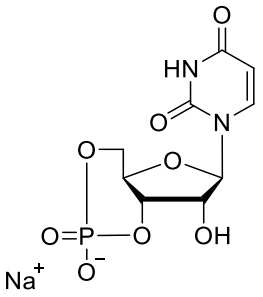
# Technical Information about Uridine-3', 5'-cyclic monophosphate

Update: May 13, 2022 AI



**Abbreviation:** **cUMP**

| Formula | CAS No. | Molecular Weight | UV | BIOLOG Cat.No. |
|---|---|---|---|---|
| $C_9H_{10}N_2O_8P{\cdot}Na$ | [56632-58-7] | 328.2 | $\lambda_{max}$ 262 nm / ε 10000 / pH 7 | U 001 |

**Name:** Uridine- 3', 5'- cyclic monophosphate

**Description:** cUMP is a cyclic nucleotide with a pyrimidine nucleobase.

**Properties:** cUMP has been identified in multiple biological systems, but its biological role as a second messenger has long remained unclear. A recent study reveals cUMP and the related cCMP (Cat. No. C 001) as nucleotide second messengers synthesized by specific bacterial pyrimidine cyclases and functioning in bacterial immunity against phages (Tal et al. 2021).

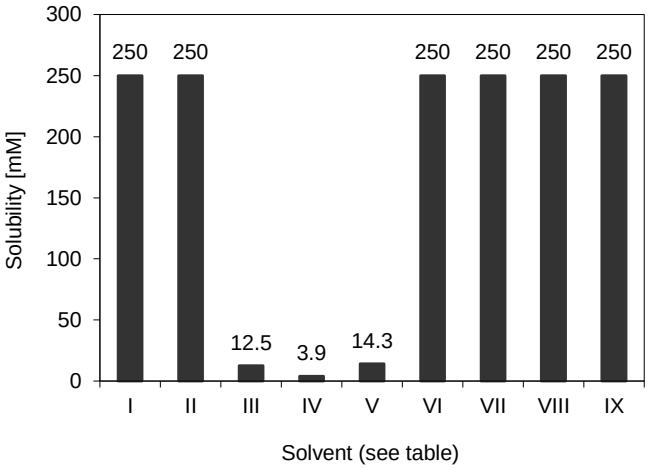
**Specification:** Lyophilized or crystallized sodium salt.The free acid or other salt forms are available upon request. Please keep in mind that equal concentrations of the compound may look different in volume due to high sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at $\lambda_{max}$.

**Purity:** Typical analysis is better than 98% (HPLC / UV / 262 nm). The product is not sterile and has not been tested for endotoxins.

**Stability and Storage:** cUMP has sufficient stability at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form.

**Solubility:** Detailed information on the solubility of cUMP in water and various buffers are listed in the solubility chart below. Concentrations have been determined at ambient temperature and can be considered as minimum concentrations usually obtainable, however, slight batch-to-batch variations cannot be ruled out. When opening the tube please make sure that no substance is lost within the cap. Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing.

| No. | Solvent | Solubility [mM] |
|---|---|---|
| I | $H_2O$ | 250 |
| II | DMSO | 250 |
| III | DMF | 12.5 |
| IV | Ethanol 96% | 3.9 |
| V | Methanol | 14.3 |
| VI | PBS, pH 7.4 | 250 |
| VII | 100 mM $Na_2HPO_4$, pH 7.0 | 250 |
| VIII | 25 mM Hepes/NaOH, pH 7.2 | 250 |
| IX | 25 mMTris/HCl, pH 7.4 | 250 |



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**Toxicity and Safety:** Since cyclic cyclic nucleotides have multiple tasks in every organism it is not unlikely that cUMP could interfere with many cell regulation processes *in vivo*. However, due to the rather small quantities to work with no health hazards have been reported. Nevertheless please keep in mind that the *in vivo* properties of these compounds are not sufficiently characterized up to now. Avoid skin contact or ingestion and allow only trained personnel to handle the product.
Our products are designed, developed and sold for research purposes only! They are intended for *in vitro* and nonhuman *in vivo* laboratory applications. Any other use requires approval of health authorities.
**Not for drug, household or related uses!**

### Selected References for cUMP:

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