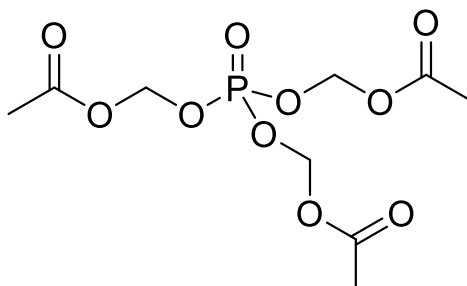


## Technical Information about Phosphate tris(acetoxymethyl)ester

Membrane-permeant, metabolically activatable phosphate

Update: July 1, 2019 HJ



**Abbreviation:** **PO<sub>4</sub>-AM<sub>3</sub>**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>9</sub> H <sub>15</sub> O <sub>10</sub> P	[148334-61-6]	314.2	not applicable	P 030

**Name:** Phosphate tris(acetoxymethyl)ester

**Description:** In PO<sub>4</sub>-AM<sub>3</sub> three acetoxymethyl (AM) ester groups are connected to inorganic phosphate.

**Properties:** PO<sub>4</sub>-AM<sub>3</sub> is a membrane-permeable prodrug of inorganic phosphate. The acetoxymethyl groups mask the charged polar phosphate and thus render the molecule highly membrane-permeant. Inside the cell esterases release the highly polar inorganic phosphate (PO<sub>4</sub><sup>3-</sup>). In addition, the AM ester groups liberate acetic acid and formaldehyde, two metabolites with potential biological functions.

PO<sub>4</sub>-AM<sub>3</sub> is recommended as control reagent in nucleotide-AM ester applications to test for side effects of acetic acid and formaldehyde.

**Specification:** Micromolar quantities are determined by weight. 0.33 μmol of PO<sub>4</sub>-AM<sub>3</sub> is stoichiometrically equivalent to 1 μmol of a cyclic nucleotide-AM ester.

**Purity:** Typical analysis is better than 95% (MS). The product is not sterile and has not been tested for endotoxins.

**Solubility/Application:** Due to its rather high lipophilicity, the solubility of PO<sub>4</sub>-AM<sub>3</sub> in water or buffers is limited. We suggest to use a small amount of anhydrous organic solvent such as anhydrous DMSO or DMF for preparation of 1 - 100 mM stock solutions, and to dilute with water or buffer down to the concentrations required. In some cases, especially at high concentrations (~ 1mM), Pluronic® F-127 (Molecular Probes) can be useful to facilitate solubilization in water or physiological media. Please be sure to check for DMSO/DMF tolerance in your system. Since PO<sub>4</sub>-AM<sub>3</sub> is bioactivated by esterases, application to cell cultures should be performed without serum supplements (even heat-inactivated serum still contains active esterases!) in the media for at least 15 minutes. Otherwise, serum esterases may strongly reduce the cell-loading efficacy. Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing.

**Stability and Storage:** PO<sub>4</sub>-AM<sub>3</sub> is sufficiently stable to be shipped at ambient temperature, however, it should be stored in the freezer (- 20°C necessary, - 80°C recommended). Please note that aqueous solutions are rather labile and should be freshly prepared immediately before use. Stock solutions in anhydrous DMSO or DMF should be relatively stable when stored frozen at - 20°C to - 80°C.

**Toxicity and Safety:** Please keep in mind that the *in vivo* properties of this compound 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!**

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