Benzamidine hydrochloride hydrate

Catalog Numbers B6506, 12073

Synonyms: Amidinobenzene hydrochloride hydrate; Benzenecarboximidamide hydrochloride hydrate; Benzamidinium chloride hydrate

CAS RN: 206752-36-5
1670-14-0 (anhydrous)

Molecular formula: C$_7$H$_8$N$_2$.HCl.xH$_2$O
Molecular weight: 156.61 (anhydrous)

Physical Properties
$E_{mm}^{113}$ (229 nm) = 11.3 (for free base)$^1$
Melting Point: 169 °C (anhydrous)$^2$ 72 °C (dihydrate)$^2$
Assay: ≥98%

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability
Store under Argon at 2-8 °C. Stored properly it will have an expected shelf-life of up to 2 years.

Solubility/Solution Stability:
Benzamidine hydrochloride is soluble in water and alcohol.$^4$ Sigma routinely tests the solubility in water at a concentration of 50 mg/mL. Heating is often necessary to produce the solution in water at this concentration.

Sensitive to oxidation. It is recommended that solutions be prepared fresh in degassed water prior to use. However, frozen aliquots stored under argon or nitrogen, to exclude air, may be stable for a short time.

Applications
Benzamidine hydrochloride is a reversible inhibitor of trypsin, trypsin-like enzymes, and serine proteases.$^3,5,6$ For use as a general protease inhibitor, a concentration of about 1 mM can be used. To inhibit proteases from yeast, a range of 0.5-4.0 mM is used and is for the most part interchangeable with pepstatin A.$^7$

In addition to being a strong competitive inhibitor of trypsin, benzamidine hydrochloride has been also shown to be a strong competitive inhibitor of thrombin and plasmin. It was also found to be as effective as aprotinin in the prevention of glucagon degradation in human plasma.$^8$

References

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