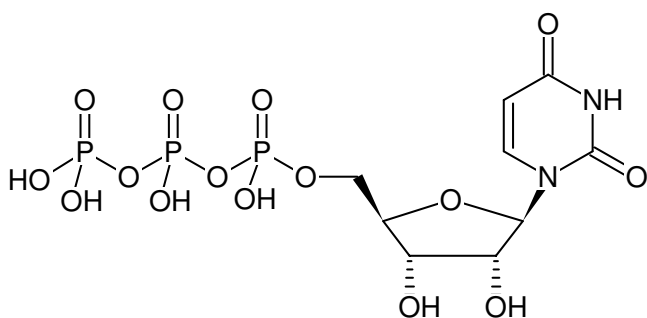




UTP - Solution

Uridine-5'-triphosphate, Sodium salt

Cat. No.	Amount
UTP_1ML	1 ml (100 mM)
UTP_10ML	10 ml (100 mM)
UTP_100ML	100 ml (100 mM)
UTP_200ML	200 ml (100 mM)



Structural formula of UTP - Solution

For in vitro use only!

Shipping: shipped on blue ice

Storage Conditions: store at -20 °C

Additional Storage Conditions: Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months

Molecular Formula: C₉H₁₅N₂O₁₅P₃ (free acid)

Molecular Weight: 484.14 g/mol (free acid)

CAS#: 19817-92-6

Purity: ≥ 99.0 % (HPLC)

Form: clear aqueous solution

Concentration: 100 mM ± 2 %

pH: 8.0 ± 0.2 (22 °C)

Spectroscopic Properties: λ_{max} 262 nm, ε 9.8 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.0)

Applications:

Activation of purinergic receptors^[1,2,3,4]

Cardioprotection against hypoxic damage^[2]

Enzyme kinetic parameters^[5]

Phosphorylation of EGF-receptor via purinergic receptors^[3]

Stimulation of neurogenesis and dopaminergic neurons^[6]

Specific Ligands:

Enterovirus 71 3D RNA polymerase^[7]

Ligand for purinergic receptors:

P2X₁^[4]
P2Y₂^[7,8,9,10]
P2Y₄^[8,10,11]
P2Y₆^[8]

Quality Control Specifications: in vitro transcription (T7 RNA polymerase): visible RNA fragments after 5 min incubation, DNases, RNases, Nicking Activity: not detectable, Proteases: not detectable

Selected References:

- [1] Raqeeb *et al.* (2011) Purinergic P2Y2 receptors mediate rapid Ca²⁺ mobilization, membrane hyperpolarization and nitric oxide production in human vascular endothelial cells. *Cell Calcium* **49**:240.
- [2] Golan *et al.* (2011) Extracellular nucleotide derivatives protect cardiomyocytes against hypoxic stress. *Biochemical Pharmacology* **81**:1219.
- [3] Boucher *et al.* (2011) Distinct activation of epidermal growth factor receptor by UTP contributes to epithelial cell wound repair. *American Journal Pathology* **178**:1092.
- [4] Sugihara *et al.* (2011) Dual signaling pathway of arterial constriction by extracellular uridine-5'-triphosphate in the rat. *J. Pharmacological Sciences (Japan)* **115**:293.
- [5] Ma *et al.* (2011) Molecular cloning and analysis of the UDP-glucose pyrophosphorylase in *Streptococcus equi* subsp. *Zooepidemicus*. *Molecular Biology Reports* **38**:2751.
- [6] Delic *et al.* (2011) Nucleotides affect neurogenesis and dopaminergic differentiation of mouse fetal midbrain-derived neural precursor cells. *Purinergic Signalling* **6**:417.
- [7] Jiang *et al.* (2011) Biochemical characterization of enterovirus 71 3D RNA polymerase. *Biochim. Biophys. Acta, Gene Regulatory Mechanisms* **1809**:211.

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[8] Pendergast *et al.* (2001) Synthesis and P2Y receptor activity of a series of uridine dinucleoside 5'-polyphosphates. *Bioorg. Med. Chem. Lett.* **11 (2)**:157.

[9] Shaver *et al.* (1997) 4-substituted uridine 5'-triphosphates as agonists of the P2Y2 purinergic receptor. *Nucleosides and Nucleotides* **16 (7)**:1099.

[10] Kim *et al.* (2002) Methanocarba modification of uracil and adenine nucleotides: High potency of northern ring conformation at P2Y1, P2Y2, P2Y4 and P2Y11 but not P2Y6 receptors. *J. Med. Chem.* **45**:208.

[11] Nguyen *et al.* (1995) Cloning, expression, and chromosomal localization of human uridine nucleotide receptors. *J. Biol. Chem.* **270 (52)**:30845.