programs, such as autophagy and apoptosis\(^2\).

Studies have shown that treatment with U0126 suppresses autophagy\(^3,4\), as evidenced by reduced levels of Beclin-1 and LC3 and increased p62 expression\(^3\). Additionally, U0126 has been shown to inhibit apoptosis\(^3,4\), indicated by reduced caspase-3 activity and the number of TUNEL-positive cells\(^5\).


### CHEMICAL PROPERTIES

**CAS number:** 109511-58-2  
**Synonym:** 1,4-Diamino-2,3-dicyano-1,4-bis(2-aminophenylthio)-butadiene  
**Formula:** C\(_{18}\)H\(_{16}\)N\(_6\)S\(_2\)  
**Molecular weight:** 380.5 g/mol  
**Solubility:** 10 mg/ml (26.3 mM) in DMSO

### METHODS

**Preparation of stock solution at 25 mM**

1. Add 525 µl of DMSO to 5 mg of U0126.  
3. Vortex until completely dissolved.  
4. Once U0126 has been dissolved in DMSO, it can be used immediately or stored at -20°C for 3 months.  
5. Prepare further dilutions using sterile water or culture medium. We do not recommend storing aqueous solutions for more than one day.

**Working concentration:** 10-50 µM (for cell culture)

### PROTOCOLS

For reference only; as described in the indicated publications.

**Cell Culture Assay**
- **Cell type:** Endometrial stromal cells  
- **Working concentration:** 15-30 µM  
- **Method:** Cell proliferation

**Cell Culture Assay**
- **Cell type:** Human lung carcinoma cell lines A549 and H1975  
- **Working concentration:** 20-50 µM  
- **Method:** Autophagy and apoptosis

**Animal Study**
- **Animal model:** Rabbits  
- **Dose:** 0.1 ml (100 µmol/l)  
- **Administration:** Intra-articular injection

### RELATED PRODUCTS

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<td>mTOR inhibitor</td>
<td>tlrl-rap-5</td>
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<tr>
<td>Bafilomycin A1</td>
<td>Autophagy inhibitor</td>
<td>tlrl-baf</td>
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**TECHNICAL SUPPORT**

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