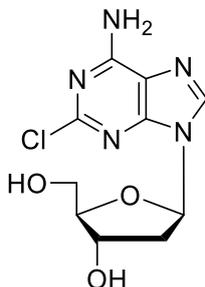


## Technical Information about 2- Chloro- 2'- deoxyadenosine

Update: September 17, 2018 HU



**Abbreviations:** **2-Cl-dAdo / CdA / Cladribine**

| Formula   | CAS No.     | Molecular Weight | UV                                       | BIOLOG Cat. No. |
|---|-------------|------------------|--|-----------------|
| C <sub>10</sub> H <sub>12</sub> ClN <sub>5</sub> O <sub>3</sub> | [4291-63-8] | 285.7            | λ <sub>max</sub> 263 nm / ε 14000 / pH 7 | C 028           |

**Name:** 2- Chloro- 2'- deoxyadenosine (Cladribine)

**Description:** 2-Chloro-2'-deoxyadenosine is an analogue of 2'-deoxyadenosine where the hydrogen in position 2 of the adenine nucleobase has been replaced by chlorine.

**Properties:** Adenosine deaminase-resistant analogue of 2'-deoxyadenosine with antileukemic properties, probably effective via its corresponding triphosphate <sup>1,2</sup> (for 2-Cl-dATP please inquire).

**Specification:** Crystallized or lyophilized solid. Equal concentrations of 2-chloro-2'-deoxyadenosine 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<sub>max</sub>.

**Purity:** Typical analysis is better than 97% (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-chloro-2'-deoxyadenosine in water or buffer is limited. 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-chloro-2'-deoxyadenosine 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 2-chloro-2'-deoxyadenosine:

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Leoni, M.L.; Chao, Q.; Cottam, H.B.; Genini, D.; Rosenbach, M.; Carrera, C.J.; Budihardjo, I.; Wang, X.; Carson, D.A., *Proc. Natl. Acad. Sci. USA*, **95**, 9567 - 9571 (1998): "Induction of an Apoptotic Program in Cell-free Extracts by 2-Chloro-2'-deoxyadenosine 5'-triphosphate and Cytochrome C"

Beutler, E., *Semin. Hematol.*, **31**, 40 - 45 (1994): "New Chemotherapeutic Agent: 2-Chlorodeoxyadenosine"

Wang, L.; Karlsson, A.; Arner, E.S.; Eriksson, S., *J. Biol. Chem.*, **268**, 22847 - 22852 (1993): "Substrate Specificity of Mitochondrial 2'-Deoxyguanosine Kinase. Efficient Phosphorylation of 2-Chlorodeoxyadenosine"