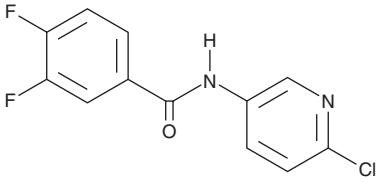
PRODUCT INFORMATION

ICA 27243

Item No. 40827

CAS Registry No.:	325457-89-4
Formal Name:	N-(6-chloro-3-pyridinyl)-3,4-difluoro-benzamide
Synonym:	ICA 027243
MF:	$C_{12}H_7ClF_2N_2O$
FW:	268.7
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

ICA 27243 is supplied as a solid. A stock solution may be made by dissolving the ICA 27243 in the solvent of choice, which should be purged with an inert gas. ICA 27243 is soluble (≥10 mg/ml) in DMSO and sparingly soluble (1-10 mg/ml) in ethanol.

Description

ICA 27243 is an activator of heteromeric voltage-gated potassium channels containing $K_V7.2$ and $K_V7.3$ subunits ($K_V7.2/K_V7.3$).[1] It enhances rubidium efflux in an agonist-induced rubidium efflux assay using CHO cells expressing $K_V7.2/K_V7.3$ channels (EC_{50} = 0.38 µM). ICA 27243 is selective for heteromeric $K_V7.2/K_V7.3$ channels over homomeric $K_V7.4$ channels (EC_{50} = 7.1 µM) and is 100-300-fold selective for $K_V7.2/K_V7.3$ over $K_V7.3/K_V7.5$ channels.[2] It is also selective for $K_V7.2/K_V7.3$ channels over a panel of neurotransmitter receptors and voltage-gated sodium channel $Na_V1.2$ at 10 µM, as well as $GABA_A$ receptors and high voltage-activated calcium channels at 30 µM. ICA 27243 protects against maximal electroshock-induced seizures in a rat model of epilepsy (ED_{50} = 1.5 mg/kg).[1] It also prevents hyperactivity induced by amphetamine and chlordiazepoxide, but not by amphetamine alone, without affecting basal locomotor activity in a mouse model of manic-like hyperactivity when administered at a dose of 10 mg/kg.[3]

References

1. Amato, G., Roeloffs, R., Rigdon, G.C., *et al. N*-Pyridyl and pyrimidine benzamides as KCNQ2/Q3 potassium channel openers for the treatment of epilepsy. *ACS Med. Chem. Lett.* **2(6)**, 481-484 (2011).
2. Wickenden, A.D., Krajewski, J.L., London, B., *et al. N*-(6-chloro-pyridin-3-yl)-3,4-difluoro-benzamide (ICA-27243): A novel, selective KCNQ2/Q3 potassium channel activator. *Mol. Pharmacol.* **73(3)**, 977-986 (2008).
3. Redrobe, J.P. and Nielsen, A.N. Effects of neuronal K_V7 potassium channel activators on hyperactivity in a rodent model of mania. *Behav. Brain Res.* **198(2)**, 481-485 (2009).

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