

RESEARCH PRODUCTS

The Highest Purity Lipid Reagents

MilliporeSigma is the U.S. and Canada Life Science business of Merck KGaA, Darmstadt, Germany.

* MilliporeSigma is the exclusive supplier of Avanti Research™ to customers in Canada.



Product Showcase

Browse [SigmaAldrich.com/Avanti](https://www.sigmaaldrich.com/Avanti) to explore more than 2,400 Avanti Research™ products with 99% purity. All products are manufactured by Avanti Research™ and backed by the same quality standards and informed techniques. Because they're available from MilliporeSigma, ordering is easy, inventory is reliable and support is always within reach.

- Phospholipids
- Natural and synthetic lipids
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- Sterols
- Fluorescent lipids
- Detergents
- Lipidomics
- Bioactive lipids
- Fatty acid modified lipids
- Headgroup modified lipids
- Coenzyme A and derivatives
- Stable isotopes and ESR probes
- Polymers and polymerizable lipids
- Cationic lipids (transfection)
- Neutral lipids

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Polar Bear photo provided by: Kyriakos Kaziras

The Avanti Research™ Mission

Whether you specialize in lipidomics or are new to the field, you know the critical role lipids play and the inherent challenges they present. You don't need to be a lipid specialist to know that you should order from one.

Vision & Philosophy

The Avanti™ team is continually developing and enhancing solutions for your entire product cycle, while maintaining ethical standards. They provide the highest purity products so you can do amazing things. The exclusive global distribution agreement with MilliporeSigma ensures customers outside of the United States also have easy access to Avanti™ products through the strong e-commerce and logistics capabilities of SigmaAldrich.com.



Immunotherapy & Vaccine 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. The Avanti Research™ team revolutionized immunotherapy and vaccine development with the introduction of synthetic MPL derivatives and adjuvant systems. We also offer multiple Avanti™ 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™ adjuvants have been tested extensively in animals using a variety of antigens. In all cases, these adjuvants exhibit a similar activity and safety profile to bacterially derived MPL.



Monophosphoryl Lipid A (MPL) Adjuvants

| Product | Description |
|---------|--|
| 699855P | 3D-(6-acyl) PHAD™ Monophosphoryl Hexa-acyl Lipid A, 3-Deacyl (Synthetic), powder |
| 890810C | 18:0 DDAB Dimethyldioctadecylammonium (Bromide Salt), chloroform |
| 890810P | 18:0 DDAB Dimethyldioctadecylammonium (Bromide Salt), powder |
| 699500P | Kdo2-Lipid A (KLA) Di[3-deoxy-D-manno-octulosonyl]-lipid A (ammonium salt), powder |
| 699200P | Lipid A - Purified Lipid A Detoxified (Salmonella minnesota R595), powder |
| 699851P | 3A-MPLA Monophosphoryl Tri-acyl Lipid A (Synthetic), powder |
| 699854P | 4A-MPLA (isomer C3) Monophosphopdyl Tetra-acyl Lipid A, powder |
| 699800P | MPLA (PHAD™) Monophosphoryl Lipid A (Synthetic) (PHAD™), powder |
| 699852P | 3D-PHAD™ Monophosphoryl 3-Deacyl Lipid A (Synthetic) Pat No. 9,241,988, powder |
| 699810P | PHAD™-504 Monophosphoryl Lipid A-504, powder |
| 890808P | 22:0 Trehalose D-(+)-trehalose 6,6'- dibehenate, powder |
| 890809P | Trehalose monooleate D-(+)-trehalose 6-monooleate, powder |

Learn more about adjuvants on

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Discover the following at

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- Storage and Handling of Lipids
- Fatty Acid Distribution
- Phase Transition Temperatures
- Miscibility of Phospholipid Binary Mixtures
- Ionization Constants of Phospholipids
- Critical Micelle Concentrations (CMCs)