

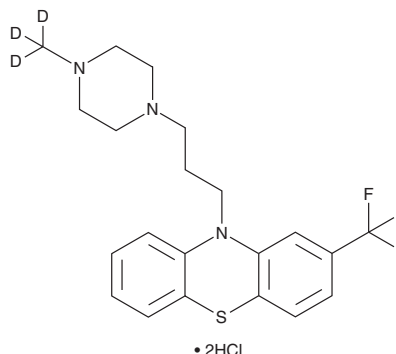
PRODUCT INFORMATION



Trifluoperazine-d₃ (hydrochloride)

Item No. 30718

CAS Registry No.: 1432064-02-2
Formal Name: 10-[3-(4-methyl-d₃-1-piperazinyl)propyl]-2-(trifluoromethyl)-10H-phenothiazine, dihydrochloride
Synonym: TFP-d₃
MF: C₂₁H₂₁D₃F₃N₃S • 2HCl
FW: 483.4
Chemical Purity: ≥95% (Trifluoperazine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
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

Trifluoperazine-d₃ (hydrochloride) is intended for use as an internal standard for the quantification of trifluoperazine (Item No. 15068) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Trifluoperazine-d₃ (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the trifluoperazine-d₃ (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Trifluoperazine-d₃ (hydrochloride) is slightly soluble in DMSO and methanol.

Description

Trifluoperazine (TFP) is a phenothiazine compound with anti-adrenergic and anti-dopaminergic actions typical of antipsychotic agents.¹ It antagonizes adrenergic receptors, with selectivity for α_1 over the α_2 subtypes (K_i s = 24, 653, 163, and 391 nM for α_{1A} , α_{2A} , α_{2B} , and α_{2C} , respectively). TFP binds with much higher affinity to the dopamine D₂-like receptor (K_d = 0.96 nM) compared to the dopamine D₄-like and the serotonin 5-HT_{2A} receptors (K_d s = 44 and 135 nM, respectively).² Furthermore, TFP antagonizes calmodulin (CaM) and alters the calcium-binding properties of calsequestrin (CSQ).^{3,4} TFP has been shown to activate type-2 ryanodine receptors independently of its CaM and CSQ activity.⁴

References

1. Kroeze, W.K., Hufeisen, S.J., Popadak, B.A., et al. H1-histamine receptor affinity predicts short-term weight gain for typical and atypical antipsychotic drugs. *Neuropsychopharmacology* **28**(3), 519-526 (2003).
2. Seeman, P., Corbett, R., and Van Tol, H.H. Atypical neuroleptics have low affinity for dopamine D2 receptors or are selective for D4 receptors. *Neuropsychopharmacology* **16**(2), 93-110 (1997).
3. Zimmer, M. and Hofmann, F. Calmodulin antagonists inhibit activity of myosin light-chain kinase independent of calmodulin. *Eur. J. Biochem.* **142**(2), 393-397 (1984).
4. Qin, J., Zima, A.V., Porta, M., et al. Trifluoperazine: A ryanodine receptor agonist. *Pflugers Arch.* **458**(4), 643-651 (2009).

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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