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ProductInformation

Amiloride hydrochloride hydrate

Product Number **A 7410**
Store at Room Temperature

Product Description

Molecular Formula: $C_6H_8ClN_7O \bullet HCl$ (anhydrous)
Molecular Weight: 266.1
CAS Number: 2016-88-8
pK_a: 8.7[1]
Melting Point: 285-288 °C (decomposition)[1]
Extinction coefficient: $E^{1\%}$ (water) = 642 (212 nm), 555 (285 nm), 617 (362 nm)[1]

Amiloride has been shown to inhibit the epidermal growth factor (EGF)-induced pH changes in chicken granulosa and other cells and thus suggesting that EGF may increase intracellular pH by activating the Na^+/H^+ anti-porter system.[2] Amiloride (0.1 mM) prevented endothelin-induced increase in intracellular pH.[3]

Amiloride was found to interact with adenosine A1 receptors in calf brain at a site distinct from the ligand binding site.[4] It is a specific reversible inhibitor of sodium transport[5] and blocks the Na^+/H^+ exchange pathway.[6]

It is an inhibitor of urokinase-type plasminogen activator:[7]

Precautions and Disclaimer

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

Preparation Instructions

The product is soluble in hot water (50 mg/ml), yielding a clear, yellow-green solution. Amiloride is freely soluble in DMSO; slightly soluble in isopropanol and ethanol; practically insoluble in acetone, chloroform, diethyl ether, and ethyl acetate.[1]

Storage/Stability

A stock solution of amiloride in DMSO can be stored at -20 °C.[4]

References

1. The Merck Index, 11th ed., Entry# 417.
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3. Kramer, B. K., et al, Endothelin and increased contractility in adult rat ventricular myocytes. Role of intracellular alkalosis induced by activation of the protein kinase C-dependent Na(+)-H+ exchanger. Circ. Res., **68(1)**, 269-279 (1991).
4. Garritsen, A., et al., Interaction of amiloride and its analogues with adenosine A1 receptors in calf brain. Biochem. Pharmacol., **40(4)**, 827-834 (1990).
5. Kellen, J. A., et al., Antimetastatic effect of amiloride in an animal tumour model. Anticancer Res., **8(6)**, 1373-1376 (1988).
6. Benos, D. J., Amiloride: a molecular probe of sodium transport in tissues and cells. Am. J. Physiol., **242(3)**, C131-C145 (1982).
7. Avery, R. L., et al., Systemic amiloride inhibits experimentally induced neovascularization. Arch. Ophthalmol., **108(10)**, 1474-1476 (1990).

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