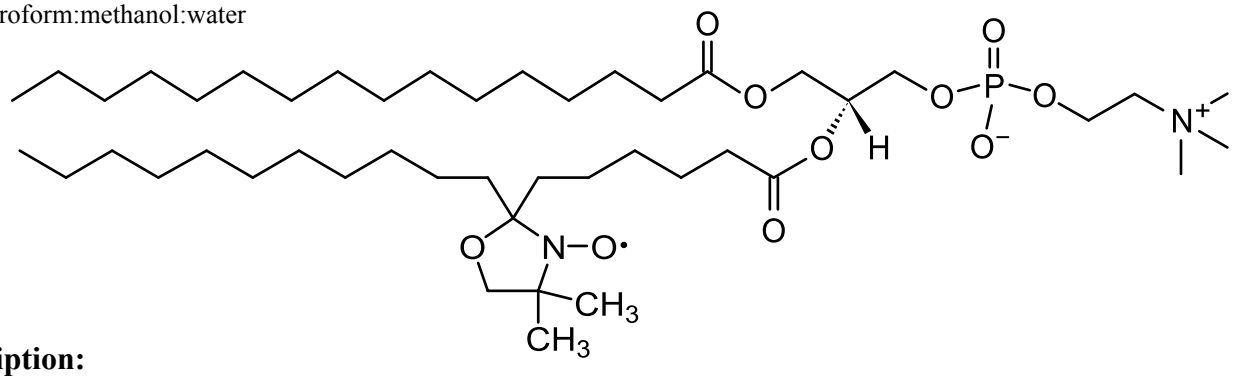
Technical Data Sheet

1-Palmitoyl-2-Stearoyl-(7-DOXYL)-*sn*-Glycero-3-Phosphocholine

Catalog Number	810602	**Physical state**	Powder; chloroform solution
Purity	> 99%	**Transition temp.**	No data
CAS	213331-17-0	**CMC**	No data
Synonyms	16:0-07 DOXYL PC	**PKA**	No data
Molec. Formula	$C_{46}H_{90}N_2O_{10}P$	**TLC mobile phase**	C:M:W*, 65:25:4, v/v
MW	862.188	**Exact Mass**	861.633
Percent composition	C 64.08% H 10.52% N 3.25% O 18.56% P 3.59%		
Stability	Store in <-20°C freezer for up to six months**. Unstable in solvents containing dilute mineral acid.**		
Solubility	Soluble in chloroform, methanol and ethanol. Insoluble in water and acetone.		
Web link	**810602**		

* chloroform:methanol:water



Description:

Avanti's nitroxide spin product listing is a group of compounds designed to act as membrane probes. A variety of positions down the hydrophobic chain are labeled with the nitroxide functional groups to allow probing the membrane at various depths. These compounds have been synthesized from 1-palmitoyl-2-hydroxy-*sn*-glycerol-3-phosphocholine with the product being purified by column chromatography. Various *n*-doxyl phosphocholines have been recently used as biophysical tools to elucidate membrane trafficking with phosphatidylinositol transfer proteins (Smirnova et al, 2007) and as fluorescent quenchers in lipid bilayer structural studies (Kondo et al, 2008).

Product use:

To prevent aggregation, prepare water-based solutions of 2 mM stock solutions of *n*-DOXYL PCs and store in plastic. Dilute stock solutions to 0.03- 0.1 mM solutions for EPR studies (Wu and Gaffney, 2006). For liposome preparations in fluorescent quenching measurements, dissolve the doxyl lipid in 150 µl absolute ethanol for a concentration of 40.3 mM (Kondo et al, 2008, supplemental info found at http://pubs.acs.org/doi/suppl/10.1021/ja804929m/suppl_file/ja804929m_si_001.pdf).

References:

• Kondo M, Mehiri M, Regen SL (2008) Viewing membrane-bound molecular umbrellas by parallax analyses. J Am Chem Soc. 2008 Oct 15;130(41):13771-7
• Smirnova, TI et al (2007) Local polarity and hydrogen bonding inside the Sec14p phospholipids-binding cavity: High-field multi-frequency electron paramagnetic resonance studies. Biophys J. 92: 3686-95
• Wu F, Gaffney BJ (2006) Dynamic behavior of fatty acid spin labels within a binding site of soybean lipoxygenase-1. Biochem 45(41): 12510-8
• Alaouie AM, Smirnov AI (2006) Ultra-stable temperature control in EPR experiments: thermodynamics of gel-to-liquid phase transition in spin-labeled phospholipid bilayers and bilayer perturbations by spin labels. J Magn Reson.182(2):229-38
• McConnell HM, Martinez-Yamout M (1996) Insight into antibody combining sites using nucleic magnetic resonance and spin label haptens. Adv Protein Chem 49: 135-48
• Dejongh HH, Hemminga MA, Marsh D (1990) ESR of spin-labeled bacteriophage M13 coat protein in mixed phospholipid bilayers. Biochem Biophys Acta 1024: 82-88

Related Products: **DOXYL PC's**
TEMPO PC's

MSDS: available on Avanti's website for product number 810602

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