

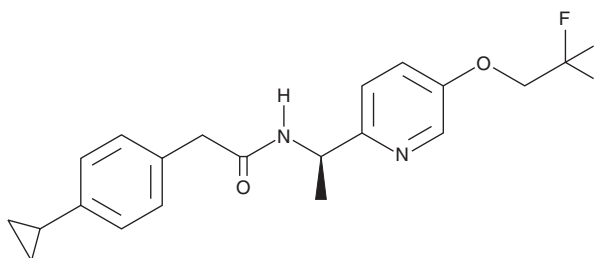
PRODUCT INFORMATION



TTA-A2

Item No. 42236

CAS Registry No.: 953778-63-7
Formal Name: 4-cyclopropyl-N-[(1R)-1-[5-(2,2,2-trifluoroethoxy)-2-pyridinyl]ethyl]-benzeneacetamide
MF: C₂₀H₂₁F₃N₂O₂
FW: 378.4
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

TTA-A2 is supplied as a solid. A stock solution may be made by dissolving the TTA-A2 in the solvent of choice, which should be purged with an inert gas. TTA-A2 is soluble (≥10 mg/ml) in DMSO and ethanol.

Description

TTA-A2 is an inhibitor of the T-type voltage-gated calcium (Ca_v) channels (IC₅₀s = 89, 92, and 98 nM for Ca_v3.1, Ca_v3.2, and Ca_v3.3, respectively, in patch-clamp assays at -80 mV).¹ It is selective for these channels over Ca_v1.2, Ca_v2.1, Ca_v2.2, and Ca_v2.3 in patch-clamp assays (IC₅₀s = >30 μM for all at -90 mV). TTA-A2 (100 and 200 nM) reduces the viability of spheroid A549 lung cancer cells.² It decreases body weight gain and fat mass and increases lean muscle mass in mice fed a high-fat diet when administered at a dose of 10 mg/kg.³ TTA-A2 (3 mg/kg) inhibits amphetamine- or MK-801-induced locomotor activity in rats.⁴ It reduces mean pulmonary arterial pressure and right ventricle hypertrophy in a rat model of hypoxic pulmonary hypertension induced by chronic housing in a hypobaric chamber.⁵ TTA-A2 (10 mg/kg) decreases the mean time spent in active wake and rapid eye movement (REM) sleep and increases the mean time spent in delta sleep in wild-type but not *Cacna1g*^{-/-} and *Cacna1i*^{-/-} double knockout mice when administered one hour before the inactive phase.¹

References

1. Kraus, R.L., Li, Y., Gregan, Y., *et al.* In vitro characterization of T-type calcium channel antagonist TTA-A2 and in vivo effects on arousal in mice. *J. Pharmacol. Exp. Ther.* **335**(2), 409-417 (2010).
2. Kumari, N., Bhargava, A., and Rath, S.N. T-type calcium channel antagonist, TTA-A2 exhibits anti-cancer properties in 3D spheroids of A549, a lung adenocarcinoma cell line. *Life Sci.* **260**, 118291 (2020).
3. Uebele, V.N., Gotter, A.L., Nuss, C.E., *et al.* Antagonism of T-type calcium channels inhibits high-fat diet-induced weight gain in mice. *J. Clin. Invest.* **119**(6), 1659-1667 (2009).
4. Uslaner, J.M., Smith, S.M., Huszar, S.L., *et al.* T-type calcium channel antagonism produces antipsychotic-like effects and reduces stimulant-induced glutamate release in the nucleus accumbens of rats. *Neuropharmacology* **62**(3), 1413-1421 (2012).
5. Chevalier, M., Gilbert, G., Roux, E., *et al.* T-type calcium channels are involved in hypoxic pulmonary hypertension. *Cardiovasc. Res.* **103**(4), 597-606 (2014).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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