Tesofensine
Research Applications

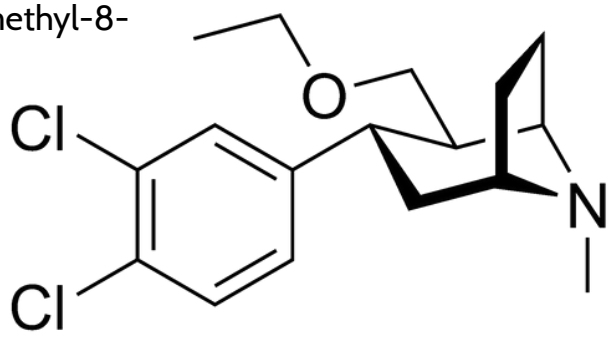
US Peptide Co

Mechanism of Action

Tesofensine is a triple monoamine reuptake inhibitor that blocks the reuptake of dopamine, norepinephrine, and serotonin. In research models, it demonstrates high affinity for all three monoamine transporters (DAT, NET, SERT), with particularly strong inhibition of dopamine and norepinephrine reuptake. This triple mechanism creates unique neurotransmitter profiles that influence reward pathways, energy homeostasis, and appetite regulation, making it valuable for studying complex monoaminergic signaling interactions.

Molecular Profile

- Chemical Formula: $C_{17}H_{23}NO$
- Molecular Weight: 257.37 Da
- IUPAC Name: (1R,2S,3S,5S)-3-(3,4-dichlorophenyl)-8-methyl-8-azabicyclo[3.2.1]octan-2-ol



Laboratory Considerations

- Store powder at room temperature in a dry environment
- Once dissolved, use within 24 hours if stored at 4°C
- Protect from light and moisture during storage

Research Applications

- Triple monoamine reuptake inhibition research
- Investigation of dopamine, norepinephrine, and serotonin transporter mechanisms
- Models examining appetite regulation and energy expenditure
- Research on neurotransmitter signaling pathways

References

1. Astrup A, et al. Effects of tesofensine on appetite and body weight in obese subjects: a 24-week randomized, placebo-controlled study. Obesity. 2008;16(6):1487-1493.
2. Axel AM, et al. Tesofensine, a novel triple monoamine reuptake inhibitor, induces appetite suppression by indirect stimulation of α1 adrenoceptor and 5-HT2C receptor pathways in the diet-induced obese rat. Neuropsychopharmacology. 2010;35(7):1464-1476.
3. Hansen DL, et al. Tesofensine, a novel triple monoamine reuptake inhibitor, in two randomized controlled trials of obese patients: a clinical review. Int J Obes. 2010;34(10):1451-1467.
4. Brøsen K, et al. Pharmacokinetics of tesofensine, a novel triple monoamine reuptake inhibitor, after single and multiple doses in healthy subjects. Eur J Clin Pharmacol. 2008;64(10):967-972.