Technical Information about 8-Chloroadenosine

Cytotoxic metabolite of 8-Cl-cAMP

Update: October 5, 2015

Abbreviation: 8-Cl-Ado

<table>
<thead>
<tr>
<th>Formula</th>
<th>CAS No.</th>
<th>Molecular Weight</th>
<th>UV</th>
<th>BIOLOG Cat.No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C_{10}H_{12}ClN_{5}O_{4}</td>
<td>[34408-14-5]</td>
<td>301.7</td>
<td>( \lambda_{max} \text{ 262 nm} / \varepsilon \text{ 17000 / pH 7} )</td>
<td>C 006</td>
</tr>
</tbody>
</table>

Name: 8-Chloroadenosine (8-Cl-Ado)

Description: 8-Chloroadenosine is an analogue of adenosine where the hydrogen in position 8 of the heterocyclic nucleobase is replaced by a chlorine atom.

Properties: 8-Chloroadenosine is one of the main metabolites of the tumor growth inhibitor 8-chloro cyclic AMP (8-Cl-cAMP, BIOLOG Cat. No. C 007). In contrast to its corresponding bromo analog it shows relatively high cytotoxicity which could be due to different substrate properties towards adenosine deaminase.

 Specification: Crystallized or lyophilized solid. Please keep in mind that equal amounts of the compound may look different in dried form.

Solubility: At room temperature the solubility of 8-Chloroadenosine in water is limited to approx. 16 mM. The compound is soluble to 22 mM in water with gentle warming to 35°C, and at 50°C a 100 mM solution can be achieved. 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.

Stability and Storage: 8-Chloroadenosine 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 lipophilic analogues 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 this compound are not sufficiently characterized up to now. Avoid skin contact or ingestion and allow only trained personnel to handle the product.

Selected References for 8-Chloroadenosine:


Lange-Carter, C.A.; Vulliezque, J.J.; Malkinson, A.M., Cancer Res., 53, 393 - 400 (1993): "8-Chloroadenosine Mediates 8-Chloro-Cyclic AMP-Induced Down-Regulation of Cyclic AMP-dependent Protein Kinase in Normal and Neoplastic Mouse Lung epithelial Cells by a Cyclic AMP-independent Mechanism"

Taylor, C.W.; Yeoman, L.C., Anti-Cancer Drugs 3, 485 - 491 (1992): "Inhibition of Colon Tumor Cell Growth by 8-Chloro cAMP is Independent Upon its Conversion to 8-Chloroadenosine"

Langeveld, C.H. et al., Cancer Res., 52, 3994 - 3999 (1992): "Growth Inhibition of Human Glioma Cells Induced by 8-Chloroadenosine, an Active Metabolite of 8-Chloro Cyclic Adenosine 3′:5′ Monophosphate"

Cho-Chung, Y.-S. (Letter to the Editor)/Kessin, RH. (Reply), Cancer Res., 51, 6206 - 6208 (1991): "Correspondence re: Van Lookeren Campagne et al., Ref. 4"

