Product Datasheet

CCG 203769

Catalog No. **BP-02070** · CAS **410074-60-1** · Form **free base** · Physical state **liquid** · Color **colorless to light yellow** · Version **1.0** · Revision **2026-09-14**

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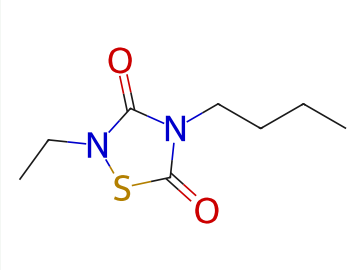
Target	Research area
RGS Protein	**Neurological Disease**

Molecular formula	$C_8H_{14}N_2O_2S$
Molecular weight	**202.2740**

STRUCTURE



DESCRIPTION

CCG 203769 is a selective G protein signaling (RGS4) inhibitor, which blocks the RGS4-Gαo protein-protein interaction in vitro with an IC50 of 17 nM.

BIOLOGICAL ACTIVITY

In Vitro

CCG 203769 also displays dramatic selectivity (8- to >5000-fold) for RGS4 over other RGS proteins. CCG 203769 inhibits RGS19 with an IC50 of 140 nM (8-fold selective for RGS4) and 6 μM for RGS16 (350-fold selective for RGS4). The closely related RGS8 is very weakly inhibited (IC50>60 μM) providing >4500-fold selectivity for RGS4. CCG 203769 inhibits GSK-3β with an IC50 value of 5 μM. CCG 203769 does not inhibit the cysteine protease papain at 100 μM. CCG 203769 does not inhibit RGS7, which lacks cysteines in the RGS domain. CCG 203769 inhibits RGS/Gαo binding in an RGS-selective manner. CCG 203769 enhances Gαq-dependent cellular Ca2+ signaling in an RGS4-dependent manner. CCG 203769 also blocks the GTPase accelerating protein (GAP) activity of RGS4. In single-turnover and steady-state GTPase experiments with Gαo and Gαi1, the rate of GTP hydrolysis is strongly stimulated by RGS4, and this effect is inhibited by CCG 203769 with an IC50<1 μM.

In Vivo

To determine whether this genetic disruption of RGS4 function can be replicated pharmacologically, CCG 203769 is tested for effects on Carbamoylcholine chloride-mediated bradycardia in conscious, unrestrained rats. Carbamoylcholine chloride (0.1 mg/kg, IP) produces a modest decrease in heart rate compared to that of a saline vehicle control. CCG 203769 (10 mg/kg, IV) has no significant effect upon heart rate when given alone. However, CCG 203769, administered immediately prior to Carbamoylcholine chloride, significantly potentiates the bradycardic effect ($p < 0.05$). Given the functional role of RGS4 in Parkinson's disease models, CCG 203769 is tested in a pharmacologic model of D2 antagonist-induced bradykinesia. Raclopride administration in rats causes increased hang time in the bar test, which is rapidly reversed by doses of CCG 203769 ranging from 0.1 to 10

mg/kg. The lowest dose, 0.01 mg/kg has no effect, while 0.1 mg/kg produces a submaximal effect. The higher doses, 1 and 10 mg/kg, produce equivalent effects. Similarly, the raclopride-induced paw drag in mice is reversed by 0.1-10 mg/kg CCG 203769.

SOLUBILITY

Soluble in DMSO : 62.5 mg/mL

REFERENCES

[1]. Blazer LL, et al. Selectivity and anti-Parkinson's potential of thiadiazolidinone RGS4 inhibitors. ACS Chem Neurosci. 2015 Jun 17;6(6):911-9.