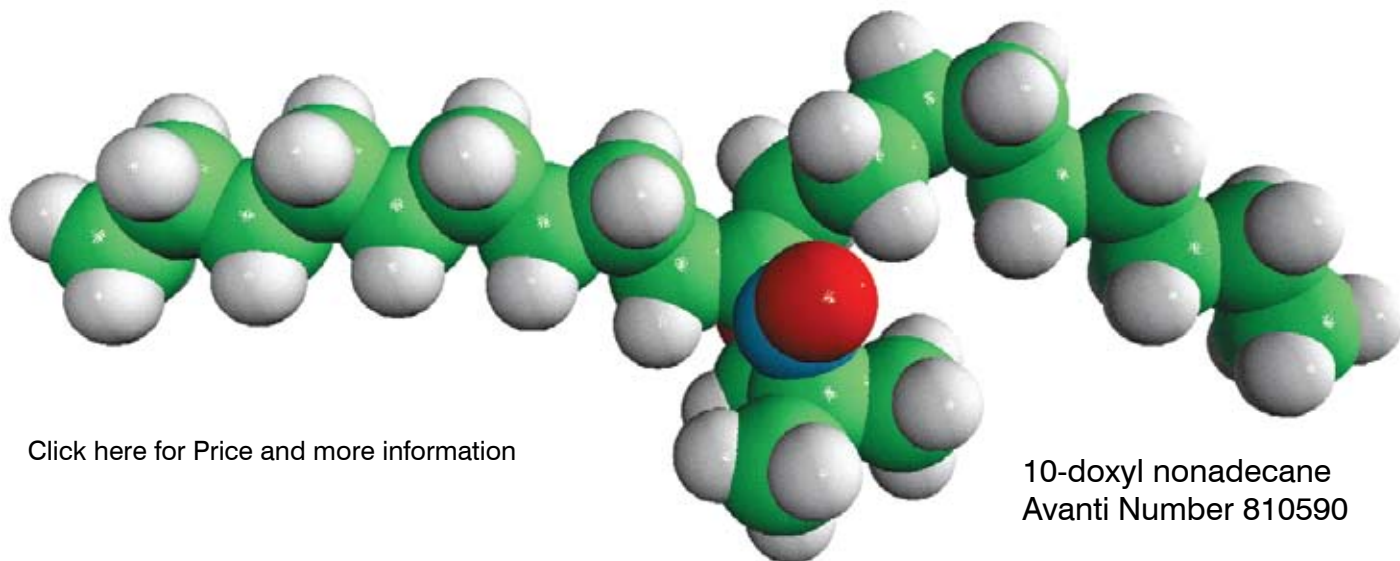


# A NEW MOLECULE FOR TRP QUENCHING

## ONLY FROM AVANTI®



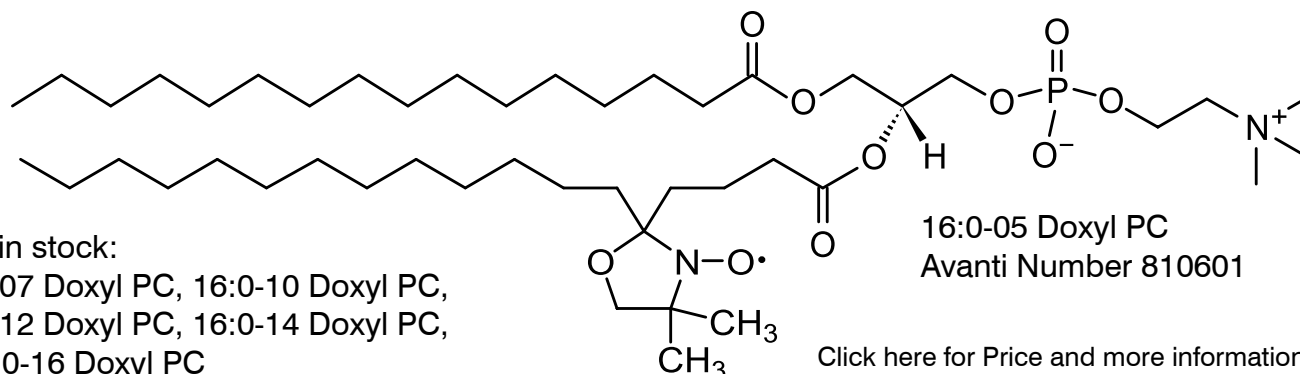
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10-doxyl nonadecane  
Avanti Number 810590

A novel fluorescence method for determining the depth of Trp residues in membrane-inserted polypeptides is introduced. Quenching of Trp by acrylamide and 10-doxylnonadecane (10-DN) was used to measure Trp depth. Trans-membrane helices with Trp residues at varying positions (and thus locating at different depths in lipid bilayers) were used to calibrate the method. It was found that acrylamide quenches Trp close to the bilayer surface more strongly than it quenches deeply buried Trp, while 10-DN quenches Trp close to the center of the bilayer more strongly than Trp close to the surface. The ratio of acrylamide quenching to that of 10-DN was found to be nearly linearly dependent on the depth of Trp in a membrane. It was also found that it was possible to detect coexisting shallowly and deeply inserted populations of Trp-containing polypeptides using these quenchers. In the presence of such mixed populations, acrylamide induced large blue shifts in fluorescence emission  $\lambda_{\text{max}}$  whereas 10-DN induced large red shifts. In a more homogeneous population quencher-induced shifts were found to be minimal. Dual quencher analysis can be used to distinguish hydrophobic helices with a transmembrane orientation from those located close to the bilayer surface and, when applied to a number of different peptides, revealed novel aspects of hydrophobic helix behavior. Caputo, G.A. and E. London. (2003). Using a novel dual fluorescence quenching assay for measurement of tryptophan depth within lipid bilayers to determine hydrophobic alpha-helix locations within membranes. *Biochemistry* 42:3265-74.

## AVANTI'S NITROXIDE SPIN LABELED PC's

A variety of positions down the hydrophobic chain are labeled with the nitroxide functional group. This family of compounds allows probing of the membrane to various depths.



16:0-05 Doxyl PC  
Avanti Number 810601

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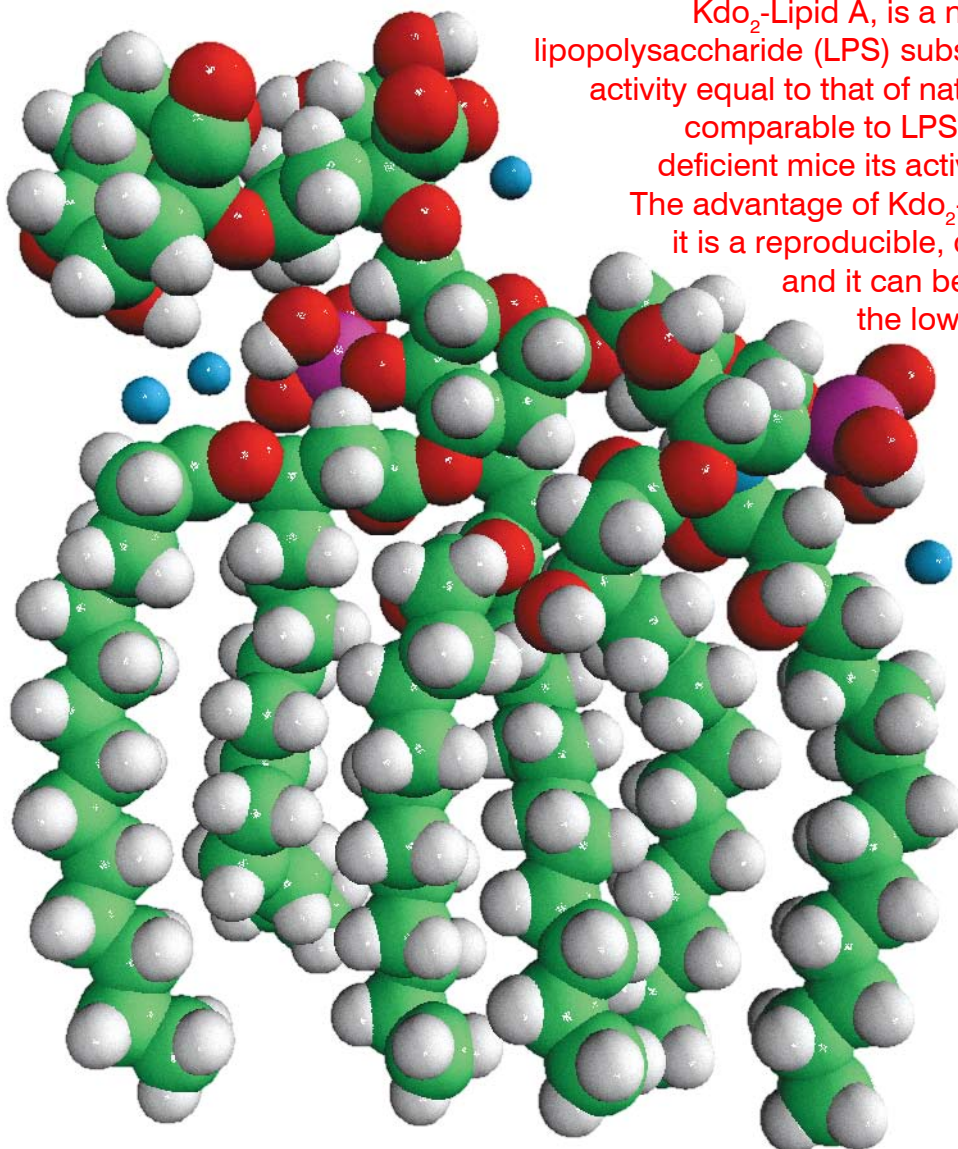
Also in stock:

16:0-07 Doxyl PC, 16:0-10 Doxyl PC,  
16:0-12 Doxyl PC, 16:0-14 Doxyl PC,  
& 16:0-16 Doxyl PC

continued overleaf

# AN ENDOTOXIN TO REPLACE LPS

## Kdo<sub>2</sub>-LIPID A

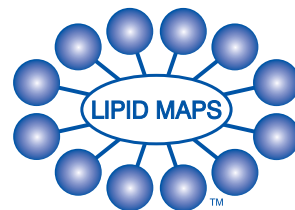


A new preparation of the saccharolipid glycan, Kdo<sub>2</sub>-Lipid A, is a nearly homogeneous Re lipopolysaccharide (LPS) substructure with endotoxin activity equal to that of native LPS. Kdo<sub>2</sub>-Lipid A is comparable to LPS and in cells from TLR-4 deficient mice its activity is reduced by >10<sup>3</sup>. The advantage of Kdo<sub>2</sub>-Lipid A over LPS is that it is a reproducible, defined natural product, and it can be detected by ESI/MS at the low concentrations used to stimulate animal cells.

The purity of Kdo<sub>2</sub>-Lipid A should also facilitate the structural analysis of its complexes with signaling receptors, such as TLR-4/MD2.

Now in Stock  
Kdo<sub>2</sub>-Lipid A  
Avanti Number  
699500

[Click here for Price and more information](#)



### Reference

Raetz, C.R., T.A. Garrett, C.M. Reynolds, W.A. Shaw, J.D. Moore, D.C. Smith Jr, A.A. Ribeiro, R.C. Murphy, R.J. Ulevitch, C. Fearn, D. Reichart, C.K. Glass, C. Benner, S. Subramaniam, R. Harkewicz, R.C. Bowers-Gentry, M.W. Buczynski, J.A. Cooper, R.A. Deems, and E.A. Dennis. (2006). Purification and properties of *Escherichia coli* Kdo<sub>2</sub>-lipid A, a defined endotoxin that activates macrophages via TLR-4. *J Lipid Res* 47:1097-111.

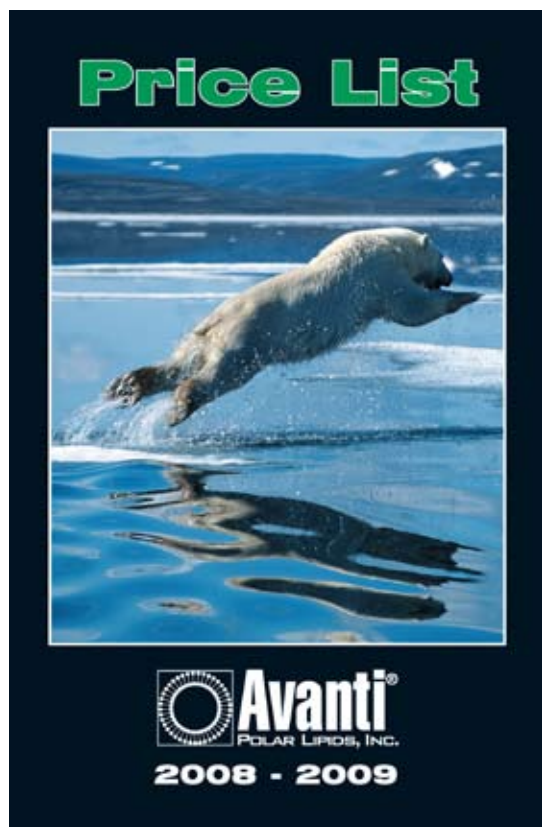
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**Avanti will be Exhibiting**  
August 26 - 30, Maastricht, Netherlands

- NIH Research Festival  
**Avanti will be Exhibiting**  
October 14-17, Bethesda, MD

- CPhI Worldwide  
**Avanti will be Exhibiting**  
Sep. 30th - Oct. 2nd,  
Frankfurt a.M., Germany

