Miriplatin (hydrate)

Cat. No.: HY-16325

CAS No.: 250159-48-9

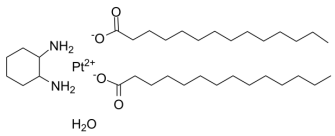
Molecular Formula: $C_{34}H_{70}N_2O_5Pt$

Molecular Weight: 782.01

Target: DNA Alkylator/Crosslinker

Pathway: Cell Cycle/DNA Damage

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Miriplatin hydrate (SM-11355 hydrate) is a chemotherapy agent which belongs to the class of alkylating agents.
In Vitro	Miriplatin suspended in lipiodol (miriplatin/LPD, 100 μg/mL) inhibits the growth of AH109A cells, forms platinum-DNA adducts, and induces apoptosis[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	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% CO_2, the numbers of viable cells are examined using AlamarBlue. The IC_{50} 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% CO_2, the numbers of viable cells are examined using AlamarBlue[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Rats[2] Rats bearing a tumor approximately 100-250 mm^3 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: $A_7/A_{70} \times 100$, where A_7 is the estimated tumor area at day $_7$ and A_{70} 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 $(W_7 - W_{70})/W_{70} \times 100$ where W_7 is body weight at day $_7$ and W_{70} is body weight at day 0[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Control Release. 2021 Jan 10;329:833-846.
- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.

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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. 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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