

PRODUCT INFORMATION



TNP-ATP (triethylammonium salt)

Item No. 20902

Formal Name: ((3a'R,4'R,6'R,6a'R)-4'-(6-amino-9H-purin-9-yl)-6'-((((((hydroxyoxidophosphoryl)oxy)oxidophosphoryl)oxy)methyl)-2,6-dinitro-3a',4',6',6a'-tetrahydrospiro[cyclohexane-1,2'-furo[3,4-d][1,3]dioxole]-2,5-dien-4-ylidene)azinate, tetratriethylammonium salt

MF: C₁₆H₁₃N₈O₁₉P₃ • 4C₆H₁₆N

FW: 1,123.0

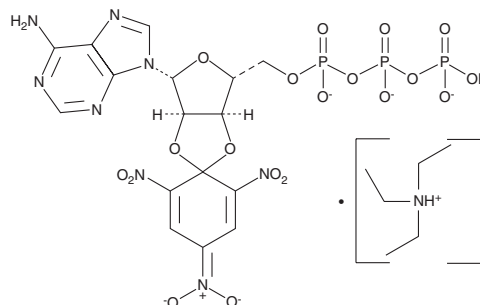
Purity: ≥95%

Ex./Em. Max: 403/547 nm

Supplied as: A 10 mM solution in water

Storage: -20°C

Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

TNP-ATP is a derivative of ATP and an antagonist at the purinergic receptor subtypes P2X₁, P2X₃, and P2X_{2/3} (IC₅₀s = 6, 0.9, and 7 nM, respectively).¹ It is selective for those receptor subtypes over P2X₂, P2X₄, and P2X₇ receptors (IC₅₀s = 2,000, 15,200, and >30,000 nM, respectively). TNP-ATP inhibits calcium flux in 1321N1 cells expressing P2X₃ and P2X_{2/3} receptors (IC₅₀s = 10 and 62 nM, respectively).² In a mouse model of visceral pain, TNP-ATP reduces acetic-acid induced writhing with an ED₅₀ value of 6.35 μmol/kg. TNP-ATP is also a fluorescent probe for the activity of ATP-binding enzymes, such as insulin-degrading enzyme (IDE).³ It displays excitation/emission maxima of 403 and 547 nm, respectively, with a four-fold increase in fluorescence intensity and an emission shift to 538 nm when bound to IDE.

References

1. Virginio, C., Robertson, G., Surprenant, A., *et al.* Trinitrophenyl-substituted nucleotides are potent antagonists selective for P2X₁, P2X₃, and heteromeric P2X_{2/3} receptors. *Mol. Pharmacol.* **53(6)**, 969-973 (1998).
2. Honore, P., Mikusa, J., Bianchi, B., *et al.* TNP-ATP, a potent P2X₃ receptor antagonist, blocks acetic acid-induced abdominal constriction in mice: Comparison with reference analgesics. *Pain* **96(1-2)**, 99-105 (2002).
3. Yao, H., and Hersh, L.B. Characterization of the binding of the fluorescent ATP analog TNP-ATP to insulin. *Arch. Biochem. Biophys.* **451(2)**, 175-181 (2006).

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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