**Small Molecules**

**Cyclopamine**

Hedgehog pathway inhibitor; Inhibits Smoothened (SMO)

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>72072</th>
<th>72074</th>
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<td></td>
<td>1 mg</td>
<td>5 mg</td>
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Cyclopamine is a steroid alkaloid that inhibits the Hedgehog pathway at the point of the pathway activator Smoothened. Cyclopamine binds to the heptahelical bundle of Smoothened, a G protein-coupled receptor, and prevents it from signaling further downstream (Chen et al.).

**Structure:**

![Structure of Cyclopamine](image)

**Product Description**

Cyclopamine is a steroid alkaloid that inhibits the Hedgehog pathway at the point of the pathway activator Smoothened. Cyclopamine binds to the heptahelical bundle of Smoothened, a G protein-coupled receptor, and prevents it from signaling further downstream (Chen et al.).

**Molecular Name:** Cyclopamine

**Alternative Names:** 11-Deoxojervine; Jervine

**CAS Number:** 4449-51-8

**Chemical Formula:** C_{27}H_{41}NO_{2}

**Molecular Weight:** 411.6 g/mol

**Purity:** ≥ 95%

**Chemical Name:** (2'R,3S,3'R,3'aS,6'S,6aS,6bS,7'aR,11aS,11bR)-1,2,3,3'a,4,4',5',6,6',6a,6b,7,7',7'a,8,11,11a,11b-octadecahydro-3',6',10,11b-tetramethyl-spiro[9H-benzo[a]fluorene-9,2'(3'H)-furo[3,2-b]pyridin]-3-ol

**Properties**

**Physical Appearance:** A crystalline solid

**Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.

**Solubility:**

- Absolute ethanol ≤ 20 mM
  
  For example, to prepare a 10 mM stock solution in absolute ethanol, resuspend 1 mg in 243 µL of absolute ethanol.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in absolute ethanol at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final ethanol concentration above 0.1% due to potential cell toxicity.
Published Applications

MAINTENANCE AND SELF-RENEWAL

- Reduces proliferation of rat neural progenitor cells and mouse neurospheres (Lai et al.; Palma & Ruiz i Altaba).
- Reduces proliferation of mouse mammospheres (Liu et al.).
- Inhibits the growth of human and mouse medulloblastoma cells, and human glioblastoma cells (Bar et al.; Berman et al.).

DIFFERENTIATION

- Promotes differentiation of pancreatic cells from human embryonic stem cells (D’Amour et al.).

CANCER RESEARCH

- Inhibits the growth of human and mouse medulloblastoma cells, and human glioblastoma cells (Bar et al.; Berman et al.).
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References


Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).