

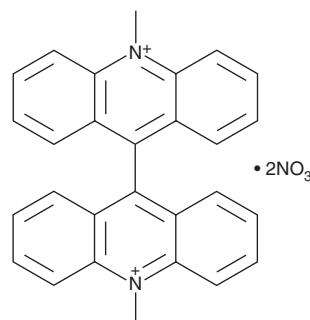
PRODUCT INFORMATION



Lucigenin

Item No. 14872

CAS Registry No.: 2315-97-1
Formal Name: 10,10'-dimethyl-9,9'-biacridinium, dinitrate
Synonyms: L-6,868, NSC 151912
MF: C₂₈H₂₂N₂ • 2NO₃
FW: 510.5
Purity: ≥95%
UV/Vis.: λ_{max}: 222, 261, 369, 429 nm
Ex./Em. Max: 455/505 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Lucigenin is supplied as a crystalline solid. A stock solution may be made by dissolving the lucigenin in the solvent of choice, which should be purged with an inert gas. Lucigenin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of lucigenin in these solvents is approximately 5 and 0.33 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of lucigenin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of lucigenin in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Lucigenin is a chemiluminescent probe used to detect superoxide production and the presence of chloride.^{1,2} It can be used to detect superoxide production by enzymatic and cellular sources.^{1,3,4} It is a sensitive method that has been applied to the monitoring of superoxide production from xanthine oxidase, microsomal NADPH cytochrome reductase, and NADPH oxidases of phagocytes, endothelial cells, fibroblasts, and smooth muscle cells of blood vessel walls.^{3,5} However, it produces similar chemiluminescence signals in isolated aortic and cardiac tissues from wild-type and Nox1-Nox2-Nox4 triple knockout mice, suggesting that it is not selective for NADPH-based ROS production.⁶ It also reacts with hydrogen peroxide without generating free radical intermediates and has been used to detect lipid hydroperoxide in oils.⁷ Lucigenin is also used as a fluorescent chloride-sensitive indicator, with its fluorescence being quenched by chloride (ex/em = 455/505 nm, respectively).^{2,8,9} Lucigenin fluorescence is insensitive to phosphate, sulfate, and nitrate.²

References

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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM