

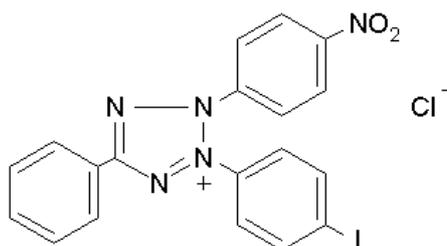
58030 Iodonitrotetrazolium chloride

(p-Iodonitrotetrazolium Violet, 2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-phenyl-2H-tetrazolium chloride, INT)

CAS number: 146-68-9

Product Description:

Appearance: Light yellow powder
Molecular formula: C₁₉H₁₃ClIN₅O₂
Molecular weight: 505.7 g/mol
Mp: 202-204°C (dec.)^{1,3}
E_{249nm}: 680 (1% in water)



Solubility:

INT dissolves in water to give a clear light yellow to light green solution at 4 mg/mL, although gentle heat and sonication are necessary for this concentration. INT dissolves up to 8 mg/mL in ethanol, and up to 30 mg/mL in ethylene glycol monomethyl ether. Aqueous solutions are ³ reported to be stable for several weeks when stored at 2-8°C in the dark.⁴ A 50 mg/mL solution in hot methanol/water (1:1) is clear and very deep yellow.²

Applications:

This tetrazolium dye precursor forms a purple formazan dye on reduction and has been used in a variety of applications. It is considered to have higher reactivity than some tetrazolium compounds, at least with respect to succinate dehydrogenase, with optimal results obtained using a concentration of 0.8 mM INT. The formazan (available as I7375) is ⁵ comparatively insoluble in water, so can be detected visually or extracted into ethanol or organic solvent and determined spectrophotometrically. Altman reviewed properties of a number of different tetrazolium salts.¹

For use in measurement of respiratory electron transport activity: *Marine Biology*, 30, 27-36 (1975). Used in a colorimetric assay to measure *serum* lactate dehydrogenase: *Clinical Chemistry*, 19, 766 (1973).

INT is used as an electron acceptor for the colorimetric assays of: lactate dehydrogenase^{1,11}, xanthine dehydrogenase¹⁰, lactyl-CoA dehydrogenase⁹, succinate dehydrogenase⁸, BBM II ketolisomerase⁷, histidinol dehydrogenase⁷ and diverse other hydrolases.

Active bacterial biomass was estimated using INT stain for counting¹² and cells have been stained with INT.



References:

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7. R.G. Martin, *BBM II ketolisomerase and histidinol dehydrogenase Meth. Enzymol.* 17B, 3 (1971)
8. D.J. Morr , succinate dehydrogenase *Meth. Enzymol.* 22, 130 (1971)
9. R.L. Baldwin, W.A. Wood, *lactyl-CoA dehydrogenase Meth. Enzymol.* 9, 683 (1966)
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Precautions and Disclaimer:

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