



3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

5-(N,N-Dimethyl)amiloride hydrochloride

Product Number **A 4562**

Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_8H_{12}ClN_7O \cdot HCl$

Molecular Weight: 294.1

CAS Number: 1 214-79-5

Synonym: DMA

DMA is an inhibitor of the Na^+/H^+ pump in muscle membranes. It has been used to reduce cardiac dysfunction following ischemic injury to perfused rat ventricle.¹ Studies with ouabain indicated that this effect was due to blockade of sarcolemmal Na^+ uptake into the cardiac muscle.

Both amiloride and DMA have been shown to inhibit the epidermal growth factor-induced (EGF) pH changes in chicken granulosa cells.² While EGF alone increased the pH by 0.18 pH units, the EGF-induced cytosolic alkalization was significantly reduced by DMA and amiloride (by 54% and 51%, respectively). The studies suggest that EGF may increase intracellular pH by activating the Na^+/H^+ antiporter system.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

DMA is soluble at 100 μM in 20 mM sodium bicarbonate buffer, pH 7.4 containing 120 mM NaCl, 6 mM KCl, 1 mM $MgCl_2$, 1 mM $CaCl_2$, and 10 mM glucose.¹

References

1. Meng, H., and Pierce, G. N., Involvement of sodium in the protective effect of 5-(N,N-dimethyl)-amiloride on ischemia-reperfusion injury in isolated rat ventricular wall. *J. Pharmacol. Exp. Ther.*, **256**, 1094-1100 (1991).
2. Li, M., et al., Epidermal growth factor elevates intracellular pH in chicken granulosa cells. *Endocrinology*, **129**, 656-662 (1991).

MWM/AJH 11/02

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.