

# AntiMax-2

Squalene-based oil-in-water adjuvant

Catalog # AG296

For research use only. Not for use in humans.

## PRODUCT INFORMATION

### Content:

10 ml AntiMax-2 is provided as a ready-to-use sterile emulsion

### Storage and stability

AntiMax-2 is shipped at room temperature and should be stored at 2-8°C. AntiMax-2 is stable for 24 months. **DO NOT FREEZE.**

### Formulation

AntiMax-2 is based on nano-emulsification of 2 components:

- Sorbitan trioleate (5% v/v)
- Tween 80 in sodium citrate buffer (10 mM, pH 6.5)

The nano-emulsion is produced using a microfluidizer and filtered through a 0.22- $\mu$ m filter to remove large droplets and sterilize the final product. The particle size is ~ 160 nm.

### Quality control

AntiMax-2 is prepared under strict aseptic conditions and is tested for the presence of endotoxins. AntiMax-2 is guaranteed sterile and its endotoxin level is <5 EU/ml.

Adjuvanticity of AntiMax-2 was evaluated by assessing the levels of total mouse IgG (mIgG) after four subcutaneous injections of EV012 Epstein-Barr Virus Infected Cell Extract (1:1, v/v) in mice at 7 days intervals. Results were compared to mice receiving antigen formulated in Freund's Complete/Incomplete Adjuvant.

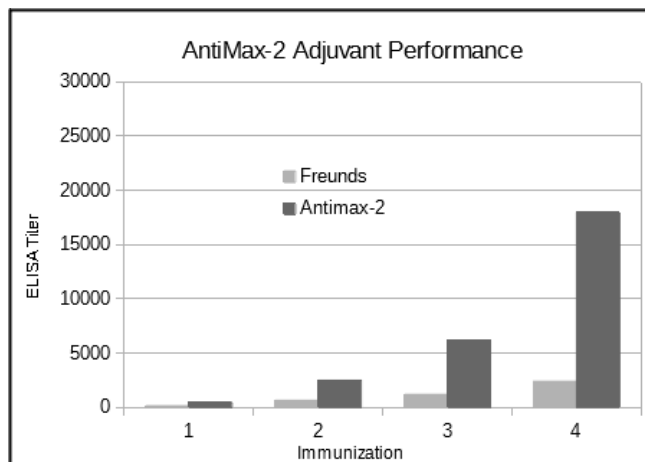
## DESCRIPTION

Antimax<sup>®</sup> is a squalene-based oil-in-water nano-emulsion based on the formulation of MF59<sup>®</sup> that has been licensed in Europe for adjuvanted flu vaccines<sup>1</sup>. Squalene is an oil more readily metabolized than the paraffin oil used in Freund's adjuvants<sup>2</sup>. AntiMax-2 promotes a significant increase in antibody titers with reportedly more balanced Th1/Th2 responses than those obtained with alum. AntiMax-2 is believed to act through a depot effect, enhancement of antigen persistence at the injection site, recruitment and activation of antigen presenting cells, and direct stimulation of cytokines and chemokines production by macrophages and granulocytes<sup>3</sup>.

Typical results obtained with AntiMax-2 are shown in Figure I.

MF59<sup>®</sup> is a registered trademark used for adjuvants for vaccine owned by Novartis Ag.

1 Mhow ME *et al.*, 2010. New adjuvants for human vaccines. *Curt Opin Immunol* 22(3):411-6. 2. Coffman **RI.**, *et al.*, 2010. Vaccine adjuvants: Putting innate immunity to work. *Immunity* 33(4):492-503.



## METHODS

### Preparation of antigen-AntiMax-2 mixture

Antigens are preferentially diluted in saline or phosphate buffers. The amount of protein or conjugated peptide used for the primary immunization can be adjusted depending upon availability and immunogenicity of the antigen. Mice can be injected subcutaneously (s.c.) with 5 to 50  $\mu$ g of antigen.

- Bring AntiMax-3 to room temperature.
- Shake the capped bottle of AntiMax-3 before sampling with a needle inserted through the rubber septum.
- Mix equal volumes of antigen and AntiMax-3<sup>®</sup> by pipetting.

The volume of injection depends of the site of administration. For example, 100-200  $\mu$ l can be injected s.c. in mice.

*Note: To avoid anaphylaxis, do not use adjuvants for intravenous injection.*

Recommended maximum volumes for injection of antigen/adjuvant mixtures per site of injection for laboratory animals. (Lindblad EH., 2000. Freund's Adjuvants. In: Vaccine adjuvants: Preparation Methods and Research Protocols. Humana Press, Totowa, NJ).

Species	Max. volume	Injection Site
Mice, hamsters	100 $\mu$ l	subcutaneous (s.c.)
Mice, hamsters	50 $\mu$ l	intramuscular (i.m.)
Guinea pigs	200 $\mu$ l	s.c. or i.m.
Rats	200 $\mu$ l	s.c. or i.m.
Rabbits	250 $\mu$ l	s.c. or i.m.