Liarozole dihydrochloride

Cat. No.: HY-106019C

CAS No.: 1883548-96-6

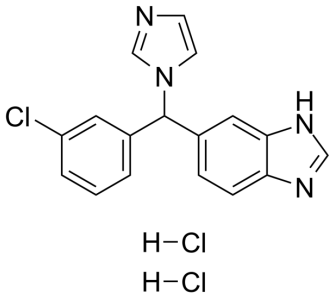
Molecular Formula: $C_{17}H_{15}Cl_3N_4$

Molecular Weight: 381.69

Target: Cytochrome P450; RAR/RXR

Pathway: Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 50 mg/mL (131.00 mM)
DMSO : 50 mg/mL (131.00 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6199 mL	13.0996 mL	26.1993 mL
	5 mM	0.5240 mL	2.6199 mL	5.2399 mL
	10 mM	0.2620 mL	1.3100 mL	2.6199 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (261.99 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.45 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.45 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.45 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Liarozole (R75251) dihydrochloride is an imidazole derivative and orally active retinoic acid (RA) metabolism-blocking agent (RAMBA). Liarozole dihydrochloride inhibits the cytochrome P450 (CYP26)-dependent 4-hydroxylation of RA (IC_{50}=7 μM), resulting in increased tissue levels of RA. Liarozole dihydrochloride shows antitumoral properties[1][2][3].

IC_{50} & Target

CYP26

	7 μM (IC_{50})
In Vitro	Liarozole dihydrochloride (0.01~10 μM; 9 days; MCF-7 cells) inhibits cells proliferation[3]. Liarozole dihydrochloride (1 μM; 4 days; mesenchymal cells) completely inhibits chondrogenesis[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[3]

Cell Line:	MCF-7 cells
Concentration:	0.01~10 μM
Incubation Time:	9 days
Result:	Had an effect of 35% inhibition at 10 μM on cell proliferation.

Cell Differentiation Assay[4]

Cell Line:	Mesenchymal cells
Concentration:	1 μM
Incubation Time:	4 days
Result:	Completely inhibited chondrogenesis.

In Vivo

Liarozole dihydrochloride (5-20 mg/kg; p.o.) reverses the vaginal keratosis caused by estrogen stimulation[5].
Liarozole dihydrochloride (40 mg/kg; p.o.) reduces tumor burden substantially[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Ovariectomized rats
Dosage:	5~20 mg/kg
Administration:	P.o.
Result:	Reversed the vaginal keratosis caused by estrogen stimulation.

Animal Model:	SCID mice
Dosage:	40 mg/kg
Administration:	P.o.
Result:	Inhibited tumor growth and survival.

REFERENCES

[1]. Kuijpers AL, et al. The effects of oral liarozole on epidermal proliferation and differentiation in severe plaque psoriasis are comparable with those of acitretin. Br J Dermatol. 1998;139(3):380-389.

[2]. Lucker GP, et al. Oral treatment of ichthyosis by the cytochrome P-450 inhibitor liarozole. Br J Dermatol. 1997;136(1):71-75.

[3]. Wouters W, et al. Effects of liarozole, a new antitumoral compound, on retinoic acid-induced inhibition of cell growth and on retinoic acid metabolism in MCF-7 human breast cancer cells. Cancer Res. 1992;52(10):2841-2846.

[4]. Pignatello MA, et al. Liarozole markedly increases all trans-retinoic acid toxicity in mouse limb bud cell cultures: a model to explain the potency of the aromatic retinoid

(E)-4-[2-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthylenyl)-1-propenyl] benzo

[5]. Van Wauwe J, et al. Liarozole, an inhibitor of retinoic acid metabolism, exerts retinoid-mimetic effects in vivo. J Pharmacol Exp Ther. 1992;261(2):773-779.

[6]. Stearns ME, et al. Liarozole and 13-cis-retinoic acid anti-prostatic tumor activity [published correction appears in Cancer Res 1993 Dec 1;53(23):5831]. Cancer Res. 1993;53(13):3073-3077.

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

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