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ProductInformation

BICINE
SigmaUltra

Product Number **B 8660**
Store at Room Temperature

Product Description

Molecular Formula: $C_6H_{13}NO_4$
Molecular Weight: 163.2
CAS Number: 150-25-4
pK_a: 8.3 (0.1 M, 25 °C)[1]
Melting Point: 190 - 192 °C[2]
Useful pH range: 7.6 - 9.0
Synonyms: N,N-bis(2-hydroxyethyl)glycine, di(hydroxyethyl)glycine, N,N-bis(hydroxyethyl)aminoacetic acid[2]

Trace elemental analyses have been performed on the SigmaUltra bicine. The Certificate of Analysis provides lot-specific results. SigmaUltra bicine is for applications which require tight control of elemental content.

Bicine is a zwitterionic buffer used in biochemistry and molecular biology research. Originally prepared in the 1920's, it later became one of the Good buffers that were studied in the 1960's to provide buffers in the pH range of 6.15 - 8.35 for wide applicability to biochemical studies.[1]

The use of bicine in a thin layer ion exchange chromatography method for protein resolution has been published.[3] Bicine has been utilized in peptide and protein crystallization.[4,5,6] A kinetic study of a quaternary transition-state analogue complex of creatine kinase used bicine in the reaction buffer.[7] A multiphasic buffer system for SDS-PAGE of proteins and peptides that incorporates bicine has been described.[8]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (330 mg/ml), yielding a clear, colorless solution.

References

1. Good, N. E., et al, Hydrogen ion buffers for biological research. Biochemistry, **5(2)**, 467-477 (1966).
2. The Merck Index, 12th ed., Entry# 1248.
3. Luo, Q., et al., Thin-layer ion-exchange chromatography of proteins. J. Chromatogr. A, **816(1)**, 97-105 (1998).
4. Kanyo, Z. F., et al., Crystallization and oligomeric structure of rat liver arginase. J. Mol. Biol., **224(4)**, 1175-1177 (1992).
5. Watanabe, L., et al., Crystallization and preliminary diffraction data of BaP1, a haemorrhagic metalloproteinase from *Bothrops asper* snake venom. Acta Crystallogr. D Biol. Crystallogr., **58(Pt 6 Pt 2)**, 1034-1035 (2002).
6. Abad, M. C, et al., The X-ray crystallographic structure of the angiogenesis inhibitor angiostatin. J. Mol. Biol., **318(4)**, 1009-1017 (2002).
7. Borders, C. L., Jr., et al., Determination of the affinity of each component of a composite quaternary transition-state analogue complex of creatine kinase. Biochemistry, **41(22)**, 6995-7000 (2002).
8. Wiltfang, J., et al., A new multiphasic buffer system for sodium dodecyl sulfate-polyacrylamide gel electrophoresis of proteins and peptides with molecular masses 100,000-1000, and their detection with picomolar sensitivity. Electrophoresis, **12(5)**, 352-366 (1991).

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