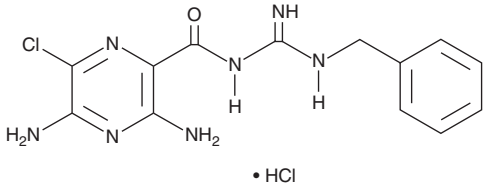
PRODUCT INFORMATION

Benzamil (hydrochloride)

Item No. 14313

CAS Registry No.:	161804-20-2
Formal Name:	3,5-diamino-6-chloro-N-[imino[(phenylmethyl)amino]methyl]-2-pyrazinecarboxamide, monohydrochloride
MF:	$C_{13}H_{14}ClN_7O \bullet HCl$
FW:	356.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 210, 288, 363 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Benzamil (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the benzamil (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Benzamil (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of benzamil (hydrochloride) in these solvents is approximately 20 and 0.5 mg/ml, respectively.

Description

Benzamil is a derivative of amiloride (Item No. 14409).[1] Benzamil is an epithelial sodium channel (ENaC) blocker that inhibits sodium transport from (IC_{50} = 4 nM) and binds to (K_d = 5 nM) bovine kidney cortex membrane vesicles. It is also an inhibitor of the Na^+/Ca^{2+} exchanger (NCX) that inhibits the cytosolic calcium response to extracellular sodium depletion in mouse podocytes (IC_{50} = ~100 nM).[2] Benzamil inhibits transient receptor potential polycystin-L (TRPP3; IC_{50} = 1.1 µM), a member of the TRP superfamily of cation channels.[3]

References

1. Kleyman, T.R., Yulo, T., Ashbaugh, C., *et al.* Photoaffinity labeling of the epithelial sodium channel. *J. Biol. Chem.* **261(6)**, 2839-2843 (1986).
2. Fischer, K.-G., Jonas, N., Poschenrieder, F., *et al.* Characterization of a Na^+-Ca^{2+} exchanger in podocytes. *Nephrol. Dial. Transplant.* **17(10)**, 1742-1750 (2002).
3. Dai, X.Q., Ramji, A., Liu, Y., *et al.* Inhibition of TRPP3 channel by amiloride and analogs. *Mol. Pharmacol.* **72(6)**, 1576-1585 (2007).

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