

Product Data Sheet

Product Name: FR167344 free base
 Cat. No.: GC31926

Chemical Properties

Cas. No. 215258-13-2

SMILES O=C(N(C)C)C1=CC=C(/C=C/C(NCC(N(C2=CC=C(Cl)C(COC3=CC=CN4C3=NC(C)=C4Br)=C2Cl)C)=O)=O)C=C1

Formula $C_{30}H_{28}BrCl_2N_5O_4$ M.Wt 673.38

Solubility Soluble in DMSO Storage Store at $-20^{\circ}C$

General For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ 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

Kinase experiment:

Binding assays for the B1 and B2 receptor are carried out by using $[3H]$ des-Arg10-kallidin and $[3H]$ bradykinin, respectively. Cell membranes (12.5-75 mg/mL) are incubated with various concentrations (saturation experiments) or 500 pM (displacement experiments) of $[3H]$ des-Arg10-kallidin or $[3H]$ bradykinin for 90 min in 0.25 mL of the binding solution containing 20 mM HEPES, pH 7.4, 125 mM N-methyl-D-glucamine, 5 mM KCl, 0.1% BSA, 1 mM 1,10-phenanthroline monohydrate, 1 mM dithiothreitol, 1 mM captopril and 140 mg/mL bacitracin (for the B1 receptor) or 25 mM trimethylaminoethanesulfonic acid, pH 6.8, 0.1% BSA, 1 mM 1,10-phenanthroline monohydrate, 1 mM dithiothreitol, 1 mM captopril, and 140 mg/mL bacitracin (for the B2 receptor). All experiments are carried out at least three times in duplicate. The specific binding is calculated by subtracting the nonspecific binding, determined in the presence of 1 mM unlabeled des-Arg10-kallidin (for the B1 receptor) or bradykinin (for the B2 receptor), from the total binding. The specific binding activity amounted to 90-92% of the total binding activity[1].

Animal experiment:

Rat: Male Sprague-Dawley rats (8 weeks old) are deprived of food overnight and treated orally with FR167344, 15 min before carrageenin is injected into the right hind paw intraplantar. Paw volume is measured by water plethysmometer before and 1, 2, 3 and 4 h after the injection of carrageenin. FR167344 is dissolved in 0.05N HCl and administered orally at a volume of 5 mL/kg. Carrageenin is made up as 1% solution in saline. Each rat received 0.1 mL of the irritant. As saline-control, saline is administered in the same manner as carrageenin. Mouse: Male ICR mice (Slc:ICR, 5 weeks old) are fasted overnight and used. Writhing responses are induced by an intraperitoneal injection of kaolin (250 mg/kg, 50 mL/kg). The responses are counted over a 10 or 15 min period by a trained observer. FR167344 dissolved in 0.05N HCl or vehicle (10 mL/kg) is administered orally 30 min before the intraperitoneal injection of kaolin. As saline-control, saline is administered in the same manner as kaolin[2].

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

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References:

- [1]. Aramori I, et al. Novel subtype-selective nonpeptide bradykinin receptor antagonists FR167344 and FR173657. Mol Pharmacol. 1997 Feb;51(2):171-6.
- [2]. Asano M, et al. Effects of a nonpeptide bradykinin B2 receptor antagonist, FR167344, on different in vivo animal models of inflammation. Br J Pharmacol. 1997 Dec;122(7):1436-40.

Background

FR167344 free base is an orally active, nonpeptide bradykinin receptor B2 antagonist. FR167344 free base shows a high affinity binding to the B2 receptor with an IC50 value of 65 nM and no binding affinity for the B1 receptor.

In competitive experiments using membranes prepared from Chinese hamster ovary cells expressing the bradykinin receptor subtypes, FR167344 shows a high affinity binding to the B2 receptor with IC50 values of 65 nM, and no binding affinity for the B1 receptor. FR167344 inhibits the B2 receptor-mediated phosphatidylinositol (PI) hydrolysis and produces a concentration-dependent rightward shift in the dose-response curve to bradykinin. This shift is accompanied by a progressive reduction of maximal response. Estimated pA2 values for the antagonism of bradykinin induced PI hydrolysis by FR167344 is 8.0. FR167344 shows no stimulatory effects on PI hydrolysis[1].

Oral administration of FR167344 inhibits carrageenin-induced paw oedema in rats with an ID50 of 2.7 mg/kg at 2h after carrageenin injection. Oral administration of FR167344 inhibits kaolin-induced writhing in mice with an ID50 of 2.8 mg/kg in 10 min writhing and 4.2 mg/kg in 15 min writhing. Oral administration of FR167344 inhibits caerulein-induced pancreatic oedema with an ID50 of 13.8 mg/kg as well as increases in amylase and lipase of blood samples with ID50 of 10.3 and 7.4 mg/kg, respectively, in rats[2].

[1]. Aramori I, et al. Novel subtype-selective nonpeptide bradykinin receptor antagonists FR167344 and FR173657. Mol Pharmacol. 1997 Feb;51(2):171-6. [2]. Asano M, et al. Effects of a nonpeptide bradykinin B2 receptor antagonist,

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