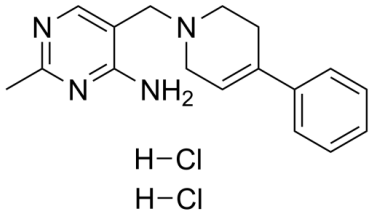
Data Sheet

Product Name:	Ro 10-5824 (dihydrochloride)
Cat. No.:	CS-7578
CAS No.:	189744-94-3
Molecular Formula:	$C_{17}H_{22}Cl_2N_4$
Molecular Weight:	353.29
Target:	Dopamine Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Solubility:	H2O : 100 mg/mL (283.05 mM; Need ultrasonic); DMSO : 8.33 mg/mL (23.58 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Ro 10-5824 dihydrochloride is a selective **dopamine D4 receptor** partial agonist, with **K_i** of 5.2 nM. IC50 & Target: Ki: 5.2 nM (dopamine D4 receptor)[2] **In Vitro:** RO-10-5824 shows high affinity binding with a K_i=5.2±0.9 nM (n=3), 250-fold selectivity vs human D3R, and >1000 fold selectivity for D4 vs human D2, D1, and D5 receptors. RO-10-5824 stimulates ^{35}S-GTPγS binding with an EC_{50} value of 205±67 nM (n=7) and maximal induction at 36±4% above basal level[2]. **In Vivo:** Ro 10-5824 (3 mg/kg) increases the success rate in the ORD task. At doses of 1 and 3 mg/kg, Ro 10-5824 increases baseline gamma band activity in the frontal cortex. Ro 10-5824 has no effect on spontaneous locomotion[1]. RO-10-5824 (10.0 mg/kg) does not increase center entries in the open field in a single 60-min session without the novel object present, nor does it increase overall transitions in the initial experiment with C57 mice[2].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: Ro 10-582 is formulated in saline.[2]In the experiment, 39 C57 and 40 DBA mice are tested over a three-day period. On days 1 and 2, mice are placed into the VT for 60 min and locomotor behavior is recorded. On the third day, mice are placed into the VT chamber for 60 min. Following the 60-min period, mice are removed from the chambers and administered 0, 1.0, 3.0, or 10.0 mg/kg of RO-10-5824 (n=9-11 per group). Mice are assigned to drug group pseudo-randomly, with each dose being represented in a cage of four mice. A novel paper cup measuring 9.5 cm in height and 7.5 cm in diameter at the rim is placed upside down in the center of each open field and secured to the floor with tape. Mice are returned to the VT 10 min following injection and tested for an additional 30 min.

References:

[1]. Nakazawa S, et al. Behavioral and neurophysiological effects of Ro 10-5824, a dopamine D4 receptor partial agonist, in common marmosets. Psychopharmacology (Berl). 2015 Sep;232(17):3287-95.

[2]. Powell SB, et al. RO-10-5824 is a selective dopamine D4 receptor agonist that increases novel object exploration in C57 mice. Neuropharmacology. 2003 Mar;44(4):473-81.

CAIndexNames:

4-Pyrimidinamine, 5-[(3,6-dihydro-4-phenyl-1(2H)-pyridinyl)methyl]-2-methyl-, hydrochloride (1:2)

SMILES:

NC1=NC(C)=NC=C1CN2CC=C(C3=CC=CC=C3)CC2.[H]Cl.[H]Cl

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

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