
Product Data Sheet

Product Name: ARL 17477 dihydrochloride

Cat. No.: GC14802

Chemical Properties

Cas. No. 866914-87-6

Chemical Name (Z)-N'-(4-(2-((3-chlorobenzyl)amino)ethyl)phenyl)thiophene-2-carboximidamide dihydrochloride

SMILES C1C=CC=CC(CNCCC2=CC=C(/N=C(N)/C3=CC=CS3)C=C2)=C1.Cl.Cl

Formula $C_{20}H_{20}ClN_3S \cdot 2HCl$ M.Wt 442.83

Solubility <22.14mg/ml in Water; <44.28mg/ml in DMSO Storage Desiccate at RT

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

Background

ARL 17477 dihydrochloride is a selective and potent neuronal nitrogen oxide synthase (nNOS) inhibitor with IC₅₀ values of 1 and 17 μM for nNOS and endothelial NOS, respectively [1].

Neuronal NOS (nNOS) plays an important role in the development of ischaemic brain necrosis while endothelial NOS (eNOS) protects brain tissue through increasing ischaemic regional cerebral blood flow [1].

In rats after transient MCA occlusion, ARL 17477 (1mg/kg, 3mg/kg and 10mg/kg) reduced ischemic infarct volume by 53%, 23% and 6.5% respectively in a dose-dependent way. ARL 17477 (10 mg/kg) significantly reduced regional cerebral blood flow (rCBF) by 27±5.3% and 24±14.08%. Also, it reduced cortical NOS activity by 86±14.9% and 91±8.9% at 10 min or 3 h, respectively [2]. In the global cerebral ischaemia gerbil model, the combination of MK-801 with ARL 17477 provided 44% greater protection than the total protection or either alone. Likewise, the combination of LY293558 with ARL 17477 provided 35% greater protection than total protection of either compound

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

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alone [3].

References:

[1]. O'Neill MJ, Murray TK, McCarty DR, et al. ARL 17477, a selective nitric oxide synthase inhibitor, with neuroprotective effects in animal models of global and focal cerebral ischaemia. *Brain Res*, 2000, 871(2): 234-244.

[2]. Zhang ZG, Reif D, Macdonald J, et al. ARL 17477, a potent and selective neuronal NOS inhibitor decreases infarct volume after transient middle cerebral artery occlusion in rats. *J Cereb Blood Flow Metab*, 1996, 16(4): 599-604.

[3]. Hicks CA, Ward MA, Swettenham JB, et al. Synergistic neuroprotective effects by combining an NMDA or AMPA receptor antagonist with nitric oxide synthase inhibitors in global cerebral ischaemia. *Eur J Pharmacol*, 1999, 381(2-3): 113-119.

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