
Product Data Sheet

Product Name: FK1052 hydrochloride

Cat. No.: GC31011

Chemical Properties

Cas. No. 129299-81-6

SMILES O=C1C(CC2=C(C)N=CN2)CCC(N31)=C(C)C4=C3C=CC=C4.[H]ClFormula $C_{18}H_{20}ClN_3O$ M.Wt 329.82

Solubility Soluble in DMSO Storage Store at -20°C

General tips 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**

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

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Animal experiment:

Mice and Rats[1] Male Sprague-Dawley rats weighing 220 to 330 g and male ddy mice weighing 25 to 35 g are used. FK1052, Ondansetron, Granisetron, Methysergide, Ketanserin and Atropine are dissolved in distilled water. 5-HT, 2-methyl-5-HT, 1-phenylbiguanide and 5-MeOT are dissolved in physiological saline. Diazepam is suspended with 0.5% methylcellulose solution. The drugs are administered to rats at a volume of 2 mL/kg and to mice at a volume of 5 mL/kg. Dogs[2] Beagle dogs of either sex weighting 8.0 to 18.5 kg are used in the study. Dogs are injected i.v. with MTX (2.5 mg/kg/mL) at 7:30 AM. The animal behavior is recorded using a video camera with an automatic night photographing system for up to 72 h and analyzed at the end of the experiment. FK1052 (1 and 3.2 mg/kg), Ondansetron (1 mg/kg), Tropisetron (1 mg/kg), CP-122,721 (0.1 mg/kg), or vehicle (0.5 mL/kg) is administered i.v. at 24, 36, 48, and 60 h after MTX treatment. Episodes of emesis occurring within a few minutes are defined as a single emetic episode. A 12 h artificial light cycle (lights on between 7:30 AM and 7:30 PM) is used throughout the study. Dogs are given a standard laboratory dog chow (300 g/day) and water ad libitum. The animals are retested with MTX at least 6 weeks later.

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References:

[1]. Kadowaki M, et al. Effect of FK1052, a potent 5-hydroxytryptamine₃ and 5-hydroxytryptamine₄ receptor dual antagonist, on colonic function in vivo. J Pharmacol Exp Ther. 1993 Jul;266(1):74-80.

[2]. Yamakuni H, et al. Probable involvement of the 5-hydroxytryptamine₄ receptor in methotrexate-induced delayed emesis in dogs. J Pharmacol Exp Ther. 2000 Mar;292(3):1002-7.

Background

FK1052 hydrochloride is a potent 5-HT₃ and 5-HT₄ receptor dual antagonist.

In conscious rats, both 5-HT and 5-methoxytryptamine significantly increase fecal pellet output and accelerate colonic transit. In contrast, the effect of 2-methyl-5-HT is slight. Although Ondansetron and Granisetron slightly reduce 5-HT (1 mg/kg s.c.) stimulated colonic transit, FK1052, at 0.1 mg/kg p.o., inhibits completely the increases in the colonic transit. Furthermore, FK1052, Ondansetron and Granisetron significantly depress the

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increase in fecal pellet output caused by wrap-restraint stress, with ED50 values of 0.21, 3.0 and 1.1 mg/kg p.o., respectively. Intraperitoneal administration of 5-HT and 5-methoxytryptamine, but not 2-methyl-5-HT, produces a dose-related increase in the incidence of diarrhea in fasted mice. 5-HT (0.32 mg/kg i.p.)-induced diarrhea is also inhibited by FK1052, Ondansetron and Granisetron, with ED50 values of 0.09, 2.3 and 0.88 mg/kg p.o., respectively[1]. FK1052 (1 mg/kg i.v. ×4) apparently reduces delayed emesis caused by Methotrexate (MTX) and increases, but not significantly, the time for onset of emesis. Furthermore, increasing the dose to 3.2 mg/kg of FK1052 also significantly inhibits the number of the emetic episodes induced by MTX, of which the action is more effective than the treatment with FK1052 at 1 mg/kg[2].

[1]. Kadowaki M, et al. Effect of FK1052, a potent 5-hydroxytryptamine₃ and 5-hydroxytryptamine₄ receptor dual antagonist, on colonic function in vivo. *J Pharmacol Exp Ther.* 1993 Jul;266(1):74-80. [2]. Yamakuni H, et al. Probable involvement of the 5-hydroxytryptamine₄ receptor in methotrexate-induced delayed emesis in dogs. *J Pharmacol Exp Ther.* 2000 Mar;292(3):1002-7.

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