

# AddaS03™

AS03-like vaccine adjuvant

Catalog Code: vac-as03-10

<https://www.invivogen.com/as03-like-adjuvant>

For research use only

Version 20E19-ED

## PRODUCT INFORMATION

### Contents

- 10 ml AddaS03™ provided as a ready-to-use sterile emulsion

### Storage and stability

- AddaS03™ is shipped at room temperature. Upon receipt, store product at 4°C.
- AddaS03™ is stable for at least 1 year when properly stored.
- **DO NOT FREEZE**

### Formulation

AddaS03™ is a nano-emulsification of:

- DL- $\alpha$ -tocopherol (5% v/v) in squalene oil 5% (v/v)
- Tween80® (1.8% v/v) in phosphate-buffered saline (pH 6.8)

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.

### Quality control

- AddaS03™ is VacciGrade™ (preclinical grade). It is prepared under strict aseptic conditions and is tested for the presence of endotoxins.
- AddaS03™ is guaranteed sterile and its endotoxin level is <5 EU/ml (determined by the LAL method with EndoSafe®).
- Physio-chemical characteristics of AddaS03™ have been confirmed by sizing and HPLC.

## PRODUCT DESCRIPTION

AddaS03™ is an oil-in-water emulsion adjuvant, with a formulation based on the adjuvant system AS03, a fundamental component of the FDA-approved influenza vaccines. In identical proportions to AS03, InvivoGen's AddaS03™ is composed of two biodegradable oils, squalene and DL- $\alpha$ -tocopherol, and for stability, the surfactant polysorbate 80 (Tween 80®).

*Please note: AS03 is a registered product of GSK, and is used for comparative purposes only. AddaS03™ is not made by, affiliated with, sponsored by or endorsed by GSK. GSK has not evaluated or approved the representations contained herein.*

### AS03: vaccine adjuvant

AS03 has been shown to trigger transient NF- $\kappa$ B-dependent innate immune responses. This results in the production of cytokines and chemokines at the site of injection (i.e. muscle) and in the draining lymph nodes (dLN), which induces the migration of essential immune cells (e.g. monocytes and granulocytes)<sup>1</sup>. AS03 increases the magnitude and breadth of both humoral and cell-mediated immune responses, when compared to non-adjuvanted vaccines<sup>2</sup>.

Furthermore, the addition of AS03 in vaccines stimulates antigen-specific antibody production, thus allowing the 'sparing of antigen' while maintaining a robust and specific immune response<sup>2</sup>.

The use of DL- $\alpha$ -tocopherol, the most bioavailable form of vitamin E, distinguishes AS03 from MF59®. In both *in vitro* and *in vivo* studies, DL- $\alpha$ -tocopherol has been shown to be important in the secretion of cytokines, recruitment of immune cells, such as antigen-presenting cells (APCs), and their uptake of the antigen<sup>2,3</sup>. Ultimately, DL- $\alpha$ -tocopherol changes the profile of the local innate immune response and leads to a greater antibody response<sup>2</sup>.

**1. Morel, S. et al. 2011.** Adjuvant System AS03 containing alpha-tocopherol modulates innate immune response and leads to improved adaptive immunity. *Vaccine* 29, 2461-2473. **2. Garcon, N. et al. 2012.** Development and evaluation of AS03, an Adjuvant System containing alpha-tocopherol and squalene in an oil-in-water emulsion. *Expert Rev Vaccines* 11, 349-366. **3. Shi, S. et al. 2019.** Vaccine adjuvants: Understanding the structure and mechanism of adjuvanticity. *Vaccine* 37, 3167-3178.

## METHODS

### Preparation of antigen-AddaS03™ mixture

Antigens should be preferentially diluted in a saline or phosphate buffer. The amount of antigen (e.g. protein or conjugated peptide) used for the primary immunization should be adjusted (e.g. 1 - 15  $\mu$ g)<sup>2</sup> depending upon availability and immunogenicity of the antigen.

1. Bring AddaS03™ to room temperature.
2. Shake the capped bottle of AddaS03™ before opening.
3. Mix equal volumes of the prepared antigen and AddaS03™.

*Note: The volume of injection depends of the site of administration.*

## RELATED PRODUCTS

Product	Cat. Code
<b>Vaccine Adjuvants</b>	
AddaVax™	vac-adx-10
Adju-Phos® adjuvant	vac-phos-250
Alhydrogel® adjuvant 2%	vac-alu-250
CFA	vac-cfa-10
IFA	vac-ifa-10
ODN 1826 VacciGrade™	vac-1826-1
ODN 2006 VacciGrade™	vac-2006-1
<b>OVA Antigens</b>	
EndoFit™ Ovalbumin (endotoxin-free)	vac-pova
Ovalbumin	vac-stova

### TECHNICAL SUPPORT

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