
Product Data Sheet

Product Name: ATM-3507
Cat. No.: GC33254

Chemical Properties

Cas. No. 1861449-70-8

SMILES O=C(C1=CC=CC(OC2=CC3=C(N(CCCN4CCN(C)CC4)C(C)=C3C)C=C2)=C1)N5CCN(CCC6=CC=C(F)C=C6)CC5

Formula $C_{37}H_{46}FN_5O_2$ M.Wt 611.79

Solubility Soluble in DMSO Storage Store at 4°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 Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon Condition request.

Structure

Protocol

Cell experiment:

The 4 melanoma cell lines CHLA-20, CHLA-90, SK-N-BE(2) and CHP-134 are cultured at 37°C in a humidified incubator at 5% CO₂ and supplemented 100 U/mL penicillin and 100 mg/mL streptomycin. Cells are plated in 96-well plates at 2000-4000 cells per well, incubated at 37°C overnight and then treated with various concentrations of TR100/ATM-3507 (0.1-2.5 μM) alone, TR100 and ATM-3507 plus various chemotherapy drugs. The cell viability is performed on day 3-5. For the dosing schedule optimization experiment, TR100 or Vincristine is added at day 1 with the other being added at day 2 or both TR100 and Vincristine are added on day 1 and plates are read at day 5. Results are presented as percentage of survival cells compared with controls. All cell viability assays are run in quadruplicate and the data shown are representative of at least 2 independent experiments[1].

Animal experiment:

Mice[1]Female athymic nude mice (age 4-6 weeks) are used. Mice are subcutaneously injected with 5.0×10^6 CHLA-20 cells in a 150 mL mix of PBS and Matrigel (2:1). ATM-3507 and TR100 are formulated at 15 mg/mL in 30% sulfobutyl-ether-β-cyclodextrin sodium salt (SBECD). Vincristine is dissolved in H₂O at 0.125 mg/kg. When the tumors reached volumes of 200-400 mm³, mice are randomized into the study groups. Animals are followed until the animal reached endpoint criteria. Tumor size is measured using digital calipers twice per week and tumor volume is calculated. Mice are also weighed and observed twice per week for signs of endpoint condition. Mice that demonstrate signs of toxicity or reach endpoint criteria are humanely euthanized by CO₂ asphyxiation and subjected to cervical dislocation as the secondary method of euthanasia[1].

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:

[1]. Currier MA, et al. Identification of Cancer-Targeted Tropomyosin Inhibitors and Their Synergy with Microtubule Drugs. *Mol Cancer Ther.* 2017 Aug;16(8):1555-1565.

Background

ATM-3507 is a potent tropomyosin inhibitor with IC50s from 3.83-6.84 μ M in human melanoma cell lines.

The cell lines differ in their relative expression of Tpm3.1 as well as in the expression of other isoforms. After determining the IC50 concentrations for TR100 and ATM-3507 (CHLA-20: 4.99 ± 0.45 μ M, CHP-134: 3.83 ± 0.67 μ M, CHLA-90: 6.84 ± 2.37 μ M, SK-N-BE(2): 5.00 ± 0.42 μ M) in each of the neuroblastoma cell lines, combinations of tropomyosin inhibitors plus Vincristine are tested at levels of each drug alone that kill less than 50% of the neuroblastoma cells. The combinations of both tropomyosin inhibitors plus Vincristine are completely cytotoxic in CHLA-20 cells. All 4 cell lines show some degree of synergy as determined by the Chou-Talalay method. The effect is not limited to the vinca alkaloids as a similar combination efficacy using paclitaxel plus TR100 or ATM-3507[1].

The maximal tolerance dose (MTD) for TR100 and ATM-3507 is 60 and 150 mg/kg, respectively. It is found that a significant inhibition of tumor growth and prolongation of animal survival using either combination compared with each monotherapy. The median survival of mice increased from 18 days for mice treated with ATM-3507 to more than 49 days for mice treated with the combination. It is also found that twice weekly intravenous administration of ATM-3507 also show combination efficacy. The impact of each treatment or the combination on body weight is minimal. Drug levels are measured following the intravenous administration of ATM-3507 at 30 mg/kg in Balb/c mice (n=3 per time point). The mean half-life of ATM-3507 is 5.01 hrs for the terminal elimination phase. The mean AUC_{0-t} in the plasma is 14,548 ng/h/mL. The C_{max} of ATM-3507 is 5,758 ng/mL and the t_{1/2} is 5.01 h. The observed plasma clearance and volume of distribution at steady state of ATM-3507 is 33.8 mL/min/kg and 7.23 L/kg, respectively[1].

[1]. Currier MA, et al. Identification of Cancer-Targeted Tropomyosin Inhibitors and Their Synergy with Microtubule Drugs. *Mol Cancer Ther.* 2017 Aug;16(8):1555-1565.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA