Product Data Sheet

Product Name: Miriplatin hydrate
Cat. No.: GC36615

Chemical Properties

Cas. No.	250159-48-9		
SMILES	NC1CCCCC1N.[O-]C(CCCCCCCCCCCCC)=O.[O-]C(CCCCCCCCCCCCC)=O.O.[Pt+2]		
Formula	$C_{34}H_{70}N_2O_5Pt$	M.Wt	782.01
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Miriplatin hydrate		

Protocol

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Cell experiment:

Aliquots of AH109A cells are plated into 24-well microplates. Following cell adherence (1 day), Lipiodol (LPD) alone and agents (Miriplatin, etc.) suspended in LPD are added to Falcon cell culture inserts, equipped with a 0.4-μm pore membrane on their bottom. After 7 days of incubation at 37°C in 5% CO2, the numbers of viable cells are examined using AlamarBlue. The IC50 value is defined as the concentration inhibiting cell growth by 50% compared with treatment with LPD alone. To examine platinum concentrations in the medium, agents suspended in LPD are added to Falcon cell culture inserts in wells containing the culture medium alone. The platinum concentrations are quantitatively analyzed by FAAS. Alternatively, aliquots of AH109A cells are plated into 96-well microplates. Following cell adherence (1 day), agents in aqueous solution are added. After 3 days of incubation at 37°C in 5% CO2, the numbers of viable cells are examined using AlamarBlue[2].

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Animal experiment:

Rats[2]Rats bearing a tumor approximately 100-250 mm3 in area are randomly allocated into different treatment groups and a control group, each of which consists of seven rats. Tumor diameters are measured with calipers, and estimated tumor area is calculated by the formula: (smaller diameter) × (larger diameter). All agents (Miriplatin, etc.) suspended in Lipiodol (LPD) and LPD alone are injected into the hepatic artery of tumor-bearing rats at the volume of 0.02 mL/head. The therapeutic dose of each agent is defined in this study as follows: Miriplatin (400 μg/head, 20 mg/mL in LPD), cisplatin (400 μg/head, 20 mg/mL) and zinostatin stimalamer (20 μg/head, 1 mg/mL). After the intra-hepatic arterial administration, the gastroduodenal artery and abdomen are closed with uninterrupted sutures. The tumor growth rate (%) is calculated with the following formula: A7/A70 × 100, where A7 is the estimated tumor area at day 7 and A70 is the estimated tumor area at the initiation of the treatment (day 0). The systemic toxicity of the treatments is assessed in terms of changes in body weight during the experiments. These are calculated as (W7 − W70)/W70 × 100 where W7 is body weight at day 7 and W70 is body weight at day 0[2].

References:

[1]. Kishimoto S, et al. Antitumor effects of a novel lipophilic platinum complex (SM-11355) against a slowly-growing rat hepatic tumor after intra-hepatic arterial administration.

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Biol Pharm Bull. 2000 Mar;23(3):344-8.
[2]. Hanada M, et al. Intra-hepatic arterial administration with miriplatin suspended in an oily lymphographic agent inhibits the growth of tumors implanted in rat livers by inducing platinum-DNA adducts to form and massive apoptosis. Cancer Chemother Pharmacol. 2009 Aug;64(3):473-83.

Background

Miriplatin hydrate (SM-11355 hydrate) is a chemotherapy agent which belongs to the class of alkylating agents.

Miriplatin suspended in lipiodol (miriplatin/LPD, 100 μg/mL) inhibits the growth of AH109A cells, forms platinum-DNA adducts, and induces apoptosis[2].

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Miriplatin (0.02-0.4 mg/20 μL) in lipiodol reduces tumor growth rates in a dose dependent manner in rats bearing AH109A tumor cells[1]. Miriplatin/LPD (400 μg/head) significantly reduces the growth of tumor in rats bearing AH109A cells[2].

[1]. Kishimoto S, et al. Antitumor effects of a novel lipophilic platinum complex (SM-11355) against a slowly-growing rat hepatic tumor after intra-hepatic arterial administration. Biol Pharm Bull. 2000 Mar;23(3):344-8. [2]. Hanada M, et al. Intra-hepatic arterial administration with miriplatin suspended in an oily lymphographic agent inhibits the growth of tumors implanted in rat livers by inducing platinum-DNA adducts to form and massive apoptosis. Cancer Chemother Pharmacol. 2009 Aug;64(3):473-83.

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