Product data sheet

MedKoo

MedKoo Cat#: 471051	
Name: RJR 2429 dihydrochloride	
CAS#: 1021418-53-0	
Chemical Formula: $C_{12}H_{18}Cl_2N_2$	
Molecular Weight: 261.19	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

RJR 2429 dihydrochloride is a nicotinic acetylcholine receptor (AChR) agonist that displays selectivity for α4β2.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	100	382.86
Water	100	382.86

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.83 mL	19.14 mL	38.29 mL
5 mM	0.77 mL	3.83 mL	7.66 mL
10 mM	0.38 mL	1.91 mL	3.83 mL
50 mM	0.08 mL	0.38 mL	0.77 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Bhatti BS, Strachan JP, Breining SR, Miller CH, Tahiri P, Crooks PA, Deo N, Day CS, Caldwell WS. Synthesis of 2-(pyridin-3-yl)-1-azabicyclo[3.2.2]nonane, 2-(pyridin-3-yl)-1-azabicyclo[2.2.2]octane, and 2-(pyridin-3-yl)-1-azabicyclo[3.2.1]octane, a class of potent nicotinic acetylcholine receptor-ligands. J Org Chem. 2008 May 2;73(9):3497-507. doi: 10.1021/jo800028q. Epub 2008 Mar 26. PMID: 18363376.
2. Bencherif M, Schmitt JD, Bhatti BS, Crooks P, Caldwell WS, Lovette ME, Fowler K, Reeves L, Lippiello PM. The heterocyclic substituted pyridine derivative (+/-)-2-(-3-pyridinyl)-1-azabicyclo[2.2.2]octane (RJR-2429): a selective ligand at nicotinic acetylcholine receptors. J Pharmacol Exp Ther. 1998 Mar;284(3):886-94. PMID: 9495846.

In vivo study

1. Yokotani K, Okada S, Nakamura K. Characterization of functional nicotinic acetylcholine receptors involved in catecholamine release from the isolated rat adrenal gland. Eur J Pharmacol. 2002 Jun 20;446(1-3):83-7. doi: 10.1016/s0014-2999(02)01819-8. PMID: 12098588.

7. Bioactivity

Biological target:

RJR 2429 dihydrochloride is a potent nAChR agonist that displays selectivity for α4β2 (Ki = 1 nM) and α1βγδ subtypes (EC50 values 297 and 55 nM, respectively). RJR 2429 dihydrochloride induces dopamine release from striatal neurons (EC50 = 2 nM) and inhibits ion flux in thalamic neurons (IC50 = 154 nM). It is a putative α3β4 agonist that potentiates catecholamine release.

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In vitro activity

RJR-2429 is less potent in activating nAChRs in the clonal cell line PC12, with EC50 = 1100 +/- 230 nM and Emax = 85 +/- 20% when compared with nicotine. The activation of a putative alpha 3 beta 4-containing nAChR in PC12 by RJR-2429 reveals a potency intermediate between nicotine and epibatidine (EC50 of 20,000 nM for nicotine and 30 nM for epibatidine).

Reference: J Pharmacol Exp Ther. 1998 Mar;284(3):886-94. https://pubmed.ncbi.nlm.nih.gov/9495846/

In vivo activity

This study characterized nicotinic acetylcholine receptors involved in the release of catecholamines from the rat adrenal gland. The efficacies of these agonists are as follows: (+/-) epibatidine >> RJR-2429>(-)-cytisine>(-)-nicotine >> RJR-2403. These results suggest that alpha3beta4 nicotinic receptors are involved in the release of catecholamines from the rat adrenal gland.

Reference: Eur J Pharmacol. 2002 Jun 20;446(1-3):83-7. https://pubmed.ncbi.nlm.nih.gov/12098588/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.