

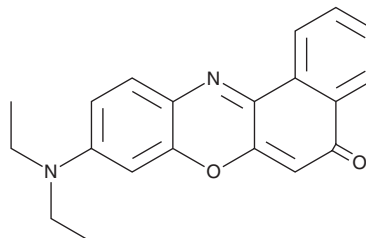
PRODUCT INFORMATION



Nile Red

Item No. 30787

CAS Registry No.: 7385-67-3
Formal Name: 9-(diethylamino)-5H-benzo[a]phenoxazin-5-one
MF: C₂₀H₁₈N₂O₂
FW: 318.4
Purity: ≥95%
Ex./Em. Max: 529/576 nm, respectively, for neutral lipids
UV/Vis.: λ_{max}: 265, 553 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

Nile red is supplied as a crystalline solid. A stock solution may be made by dissolving the Nile red in the solvent of choice, which should be purged with an inert gas. Nile red is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of Nile red in these solvents is approximately 1 mg/ml. Nile red is also slightly soluble in ethanol.

Nile red is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, Nile red should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Nile red has a solubility of approximately 0.09 mg/ml in a 1:10 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nile red is a fluorescent probe commonly used for the detection of intracellular lipid droplets.¹ It displays excitation/emission maxima of 529/576 nm, respectively, for neutral lipids.² It is selective for neutral lipids at emission wavelengths of 580 nm or lower, but, at higher emission wavelengths, phospholipid membranes are also visualized. Nile red has been used in live, fixed, or unfixed cells with detection by fluorescence microscopy, spectroscopy, or flow cytometry.^{1,3} It has been used as a marker of lipid droplets in cellular models of hepatocyte steatosis.^{4,5}

References

1. Greenspan, P., Mayer, E.P., and Fowler, S.D. Nile red: A selective fluorescent stain for intracellular lipid droplets. *J. Cell Biol.* **100**(3), 965-973 (1985).
2. Greenspan, P. and Fowler, S.D. Spectrofluorometric studies of the lipid probe, Nile red. *J. Lipid. Res.* **26**(7), 781-789 (1985).
3. Listenberger, L.L. and Brown, D.G. Fluorescent detection of lipid droplets and associated proteins. *Curr. Protoc. Cell. Biol.* **35**(1), 24.2.1-24.2.11 (2007).
4. Zheng, L., Lv, G.-C., Sheng, J., et al. Effect of miRNA-10b in regulating cellular steatosis level by targeting PPAR-α expression, a novel mechanism for the pathogenesis of NAFLD. *J. Gastroenterol. Hepatol.* **25**(1), 156-163 (2010).
5. Rafiei, H., Omidian, K., and Bandy, B. Dietary polyphenols protect against oleic acid-induced steatosis in an in vitro model of NAFLD by modulating lipid metabolism and improving mitochondrial function. *Nutrients* **11**(3), 541 (2019).

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