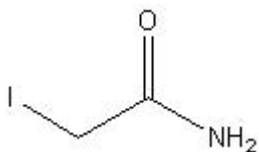


TECHNICAL INFORMATION

Catalog Number: 100351

Iodoacetamide

Structure:



Molecular Formula: C₂H₄INO

Molecular Weight: 185

CAS # 144-48-9

Synonyms: IAN; alpha-Iodoacetamide; Monoiodoacetamide; 2-Iodoacetamide; Surauto

Physical Description: White to light yellow crystalline powder. May discolor to yellowish on storage.

Solubility: Soluble in water (recommended stock solution is 10-100 mM). All solutions should be prepared fresh for each use since solutions are very light sensitive.

Description: A thiol reagent; alkylating reagent for cysteine and histidine residues in proteins. In the alkylation reaction, it reacts with histidine (such as in RNase³), methionine and sulfhydryl groups of many proteins. Iodoacetamide can react with low molecular weight thiol compounds such as mercaptoethanol and glutathione.² The reaction with glutathione is utilized in a titration method for the determination of sulfhydryl groups in different compounds.¹ The alkylation reaction forms stable protein derivatives which will remain intact during further study of the protein.^{4,7,8,9}

Useful in peptide sequencing and as an irreversible enzyme inhibitor. Some enzymes iodoacetamide will inhibit include (but is not limited to):

- Alcohol dehydrogenase
- Alkaline phosphatase (calf intestinal)
- beta-Amylase
- Cathepsin B
- Galactose oxidase
- Heme oxygenase
- L-Lysine decarboxylase

It will irreversibly inhibit the dephosphorylation of both epidermal growth factor receptor and platelet-derived growth factor receptor by alkylation at the active center of one or several protein tyrosine phosphatases in cell lines.⁶ Iodoacetamide will also irreversibly inhibit many cysteine proteases. The effective concentration for use as a protease inhibitor is 10-100 uM.

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