α-Amanitin

Cat. No.: HY-19610
CAS No.: 23109-05-9
Molecular Formula: C₃₉H₅₄N₁₀O₁₄S
Molecular Weight: 918.97
Target: DNA/RNA Synthesis; ADC Cytotoxin
Pathway: Cell Cycle/DNA Damage; Antibody-drug Conjugate/ADC Related
Storage: -20°C, protect from light
* The compound is unstable in solutions, freshly prepared is recommended.

SOLVENT & SOLUBILITY

In Vitro
H₂O: ≥ 33.33 mg/mL (36.27 mM)
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>1 mg Mass</th>
<th>5 mg Mass</th>
<th>10 mg Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>1.0882 mL</td>
<td>5.4409 mL</td>
<td>10.8817 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.2176 mL</td>
<td>1.0882 mL</td>
<td>2.1763 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.1088 mL</td>
<td>0.5441 mL</td>
<td>1.0882 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description
α-Amanitin is the principal toxin of several deadly poisonous mushrooms, exerting its toxic function by inhibiting RNA-polimerase II.

IC₅₀ & Target
Traditional Cytotoxic Agents

In Vitro
α-Amanitin decreases TAF15 mRNA and TAF15 protein levels in MKN45 cells, and inhibits the RNAPII activity towards TAF15 mRNA [2]. alpha-Amanitin decreases cell viability by 14%, 21%, 41%, 44%, and 50% at concentrations of 100, 10, 1, 0.1, and 0.01 µg/mL, respectively. The LD₅₀ of the alpha-Amanitin at 36 h is measured as 1 µg/mL. The total amount of protein within the cell at 24 h is significantly increased for the 1 µg/mL dose of alpha-Amanitin compared to the control [3]. α-Amanitin dramatically decreases the expression of gap junctional genes (Gja1, Gja4 and Gjc1) and FSHr and LHr in cumulus cells [4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo
The intravenous LD₅₀ dose of alpha-Amanitin is 0.327 mg/kg body weight after intravenous injection into BALB/c mice. After 12 h of alpha-Amanitin injection in caudal vein, the levels of WBC, RBC and HGB decrease significantly, while those of BUN and Crea increase significantly in serum. alpha-Amanitin inhibits some genes (Hsp90b1, Irx4, etc.), whose encoded proteins regulate the RNA polymerase II activity. alpha-Amanitin down-regulates some proteins (Nmi, Trpc5, etc.) taking part in the
alpha-Amanitin has potent activity in DTC suppression. Mice injected with alpha-Amanitin (0.4 mg/kg, i.p.)-treated cells maintain their body weight, while those receiving a peritoneal injection of MKN45 cells show a constant decrease in body weight. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay

The MTT assay is used to evaluate the overall functional integrity and viability of the cultured cells. The MCF-7 cells are put into 96-well plates (2×10^4 for each well), which are incubated for 24 h. The specific concentrations of alpha-Amanitin and beta-Amanitin are added to the cell culture medium, and plates are incubated for an additional 36 h. MTT solution (1:10 ratio) and dimethyl sulfoxide (DMSO) (100 µL) are then added to the cell culture medium and plates are incubated overnight. The absorbance is measured at 570 nm on a plate reader. This experiment is repeated 3 times. The absorbance data are calculated as percentages according to the control group. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Administration

For tumorigenicity tests, six colonies (untreated) and DTCs derived from MKN45 cells are individually injected subcutaneously into the left and right side of the backs of six 6-week-old female nude mice (BALB/cAJcl-nu/nu). These mice are monitored for 49 days after the inoculation or until tumors reach 10 mm in the largest diameter, and are then euthanized. For the PC model, 1.0×10^6 MKN45 cells are injected intraperitoneally into six 6-week-old female nude mice (BALB/cAJcl-nu/nu). Mice are then treated with CIS (4.0 mg/kg, intraperitoneal administration) or a combination of CIS and alpha-Amanitin (0.4 mg/kg, intraperitoneal administration). For the combination treatment, alpha-Amanitin is given 24 hours before CIS. Body weight is monitored for 28 days after the treatment. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION


See more customer validations on www.MedChemExpress.com

REFERENCES

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898                        Fax: 609-228-5909                        E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA