LTX-315

Cat. No.: HY-19894
CAS No.: 1345407-05-7
Molecular Formula: C₇₈H₁₀₆N₁₈O₉
Molecular Weight: 1439.79
Sequence: Lys-Lys-Trp-Trp-Lys-Lys-(Dip)-Lys-NH₂
Sequence Shortening: KKWWKW-(Dip)-K-NH₂
Target: Others
Pathway: Others
Storage: Powder
-80°C 2 years
-20°C 1 year
In solvent
-80°C 6 months
-20°C 1 month

SOLVENT & SOLUBILITY

In Vitro

H₂O : 100 mg/mL (69.45 mM; Need ultrasonic)
DMSO : ≥ 50 mg/mL (34.73 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>0.6945 mL</td>
<td>3.4727 mL</td>
<td>6.9455 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.1389 mL</td>
<td>0.6945 mL</td>
<td>1.3891 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.0695 mL</td>
<td>0.3473 mL</td>
<td>0.6945 mL</td>
</tr>
</tbody>
</table>

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (1.74 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (1.74 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (1.74 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
LTX-315 is an oncolytic peptide with potent anticancer activity; inhibits MRC-5, A20 and AT84 with IC₅₀s of 34.3, 8.3 and 11 µM, respectively.
IC₅₀ & Target

|        | IC₅₀: 34.3 µM (MRC-5), 8.3 µM (A20), 11 µM (AT84) |

In Vitro

LTX-315 is found to be equipotent against drug-resistant cancer cells, nontoxic towards red blood cells, shows high plasma protein binding and is quite rapidly degraded to non-toxic metabolites. LTX-315 induces rapid killing of cancer cells. The oncolytic activity of LTX-315 stems from both a direct lytic effect on the plasma membrane in addition to permeabilization of the mitochondrial membrane, leading to cellular death by necrosis and release of tumor antigens. Treatment of cancer cells with LTX-315 causes the release of several danger signals (DAMPs) that are associated with immunogenic cell death and stimulation of adaptive immune responses.

In Vivo

Intratumoral administration of LTX-315 has resulted in complete regression and systemic tumor specific immune responses in several preclinical models. Intratumoral administration of LTX-315 resulted in tumor necrosis and the infiltration of immune cells into the tumor parenchyma followed by complete regression of the tumor in the majority of the animals. LTX-315 induced the release of danger-associated molecular pattern molecules such as the high mobility group box-1 protein in vitro and the subsequent upregulation of proinflammatory cytokines such as interleukin (IL) 1β, IL6 and IL18 in vivo. Animals cured by LTX-315 treatment are protected against a re-challenge with live B16 tumor cells both intradermally and intravenously.

PROTOCOL

Cell Assay

Tumor cells are incubated for 4 hours with 10 concentrations of LTX-315 in 1/4 dilution step with a top dose of 400 µM, with 1% (final concentration) Triton X-100 as positive control and FBS-free culture medium as negative control. Cell cytotoxicity is measured using the MTS assay. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Administration

Mice: Tumor cells are harvested, ished in RPMI-1640 and injected intradermally (i.d.) into the right side of the abdomen in C57BL/6 mice. Palpable tumors are injected i.t. with single doses of LTX-315 or LTX-328 dissolved in saline (1.0 mg peptide/50 µL saline) once a day for 3 consecutive days, and the vehicle control is saline only (0.9% NaCl in sterile water). Tumor size is measured using an electronic caliper. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES


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

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