

# Quil-A® Adjuvant

Saponin vaccine adjuvant

Catalog code: vac-quil

<https://www.invivogen.com/quila>

Distributed by InvivoGen for research use only. Not approved for use in humans.

Version 20D28-MM

## PRODUCT INFORMATION

### Contents

- 1 g of lyophilized Quil-A® adjuvant

*Note:* Product is **not** sterile nor aseptically filled. However, prior to lyophilization Quil-A® adjuvant has been passed through a 0.22 micron filter. Hence, the product has very few colony forming units (CFU).

### Storage and stability:

- Quil-A® adjuvant is provided lyophilized and shipped at room temperature.
- Lyophilized Quil-A® adjuvant can be stored from -25 °C to 25 °C. It is essential that Quil-A® adjuvant is not subjected to humidity, as the lyophilized product may contain a very low number of CFU.
- Lyophilized powder is stable for up to 5 years, provided the product is kept dry.
- Once dissolved and sterile-filtered, Quil-A® adjuvant should be stored at -20 °C.

### Quality control:

- Purity and composition is assessed using high-performance liquid chromatography (HPLC) and high-performance thin-layer chromatography.
- The ability of Quil-A® adjuvant to hemolyze sheep red blood cells (SRBC) is used as an indirect read-out for the integrity of the saponin molecule.
- The dry-matter content is tested to verify the efficiency of the lyophilization, as low-water content in the final product is important for maximizing the shelf-life.

## DESCRIPTION

Quil-A® adjuvant is a saponin adjuvant produced under GMP by Croda (following its acquisition of Brenntag Biosector A/S) a leader in the global vaccine adjuvants market, and purified by them through a proprietary process that ensures consistency and immunostimulatory potential. Quil-A® adjuvant is used in a wide variety of veterinary vaccines, as well as in immunological research into human and veterinary applications<sup>1,2</sup>. Quil-A® adjuvant contains the water-extractable fraction of saponins from the South-American tree, *Quillaja saponaria* Molina. These saponins belong to the group of triterpenoid saponins, that have a common triterpenoid backbone structure. Saponins induce a strong adjuvant response to T-dependent as well as T-independent antigens<sup>3</sup>. Saponins also induce strong cytotoxic CD8+ lymphocyte responses and potentiate the response to mucosal antigens<sup>2,3</sup>. When combined with cholesterol and phospholipids to form ISCOMs (immunostimulatory complexes), Quil-A® adjuvant can activate both the cell-mediated and the antibody-mediated immune responses to a broad range of viral, bacterial, parasitic and tumor antigens<sup>4</sup>.

1. Reed S. et al., 2013. Key roles of adjuvants in modern vaccines. *Nat Med.* 19(12):1597-608. 2. Singh M. & O'Hagan D., 2003. Recent advances in veterinary vaccine adjuvants. *Int J Parasitol.* 33:469-78. 3. Petrovsky N. & Aguilar JC., 2004. Vaccine adjuvants: Current state and future trends. *Immunol Cell Biol.* 82(5):488-96. 4. Sun HX. et al., 2009. ISCOMs and ISOMATRIX™. *Vaccine* 27(33):4388-401.

## TECHNICAL SUPPORT

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## CHEMICAL PROPERTIES

CAS number: 8047-15-2

Dry matter: ≥95%

## METHOD

### Preparation of stock solution (10 mg/ml)

1. Weigh 100 mg of Quil-A® adjuvant. Place in a clean container.
2. Add 10 ml of distilled water to 100 mg of Quil-A® adjuvant.
3. Mix using a magnetic stirrer until all the material has dissolved.
4. Immediately after dissolving the lyophilized powder, **pass it through a 0.22 micron sterility filter** into a sterile container under laminar air flow (Class A) in Class B surroundings.
5. After sterile filtration the Quil-A® adjuvant solution should be stored frozen until use. Prepare aliquots to avoid repeated freeze-thaw cycles.
6. Due to the risk of alkaline hydrolysis, do not expose Quil-A® adjuvant to a pH above 8.5.

## INJECTION ROUTE

Quil-A® adjuvant should only be injected subcutaneously or intramuscularly. Quil-A® adjuvant should **never** be injected intraperitoneally, as the surface activity of the saponin molecules can lead to chemical peritonitis and induce fibrous adhesions between the organs in the peritoneum.

## DOSING GUIDELINES

Mice: ≤ 15 µg/dose

Rabbits: ≤ 50 µg/dose

Cattle: ≤ 750 µg/dose

Guinea pigs: ≤ 25 µg/dose

Pigs: ≤ 300 µg/dose

## RELATED PRODUCTS

Product	Description	Cat. Code
<b>Alum and emulsions</b>		
AddaVax™	Squalene-o/w	vac-adx-10
Alhydrogel® adjuvant 2%	Al(OH) <sub>3</sub> gel	vac-alu-250
CFA	Complete Freund's Adjuvant	vac-cfa-10
<b>PRR ligands</b>		
2'3'-cGAMP VacciGrade™	STING agonist	vac-nacga23
ODN 1826 VacciGrade™	Murine TLR9 agonist	vac-1826-1
Poly(I:C) VacciGrade™	TLR3 agonist	vac-pic
<b>OVA Antigens</b>		
EndoFit™ Ovalbumin	For <i>in vivo</i> use	vac-pova
Ova 257-264	For detection; ELISPOT	vac-sin
Ova 323-339	For detection; ELISPOT	vac-isq

For a complete list of adjuvants provided by InvivoGen, please visit <https://www.invivogen.com/vaccine-adjuvants>.

Quil-A® is a trademark of Croda.