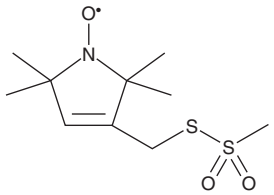
PRODUCT INFORMATION

MTSSL

Item No. 16463

CAS Registry No.: 81213-52-7
Formal Name: 2,5-dihydro-2,2,5,5-tetramethyl-3-[[(methylsulfonyl)thio]methyl]-1H-pyrrol-1-yloxy
MF: $C_{10}H_{18}NO_3S_2$
FW: 264.4
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Light sensitive



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

Laboratory Procedures

MTSSL is supplied as a crystalline solid. A stock solution may be made by dissolving the MTSSL in the solvent of choice, which should be purged with an inert gas. MTSSL is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of MTSSL in ethanol is approximately 15 mg/ml and approximately 30 mg/ml in DMSO and DMF.

MTSSL is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MTSSL should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. MTSSL has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

MTSSL is a paramagnetic nitroxide spin label featuring a methanethiosulfonate group for site-directed spin labeling, particularly through disulfide linkages with cysteine residues on proteins.[1,2] When combined with electron paramagnetic resonance spectroscopy, site-directed spin labeling is used to study the structural dynamics of proteins, including membrane proteins.[1,3]

References

1. Perozo, E., Cortes, D.M., and Cuello, L.G. Structural rearrangements underlying K^+-channel activation gating. *Science* **285(5424)**, 73-78 (1999).
2. Gaponenko, V., Howarth, J.W., Columbus, L., *et al*. Protein global fold determination using site-directed spin and isotope labeling. *Protein Sci.* **9(2)**, 302-309 (2000).
3. Tombolato, F., Ferrarini, A., and Freed, J.H. Dynamics of the nitroxide side chain in spin-labeled proteins. *J. Phys. Chem. B* **110(51)**, 26248-26259 (2006).

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