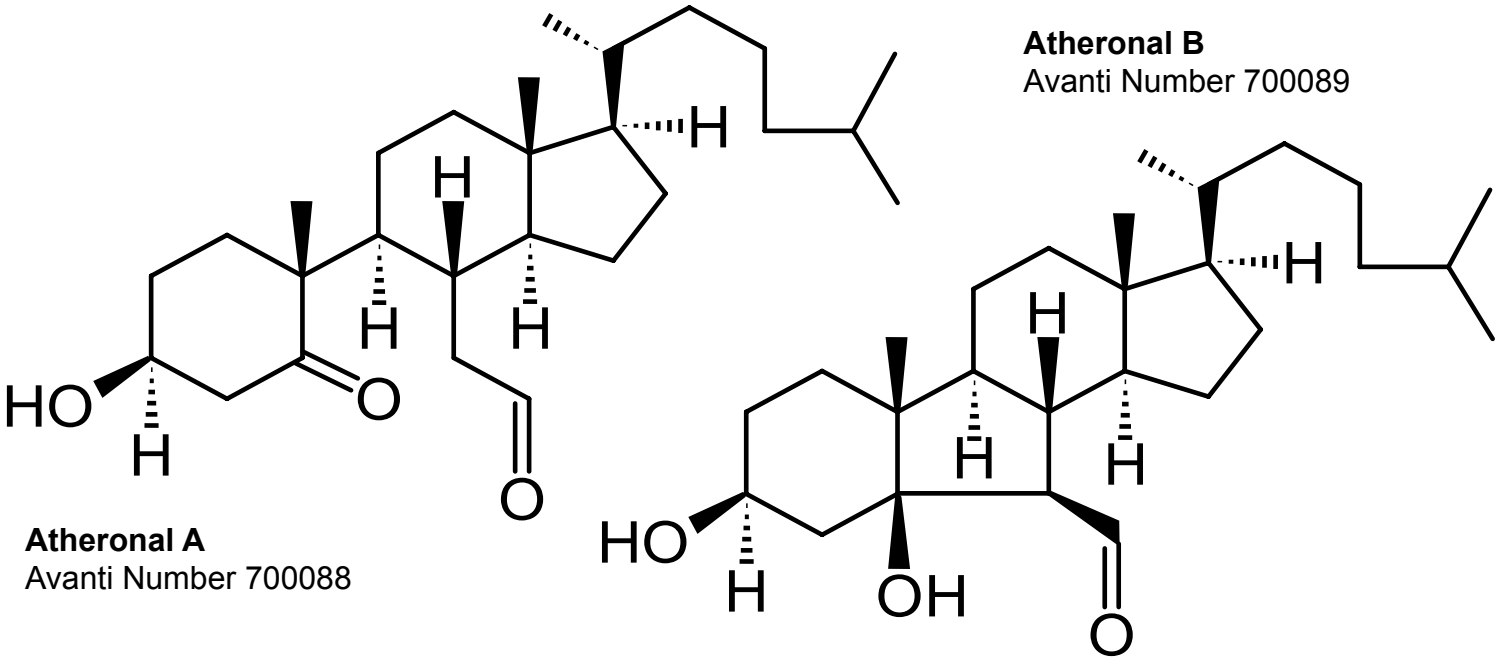
Avanti®
Polar Lipids, Inc.

The Lipid Lowdown

New Sterols linked to Atherosclerosis



Atheronal A
Avanti Number 700088

Atheronal B
Avanti Number 700089

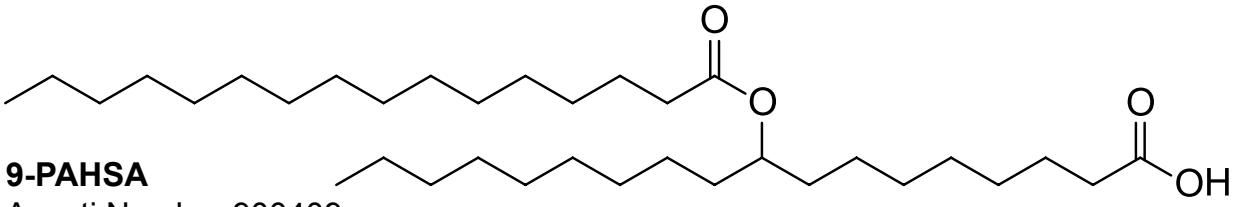
The proatherogenic properties of the cholesterol 5,6-secosterols (atheronal-A and atheronal-B), recently discovered in atherosclerotic arteries, have been investigated in terms of their effects on monocyte/macrophage function. A fluorescent analogue of atheronal-B, when cultured in either aqueous buffer or in media containing fetal calf serum, is rapidly taken-up into cultured macrophage cells and accumulates at perinuclear sites..... When complexed with LDL , atheronal-A (but not atheronal-B) induces a dose-dependent upregulation of the cell-surface adhesion molecule endothelial (E)-selectin on vascular endothelial cells. LDL complexed atheronal-B but not atheronal-A induces cultured human monocytes (THP-1) to differentiate into macrophage cell lineage. When these *in vitro* data are taken together with the already known effects of cholesterol 5,6-secosterols on foam cell formation and macrophage cytotoxicity, the atheronals possess biological effects that if translated to an *in vivo* setting could lead to the recruitment, entrapment, dysfunction, and ultimate destruction of macrophages, with the major leukocyte player in inflammatory artery disease. As such, the atheronal molecules may be a new association, in the already complex inter-relationship, between inflammation, cholesterol oxidation, the tissue macrophage, and atherosclerosis.

Takeuchi, C., R. Galve, J. Nieva, D.P. Witter, A.D. Wentworth, R.P. Troseth, R.A. Lerner, and P. Wentworth Jr. (2006). Proatherogenic effects of the cholesterol ozonolysis products, atheronal-A and atheronal-B. *Biochemistry* 45:7162-70.

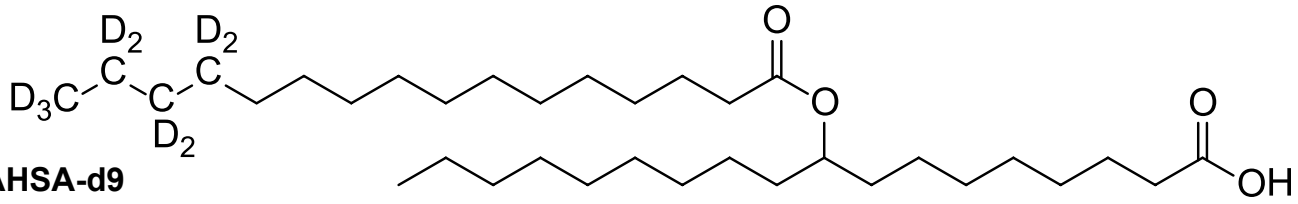
For more details click here

New Endogenous Lipid with Anti-Diabetic and Anti-Inflammatory Effects

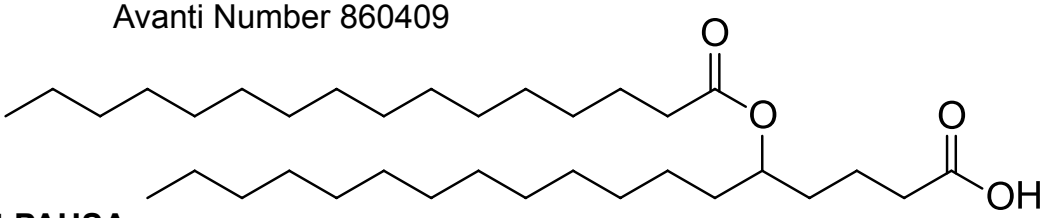
PAHSA levels correlate highly with insulin sensitivity and are reduced in adipose tissue and serum of insulin-resistant humans. In adipocytes, PAHSAs signal through GPR120 to enhance insulin-stimulated glucose uptake. Thus, FAHFAs are endogenous lipids with the potential to treat type 2 diabetes.*



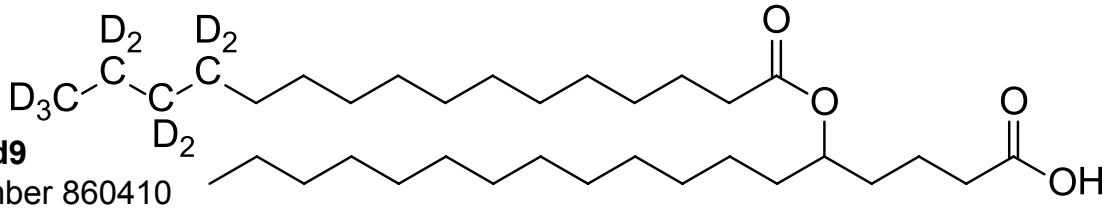
9-PAHSA
Avanti Number 900409



9-PAHSA-d9
Avanti Number 860409



5-PAHSA
Avanti Number 900410



5-PAHSA-d9
Avanti Number 860410

*Reference: Yore, M.M., I. Syed, P.M. Moraes-Vieira, T. Zhang, M.A. Herman, E.A. Homan, R.T. Patel, J. Lee, S. Chen, O.D. Peroni, A.S. Dhaneshwar, A. Hammarstedt, U. Smith, T.E. McGraw, A. Saghatelian, and B.B. Kahn. (2014). Discovery of a class of endogenous mammalian lipids with anti-diabetic and anti-inflammatory effects. *Cell* 159:318-32.

Avanti has obtained a license from the patent holder to manufacture these products for research use.

For more details click here

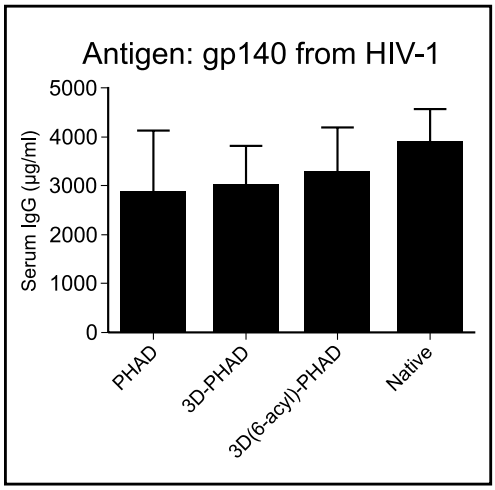
The Lipid Lowdown

New Products

Avanti's scientists are constantly developing exciting new lipids.
Keep up to date by visiting this section regularly.

Click here

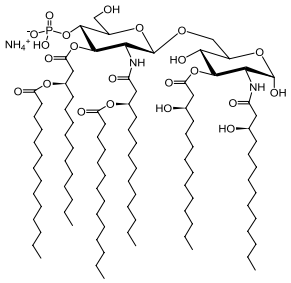
Equivalence of Synthetic MPLAs



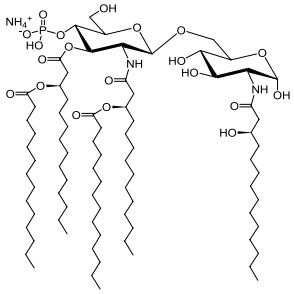
Data kindly provided by Dr. Carl R. Alving, Walter Reed Army Institute of Research.

Vaccine adjuvants using heterogeneous monophosphoryl Lipid A (MPL) derived from *Salmonella minnesota* R595 have proven to be safe and effective at inducing Th-1 type immune responses to heterologous proteins in animal and human vaccines.
Avanti revolutionized immunotherapy and vaccine development with the introduction of Synthetic MPL derivatives and adjuvant systems.
Avanti now manufactures multiple synthetic analogs of MPL containing a single molecular species that are as effective and safe at inducing an immune response as their natural product predecessor. PHAD®, 3D-PHAD®, and 3D(6A)-PHAD® are manufactured according to cGMP guidelines and are available in bulk quantities for your clinical trials.

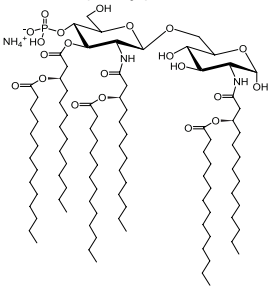
PHAD®



3D-PHAD®



3D-(6-acyl) PHAD®



Click here

PHAD®, 3D-PHAD®, and 3D(6A)-PHAD® have been tested extensively in animals using a variety of antigens. In all cases, these adjuvants demonstrate equivalency to the bacterially-derived MPL.

Please look us up during one of the many Shows at which we will be exhibiting

• NIH Spring Biomedical Research Equipment & Supplies Exhibit
Avanti is Exhibiting - Booth 421
May 18 - 19
Bethesda, MD

• Lipid Mediators in Health and Disease II
Avanti is Sponsoring
May 19 - 20
La Jolla, CA

• 64th ASMS Conference on Mass Spectrometry
Avanti is Exhibiting - Booth 427
June 5 - 9
San Antonio, TX

LIPID MAPS Annual Meeting
Avanti is Attending
May 17 - 18
La Jolla, CA

43RD Controlled Release Society Meeting
Avanti is Exhibiting - Booth 406
July 17 - 20
Seattle, WA

57th International Conference on the Bioscience of Lipids
Avanti is Sponsoring
September 6 - 10
Chamonix Mont-Blanc, France

www.avantilipids.com
Phone: 800-227-0651
Email: info@avantilipids.com

Avanti® Polar Lipids, Inc.