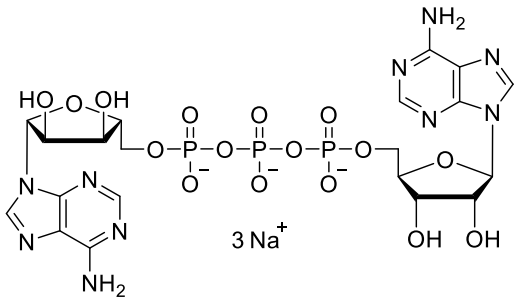
Technical Information about
P^1,P^3-Di-(adenosine-5')-triphosphate (Ap_3A / ApppA)

Update: April 15, 2019 HJ



Abbreviation: **Ap_3A / ApppA**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat.No.
$C_{20}H_{27}N_{10}O_{16}P_3$ (free acid)	[5959-90-0]	756.4 (free acid)	λ_{max} 259 nm / ε 27000 / pH 7	D 117

Name: P^1, P^3- Di- (adenosine- 5')- triphosphate / P^1- (5'- Adenosyl)- P^3- (5'- adenosyl)- triphosphate

Description: In Ap_3A two adenosine moieties are linked via their 5' positions by three phosphate groups.

Properties: Ap_3A is a naturally occurring dinucleoside polyphosphate in both eukaryotic and prokaryotic systems. It was reported to induce proliferation of vascular smooth muscle cells (Bobbert et al. 2008) and to exhibit vasoactivity (e.g. Luo et al. 1999).

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal concentrations of Ap_3A can appear very different in volume due to 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 λ_{max}.

Purity: Typical analysis is better than 95% (HPLC / UV / 259 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: Ap_4A has good solubility in water and aqueous buffers (≥ 66 mM, limits have not been determined). Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing. When opening the tube please make sure that no substance is lost within the cap.

Stability and Storage: Ap_3A 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.

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!

Selected References for Ap_3A:

Bobbert, P.; Schlüter, H.; Schultheiss, H.P.; Reusch, H.P., *Biochem. Pharmacol.*, **75**, 1966 - 1973 (2008): "Diadenosine Polyphosphates Ap3A and Ap4A, but not Ap5A or Ap6A, Induce Proliferation of Vascular Smooth Muscle Cells"

Conant, A.R.; Theologou, T.; Dihmis, W.C.; Simpson, A.W., *Vascul. Pharmacol.*, **48**, 157 - 164 (2008): "Diadenosine Polyphosphates are Selective Vasoconstrictors in Human Coronary Artery Bypass Grafts"

Pintor, J.; Peral, A.; Peláez, T.; Martín, S.; Hoyle, C.H.V., *J. Pharmacol. Exp. Ther.*, **304**, 342 - 348 (2003): "Presence of Diadenosine Polyphosphates in the Aqueous Humor: Their Effect on Intraocular Pressure"

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Lewis, C.J.; Gitterman, D.P.; Schlüter, H.; Evans, R.J., *Br. J. Pharmacol.*, **129**, 124 - 130 (2000): "Effects of Diadenosine Polyphosphates (Ap_nAs) and Adenosine Polyphospho Guanosines (Ap_nGs) on Rat Mesenteric Artery P2X Receptor Ion Channels"

Luo, J.; Jankowski, J.; Knobloch, M.; van der Giet, M.; Gardanis, K.; Russ, T.; Vahlensieck, U.; Neumann, J.; Schmitz, W.; Tepel, M.; Deng, M.C.; Zidek, W.; Schlüter, H., *FASEB J.*, **13**, 695 - 705 (1999): "Identification and Characterization of Diadenosine 5',5'''-P^1,P^2-Diphosphate and Diadenosine 5',5'''-P^1,P^3-Triphosphate in Human Myocardial Tissue"

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