
Product Data Sheet

Product Name: Berbamine hydrochloride

Cat. No.: GN10358

Chemical Properties

Cas. No. 6078-17-7

SMILES CN1CCC2=CC(=C3C=C2C1CC4=CC=C(C=C4)OC5=C(C=CC(=C5)CC6C7=C(O3)C(=C(C=C7CCN6C)OC)OC)O)OC

Formula $C_{37}H_{42}Cl_2N_2O_6$ M.Wt 681.64

Solubility $\geq 68\text{mg/mL}$ in DMSO Storage Store at -20°C , protect from light

General For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure

Protocol

Cell experiment:

The inhibitory effect of Berbamine on growth of KM3 cells is measured by MTT assay. Briefly, KM3 cells (8×10^3 per well) are incubated with increasing concentrations of Berbamine ($1-32 \mu\text{g/mL}$) for 24, 48, or 72 h and then pulsed with $20 \mu\text{L}$ of 5 mg/mL MTT for the last 4 h, $200 \mu\text{L}$ DMSO is then added to dissolve the formazan crystals. Dye absorbance in viable cells is measured at 570 nm , and then the inhibitory concentration of 50% (IC_{50}) is calculated[1].

Animal experiment:

Mice[2] 5×10^6 Huh7 cells in 50% Matrigel dissolved in PBS are inoculated in a NOD/SCID mice. 5×10^6 SK-Hep-1 cells are applied for each xenograft without Matrigel. 100 mg/kg of Berbamine is orally treated to mice with a regimen of twice a day for 5 consecutive days after the tumors reach a size of 2 mm in diameter. After 2 days withdraw, the regimen is repeated once[2].

References:

[1]. Liang Y, et al. Berbamine, a novel nuclear factor kappaB inhibitor, inhibits growth and induces apoptosis in human myeloma cells. Acta Pharmacol Sin. 2009 Dec;30(12):1659-65.

[2]. Meng Z, et al. Berbamine inhibits the growth of liver cancer cells and cancer-initiating cells by targeting Ca^{2+} /calmodulin-dependent protein kinase II. Mol Cancer Ther. 2013 Oct;12(10):2067-77.

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

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Product Data Sheet

Background

Berbamine dihydrochloride is an inhibitor of NF- κ B activity with remarkable anti-myeloma efficacy.

Berbamine, a novel NF- κ B inhibitor, inhibits growth and induces apoptosis in human myeloma cells. Berbamine treatment leads to increased expression of A20, down-regulation of IKK α , p-I κ B α , and follows by inhibition of p65 nuclear localization. As a result, NF- κ B downstream targets such as cyclin D1, Bcl-xL, Bid and survivin are down-regulated. To determine whether Berbamine has growth inhibitory effect on myeloma cells, KM3 cells are treated with Berbamine at various concentrations for 24, 48, and 72 h, respectively, and then cell viability is assessed by MTT assays. Berbamine inhibits the growth of KM3 cells in a dose- and time-dependent manner, and the IC₅₀ values are 8.17 μ g/mL, 5.09 μ g/mL, and 3.84 μ g/mL for treatment of 24, 48, and 72 h, respectively. In contrast, IC₅₀ value of Berbamine for normal hematopoietic cells is 185.20 μ g/mL at 48 h[1].

Berbamine (BBM) is a natural bisbenzylisoquinoline product isolated from traditional Chinese herbal medicine Berberis amurensis and has been used to treat inflammatory and other diseases. The anti-tumor effects of Berbamine are determined on a xenograft animal model. Two liver cancer cell lines, Huh7 (epithelial) and SK-Hep-1 (mesenchymal-like), are inoculated into NOD/SCID mice by subcutaneous injection. The oral Berbamine treatment greatly suppresses the growth of Huh7 xenografted tumors over the time and leads to a tumor reduction by 70% based on the tumor weight. The growth of SK-Hep-1 cells in NOD/SCID mice is less sensitive to Berbamine than that of Huh7. There is a significant suppression of the growth of the SK-Hep-1 xenograft with more than 50% reduction of the tumor weight[2].

References:

- [1]. Liang Y, et al. Berbamine, a novel nuclear factor kappaB inhibitor, inhibits growth and induces apoptosis in human myeloma cells. Acta Pharmacol Sin. 2009 Dec;30(12):1659-65.
- [2]. Meng Z, et al. Berbamine inhibits the growth of liver cancer cells and cancer-initiating cells by targeting Ca²⁺/calmodulin-dependent protein kinase II. Mol Cancer Ther. 2013 Oct;12(10):2067-77.

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