



AP₃G (A cap) - Solution

(ApppG), GP3A, GpppA, G(5')ppp(5')A
 P1-(5'-Adenosyl) P3-(5'-guanosyl) triphosphate, Sodium salt

Cat. No.	Amount
NU-941S	10 µl (100 mM)
NU-941L	5 x 10 µl (100 mM)

For general laboratory use.

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months after date of delivery

Molecular Formula: C₂₀H₂₇N₁₀O₁₇P₃ (free acid)

Molecular Weight: 772.41 g/mol (free acid)

Exact Mass: 772.08 g/mol (free acid)

Purity: ≥ 95 % (HPLC)

Form: solution in water

Color: colorless to slightly yellow

Concentration: 100 - 110 mM

pH: 7.5 ±0.5

Spectroscopic Properties: λ 259 nm, ε 27.0 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.5)

Applications:

Synthesis of mRNA with a non-functional cap analog (ApppG) to estimate the level of cap-independent translation.^[1]

Investigation of stress related (Near UV and oxidation) product formation in bacteria^[2-4]

Selected References:

[1] Nowakowska *et al.* (2014) Cap analogs containing 6-thioguanosine-reagents for the synthesis of mRNAs selectively photo-crosslinkable with cap-binding biomolecules. *Org. Biomol. Chem.* **12** (27):4841.

[2] Kramer *et al.* (1988) Near-UV stress in *Salmonella typhimurium*: 4-thiouridine in tRNA, ppGpp, and ApppGpp as components of an adaptive response. *J. Bacteriol.* **170** (5):2344.

[3] Bochner *et al.* (1984) AppppA and related adenylylated nucleotides are synthesized as a consequence of oxidation stress. *Cell* **37** (1):225.

[4] VanBogelen *et al.* (1987) Differential induction of heat shock, SOS, and oxidation stress regulons and accumulation of nucleotides in *Escherichia coli*. *J. Bacteriol.* **169** (1):26.