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DREADD agonist 21 dihydrochloride

http://www.lumiprobe.com/p/dreadd-agonist-21-dihydrochloride

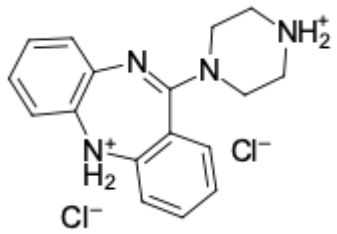
DREADD agonist 21 (Compound 21, C21) is a synthetic compound for selective activation of hM3Dq (excitatory) and hM4Di (inhibitory) DREADDs (*D*esigner *R*eceptor *E*xclusively *A*ctivated by *D*esigner *D*rugs) derived from the human muscarinic acetylcholine M3 (hM3) receptor. It does not agonize the hM3 receptor and displays weaker binding affinities for histamine H1, serotonin 5-HT2A, 5-HT2C, and α1A-adrenergic receptors (K_i = 6, 66, 170, and 280 nM, respectively) [1].

DREADD agonist 21 is routinely used as a chemogenetic tool for remotely controlling neuronal activity. It displays excellent brain permeability and capability to activate neurons expressing hM3Dq DREADDs and inhibit activity in neurons expressing hM4Di DREADDs *in vivo* [2].

This product is dihydrochloride salt, a water-soluble version of DREADD agonist 21.

[1] Chen X. et al. The first structure-activity relationship studies for designer receptors exclusively activated by designer drugs. ACS Chem. Neurosci. 2015. 6(3). 476-484.

[2] Thompson K.J. et al. DREADD agonist 21 is an effective agonist for muscarinic-based DREADDs *in vitro* and *in vivo*. ACS Pharmacol. Transl. Sci. 2018. 1(1). 61-72.



Structure of DREADD agonist 21 dihydrochloride

General properties

Appearance:	yellow-brown powder
Molecular weight:	351.28
CAS number:	2250025-92-2
Molecular formula:	$C_{17}H_{18}N_4$
IUPAC name:	11-(1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine dihydrochloride
Solubility:	in water, DMSO
Quality control:	NMR ^{1}H and HPLC-MS (95+%)
Storage conditions:	24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.
Legal statement:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.