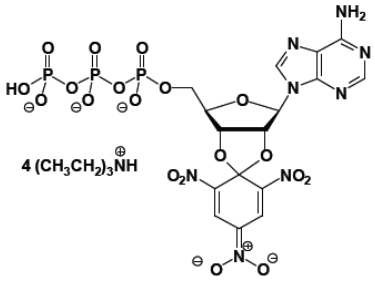
FT-17856B

TNP-ATP

Product Information

Name :	**2'/3'-O-Trinitrophenyl-adenosine-5'-triphosphate, Triethylammonium salt**
Catalog Number :	FP-17856B 150 Units 10 mg/ml FP-17856C 750 Units 1 unit = 1 µl of a 10 mM solution
Structure :	$C_{16}H_{13}N_8O_{19}P_3$
Molecular Weight :	MW= 713.90 (anion)
Solubility:	Aqueous solution
Absorption / Emission :	$\lambda_{exc}\backslash\lambda_{em}$ = 408, 470 / 552 nm
EC (M^{-1} cm^{-1}) **:**	18500



Storage: –20°C

The ribose-modified fluorescent nucleotide analog TNP-ATP is used as an environmentally sensitive probe to investigate the interaction of enzymes, such as kinases or ATPases, with their cofactor ATP. Furthermore, TNP-ATP is applied in X-ray crystallography, in fluorescence microscopy and as a fluorescence acceptor in fluorescence resonance energy transfer (FRET) studies to determine the distance between specific sites in proteins (Hiratsuka, 2003). It also acts as an antagonist of P2X receptors (Chen, 2013).

- Excitation at wavelengths (408 and 470 nm) far from where proteins or nucleotides absorb
- FRET-enabled: absorption spectrum overlaps with the emission spectra of many commonly used fluorescence donors
- Weak fluorescence in aqueous solutions – fluorescence strongly increases upon binding to proteins (intrinsic fluorescence)
- Fluorescence is sensitive to environmental conditions such as polarity and viscosity

Directions for use

Handling and Storage

Short term exposure (up to 1 week cumulative) to ambient temperature possible.
Long term storage at < -20°C (>1 year)

Guidelines for use

Protocol may found in the literature.

Related products

- TMRE, FP-41391A
- Fura-2 AM, FP-42776C

References

- **Berman** *et al.* (2003) Interaction of an aromatic dibromoisothiouronium derivative with the Ca(2+)-ATPase of skeletal muscle sarcoplasmic reticulum. *Biochemistry* 42:3556.
- **Chen** *et al.* (2013) ATP-P2X4 signaling mediates NLRP3 inflammasome activation: A novel pathway of diabetic nephropathy. *The International Journal of Biochemistry & Cell Biology* 45:932.
- **Faller** *et al.* (1990) Binding of the fluorescent substrate analogue 2',3'-O-(2,4,6-trinitrophenylcyclohexadienylidene)-adenosine 5'-triphosphate to the gastric H+,K(+)-ATPase: evidence for cofactor-induced conformational changes in the enzyme. *Biochemistry* 29:3179.

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- **Gottle** *et al.* (2007) Molecular analysis of the interaction of Bordetella pertussis adenylyl cyclase with fluorescent nucleotides. *Molecular Pharmacology* Fast Forward, June 6, 2007; DOI:10.1124/mol.107.034413 (published online).
- **Hiratsuka** *et al.* (1982) Biological activities and spectroscopic properties of chromophoric and fluorescent analogs of adenine nucleoside and nucleotides, 2',3'-O-(2,4,6-trinitrocyclohexadienylidene) adenosine derivatives. *Biochim Biophys Acta.* **719**:509.
- **Ruan** *et al.* (2004) Identification of P2X receptors in cultured mouse and rat parasympathetic otic ganglion neurones including P2X knockout studies. *Neuropharmacology* **46**:1039.
- **Milgrom** *et al.* (1998) Bi-site activation occurs with the native and nucleotide-depleted mitochondrial F1-ATPase. *Biochem J.* **330**:1037.

Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com
Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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