

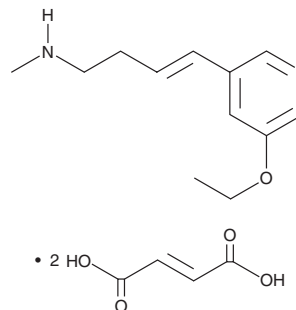
PRODUCT INFORMATION



TC 2559 (fumarate)

Item No. 25600

CAS Registry No.: 212332-35-9
Formal Name: 4-(5-ethoxy-3-pyridinyl)-N-methyl-3-buten-1-amine, difumaric acid
MF: $C_{12}H_{18}N_2O \cdot 2C_4H_4O_4$
FW: 438.4
Purity: $\geq 95\%$
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

TC 2559 (fumarate) is supplied as a solid. A stock solution may be made by dissolving the TC 2559 (fumarate) in the solvent of choice, which should be purged with an inert gas. TC 2559 (fumarate) is slightly soluble in methanol and DMSO.

Description

TC 2559 is a CNS-selective partial agonist for $\alpha 4\beta 2$ subunit-containing nicotinic acetylcholine receptors (nAChRs) with an EC_{50} value of $0.18 \mu\text{M}$ for calcium signaling in HEK293 cells expressing human recombinant nAChRs.^{1,2} It is selective for $\alpha 4\beta 2$ over $\alpha 2\beta 4$, $\alpha 4\beta 4$, $\alpha 3\beta 4$, $\alpha 3\beta 2$, and $\alpha 7$ subunit-containing nAChRs (EC_{50} s = 14, 12.5, >30 , >100 , and $>100 \mu\text{M}$, respectively). It increases dopamine cell firing in the rat ventral tegmental area (VTA) *in vitro*. TC 2559 increases spontaneous inhibitory postsynaptic currents (sIPSCs) in dorsal horn neurons, indicating an enhancement of inhibitory synaptic transmission, an effect that is blocked by the $\alpha 4\beta 2$ subunit-containing nAChR antagonist DH β E.³ It reduces formalin-induced paw-licking time in mice when administered at doses of 3 and 10 mg/kg and increases paw withdrawal latency in a rat model of chronic constriction injury when administered at a dose of 3 mg/kg. TC 2559 (3 and 6 $\mu\text{mol/kg}$) also reverses cognitive deficits induced by scopolamine in rats, increasing step-through latency in a passive avoidance task.¹

References

1. Bencherif, M., Bane, A.J., Miller, C.H., *et al.* TC-2559: A novel orally active ligand selective at neuronal acetylcholine receptors. *Eur. J. Pharmacol.* **409**(1), 45-55 (2000).
2. Chen, Y., Sharples, T.J.W., Phillips, K.G., *et al.* The nicotinic $\alpha 4\beta 2$ receptor selective agonist, TC-2559, increases dopamine neuronal activity in the ventral tegmental area of rat midbrain slices. *Neuropharmacology* **45**(3), 334-344 (2003).
3. Cheng, L.-Z., Han, L., Fan, J., *et al.* Enhanced inhibitory synaptic transmission in the spinal dorsal horn mediates antinociceptive effects of TC-2559. *Mol. Pain* **7**:56 (2011).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/06/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM