

PRODUCT INFORMATION



TNP-ATP (sodium salt)

Item No. 38492

Formal Name: ((3a'R,4'4'R,6'R,6a'R)-4'-(6-amino-9H-purin-9-yl)-2,4,6-trinitro-3a',4',6',6a'-tetrahydrospiro[cyclohexane-1,2'-furo[3,4-d][1,3]dioxole]-2,5-dien-6'-yl) methyl triphosphate, tetrasodium salt

MF: C₁₆H₁₃N₈O₁₉P₃ • 4Na

FW: 806.2

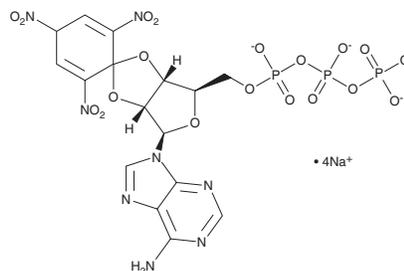
Purity: ≥95%

Supplied as: A 10 mM solution in water

Storage: -80°C

Stability: ≥2 years

Ex./Em. Max.: 403/547 nm



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 of the purinergic P2Y₁, P2X₃, and P2X_{2/3} receptors (IC₅₀s = 6, 0.9, and 7 nM, respectively, in HEK293 cells expressing the human receptors).¹ It is selective for these receptors over the purinergic P2X₂, P2X₄, and P2X₇ receptors (IC₅₀s = 2, 15.2, and >30 μM, respectively, in HEK293 cells expressing the human receptors). TNP-ATP decreases acetic acid-induced calcium flux in 1321N1 cells expressing the P2X₃ and P2X_{2/3} receptors (IC₅₀s = 100 and 62 nM, respectively).² It reduces acetic acid-induced writhing in a mouse model of visceral pain (ED₅₀ = 6.35 μmol/kg). It displays an emission maximum of 547 nm upon excitation at 403 nm, and its relative fluorescence increases four-fold when bound to insulin-degrading enzyme (IDE) and emission shifts to 538 nm.³

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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