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Product Information

Luminol sodium salt

Product Number **A4685**
Store at Room Temperature

Product Description

Molecular Formula: $C_8H_6N_3NaO_2$

Molecular Weight: 199.1

CAS Number: 20666-12-0

Synonym: 5-Amino-2,3-dihydro-1,4-phthalazinedione sodium salt

Methods have been reported for the determination of glucose, hydrogen peroxide, or glucose oxidase based on the light producing oxidation of luminol catalyzed by horse radish peroxidase.¹ Since the hydrogen peroxide, which is produced is equivalent to the amount of glucose oxidized, and the light emitted is a function of the amount of hydrogen peroxide, one can estimate very small amounts of glucose compared to spectrophotometric techniques. In the latter peroxidase and a suitable chromogenic oxygen acceptor such as o-dianisidine or o-toluidine is used. The oxidation of glucose in the presence of glucose oxidase at pH 7 produces hydrogen peroxide. The hydrogen peroxide produced is then reacted with $Fe(CN)_6^{3-}$ and luminol in a basic solution to produce chemiluminescence proportional to the initial glucose concentration. After five minutes of enzyme activity, the integrated chemiluminescence signal was linear with glucose concentration in 10 μ l samples over the range of 0.02-2.0 mg/ml.²

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (50 mg/ml), yielding a clear solution.

Storage/Stability

Solutions are sensitive to light and to the presence of metal cations, emitting light in basic solutions containing Fe^{3+} , Cu^{2+} , etc. Solutions are typically stable only 8-12 hrs. The sodium salt and free base forms of luminol undergo photochemical changes resulting in the formation of a series of compounds, which are significantly inhibitory to enhanced chemiluminescence. Luminol is thermally unstable. Thus, luminol and its solutions should be protected from light and high temperature should be avoided during purification.³

References

1. Puget, K., and Michelson, A.M., Microestimation of glucose and glucose oxidase. *Biochimie*, **58(6)**, 757-758 (1976).
2. Auses, J. et al., Chemiluminescent enzyme method for glucose. *Anal. Chem.*, **47**, 244 (1975).
3. Scott, R.A.W., and Kricka, L.J., Biolumin. Chemilumin., Proc. Int. Biolumin. Chemilumin. Symp., 4th (1987), Meeting date 1986, 237-240. Schoelmerich J. editor, Publisher, Wiley, Chichester, UK.

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