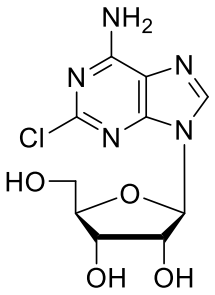
Technical Information about 2- Chloroadenosine

Update: September 18, 2018 HJ



Abbreviation: **2-Cl-Ado**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{10}H_{12}ClN_5O_4$	[146-77-0]	301.7	λ_{max} 263 nm / ε 14000 / pH 7	C 017

Name: 2-Chloroadenosine (2-Cl-Ado) or 6-amino-2-chloropurine riboside

Description: 2-Cl-Ado is an analogue of adenosine where the hydrogen in position 2 of the adenine nucleobase has been replaced by chlorine.

Properties: Non-metabolizable, selective A(1) adenosine receptor agonist and useful as starting structure for nucleosides and nucleotides modified in position 2 of the purine nucleobase.

Specification: Crystallized or lyophilized solid. Equal concentrations of 2-Cl-Ado 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. Micro molar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 98% (HPLC / UV / 263 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: Due to its increased lipophilicity the solubility of 2-Cl-Ado in water or buffer is limited. It is a good idea to dissolve first in a small volume of dimethyl sulfoxide (DMSO) and to pipet subsequently into the aqueous stock solution needed. 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: 2-Cl-Ado 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: Since adenosine has multiple tasks in every organism, it is very likely that also analogues will 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 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 2-Cl-Ado:

Ceruti, S.; Beltrami, E.; Matarese, P.; Mazzola, A.; Cattabeni, F.; Malorni, W.; Abbracchio, M.P., *Mol. Pharmacol*., **63**, 1437 - 1447 (2003): “A Key Role for Capase-2 and Caspase-3 in the Apoptosis Induced by 2-chloro-2'-deoxy-adenosine (Cladribine) and 2-chloro-adenosine in Human Astrocytoma Cells“

Ceruti, S.; Mazzola, A.; Beltrami, E.; Passera, D.; Piantoni, E.; Cattabeni, F.; Abbracchio, M.P., *Drug Dev. Res*. , **58**, 396 - 404 (2003): “Intracellular Phosphorylation of Chloro-adenosine Analogs is a Prerequisite for Activation of Caspase-3 and Induction of Apoptosis in Human Astrocytoma Cells”

Coomber, D.W.J.; O'Sullivan, M.J.; Gero, A.M., *Int. J. Parasitol*., **24**, 357 - 365 (1994): "Adenosine Analogues as Antimetabolites against Plasmodium Falciparum Malaria"

BIOLOG Life Science Institute, Bremen, Germany Phone: 49 (0) 421 591355 Fax: 49 (0) 421 5979713 e-mail: service@biolog.de

Evans, M.C. ; Swan, J.H. ; Meldrum, B.S., *Neurosci. Lett.*., 83, 287 - 292 (1987): “An Adenosine Analogue, 2-Chloroadenosine, Protects against Long Term Development of Ischaemic Cell Loss in the Rat Hippocampus”

Maling, S.J.; Eaton, M.A.W.; Goodchild, J.; Stebbing, N., *J. Appl. Biochem*., **2**, 130 - 137 (1980): “Hypotensive Effect if Ionosine and Related Compounds In Normotensive and Hypertensive Rats”

BIOLOG Life Science Institute, Bremen, Germany Phone: 49 (0) 421 591355 Fax: 49 (0) 421 5979713 e-mail: service@biolog.de