

The PHAD™ range

Highly pure TLR4 agonists

PHADs are synthetic, highly pure structural analogues to bacterial-derived monophosphoryl lipid A (MPLA.) They are immunostimulators, acting as toll-like receptor 4 (TLR4) agonists which elicit a strong Th1 immune response. The range is highly researched in human clinical studies.

We offer three distinct structures in GMP quality for your clinical development.

The PHAD range offers:

- Synthetic structural analogues of bacterial-derived MPLA with a similar immunological activity
- Highly pure and GMP manufactured products for clinical development
- Established safety profile from phase 1/2 clinical testing

The family of PHAD™ products

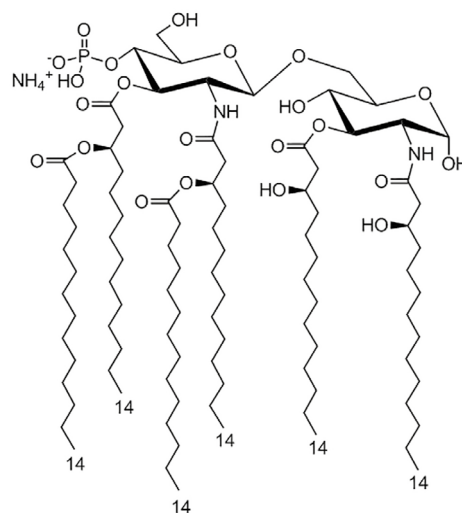
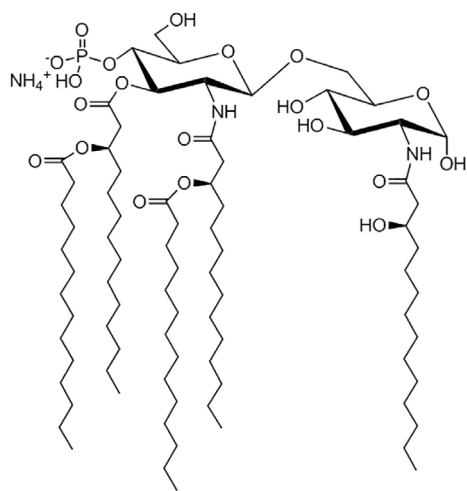
PHAD™

PHAD, Phosphorylated Hexa Acyl Disaccharide, is the first synthetic equivalent in our portfolio to bacterial derived monophosphoryl lipid A (MPLA).

It boosts the immune system through activation of the toll-like receptor 4 (TLR4) resulting in production of proinflammatory cytokines and antigen-specific effector CD4+ and memory CD8+ T-cells.

Also referred to as GLA, PHAD, has been administered to over a thousand human subjects without serious adverse events.

PHAD is available in GMP quality for vaccine development.



3D-PHAD™

A highly pure 3D-PHAD provides a homogeneous synthetic equivalent for the 3-deacylated MPLA derived from bacterial LPS (lipopolysaccharides). Varying the number and positioning of acyl chains creates a variety of lipophile/hydrophile ratios that can be utilised by formulation scientists to better suit their lipid-delivery systems.

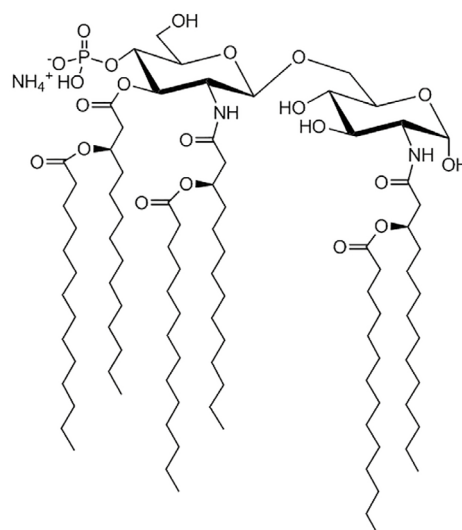
The product has demonstrated equivalency to PHAD during extensive preclinical testing, and human trials. 3D-PHAD is protected under US Pat No. 9,241,988.

3D(6-acyl)-PHAD™

A synthetic MPLA structural analogue, 3D(6-acyl)-PHAD is most closely related to the reported structure of MPL® Adjuvant used in marketed liposomal adjuvant systems.

This adjuvant is structurally homogeneous and highly pure. It mimics the TLR4 agonist activity of bacterial MPLA.

PHAD, 3D-PHAD, and 3D(6-acyl)-PHAD have been tested extensively using a variety of antigens. In all cases, these adjuvants exhibit a similar activity and safety profile to bacterial-derived MPLA.



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