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Product Information

Methyl Green

Product Number **M 8884**
Store at Room Temperature

Product Description

Molecular Formula: $C_{27}H_{35}Cl_2N_3 \cdot ZnCl_2$ or
 $C_{27}H_{35}N_3BrCl \cdot ZnCl_2$
Molecular Weight: 608.8 or 653.2
CAS Number: 7114-03-6
 λ_{max} : 630 - 635 nm^{1,2}
Extinction Coefficient: $E^{1\%} = 800 - 1100$ (water)²
Minimum dye content: 90%

This product may be a mixture of monobromo, monochloro and dichloro $ZnCl_2$ salts. The halogen content is listed on the Certificate of Analysis. The reported dye content is based on the molecular weight of the monobromo, monochloro $ZnCl_2$ salt (653.2 daltons).

A buffered 1% (w/v) methyl green solution is a suitable counterstain for chloroacetate esterase, nonspecific esterase, alkaline phosphatase, peroxidase, naphthol AS acetate esterase, and acid phosphatase.³

Methyl green may be used as a pH indicator. It is yellow at pH 1, green at pH 2, blue at pH equal to or greater than 3.⁴

For protocols requiring methyl green that is free of crystal violet (such as staining DNA), either Product No. M 8884 may be extracted with chloroform³ or Product No. M 6776 (Methyl Green, Crystal Violet-free) may be purchased.

A typical working concentration for using methyl green as a counter stain is 0.1-0.5%. A procedure for staining animal tissue for nucleoli and cytoplasmic granules of liver cells, differentiating cytoplasmic and nucleolar basophilia from chromatin has been published.⁵ The use of bismarck brown with methyl

green for staining mucin, cartilage and goblet cells in embryonic, trachea or intestinal tissue has been published.⁵ A procedure for the use of acidulated methyl green (in 1% acetic acid) for staining chromatin in temporary preparations of protozoans has been published.⁵ The use of methyl green in glycerin-jelly to show exine of pollen-grain has been published.⁵ A discussion of Albert's Stain for diphtheria organisms (only fair staining for cytoplasmic barring) has been published.⁵

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (1 mg/ml), yielding an opaque, dark blue solution.

References

1. Conn's Biological Stains, 9th ed., Lillie, R. D., Williams and Wilkins (Baltimore, MD: 1977), p. 587
2. Sigma Quality Control.
3. Atlas of Cytochemistry and Immunocytochemistry of Hematologic Neoplasms, Sun, T., C.-Y. Li, et al., American Society of Clinical Pathologists Press (Chicago, IL: 1985).
4. Sigma-Aldrich Handbook of Stains, Dyes and Indicators, Green, F. ed., (Aldrich Chemical Co, Milwaukee, WI: 1990), inside back cover.
5. Staining Procedures, 4th ed., Clark, G., ed., Williams and Wilkins (Baltimore, MD: 1981), pp. 199-200, 211, 290, 361, 405-406.

IRB/JRC 5/06

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