Two-component liposome adjuvant-B

Cat. No.: L1520830 | Pack size: 0.5ml; 1ml; 5ml | Storage: Store at 2-8°C, Protected from light

Overview

Two-Component Liposomal Adjuvant B is a liposomal adjuvant system based on 3-O-deacylated-4'-monophosphoryl lipid A (3D-MPLA) and Quillaja saponin QS-21 fraction. It achieves synergistic delivery of the two adjuvants via bilayer liposomes, effectively enhancing immune responses and vaccine efficacy. Prepared by the thin-film dispersion method combined with liposome extrusion technology, the liposomes feature uniform particle size (PDI < 0.2) ranging from 95 nm to 120 nm. It is a ready-to-use solution appearing as an opalescent, colorless to light brown liquid, which can be directly mixed with antigens (suitable for reconstitution of lyophilized vaccines).

II. Technical Parameters

Item	Specification
Components	3D-MPLA + QS-21 fraction
Particle size distribution	80–120 nm (PDI < 0.2)
pH value	5.8–6.4
Shelf life	2 years (stored at 2–8 °C, protected from light

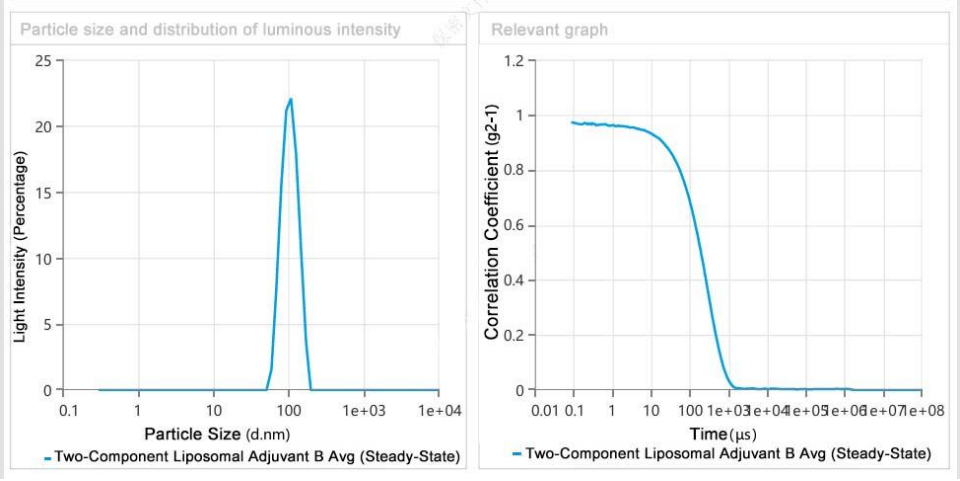

Figure 1 Schematic diagram of particle size results

Item	Average	Standard Deviation	Relative Standard Deviation	Minimum	Maximum
Z-Average (nm)	100.8	-	-	100.8	100.8
Polydispersity Index (PI)	0.02836	-	-	0.02836	0.02836
Area Mean Diameter of Volume-weighted Distribution (nm)	106.2	-	-	106.2	106.2
Intercept	0.9801	-	-	0.9801	0.9801
Polydispersity	0.001341	-	-	0.001341	0.001341

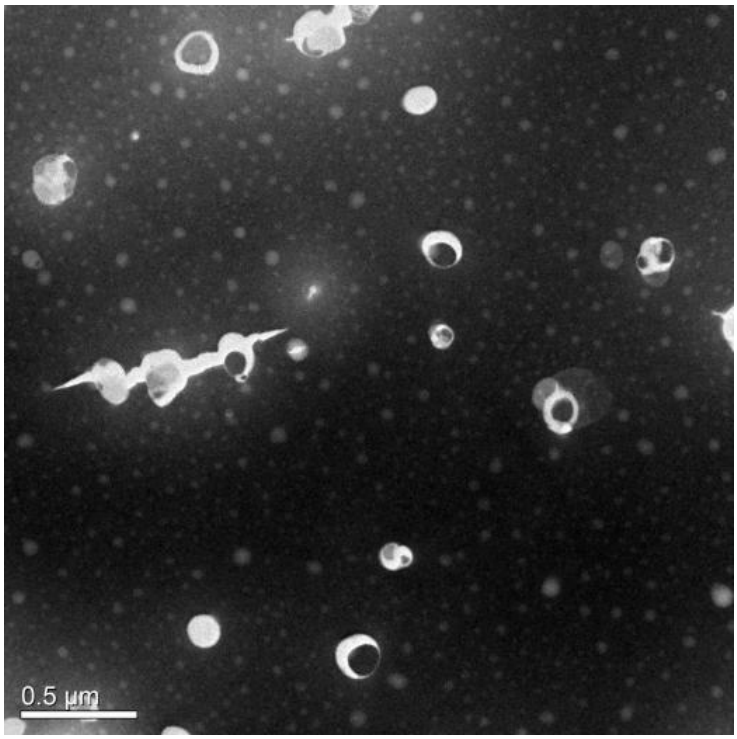

Figure 2 Transmission electron microscopy (TEM) image

III. Product Information

1. Components: Core raw materials consist of 3D-MPLA produced by fermentation of Salmonella minnesota R595 and QS-21 fraction (purity ≥95%) extracted from Quillaja saponaria. All materials comply with the adjuvant technical guidelines of NMPA.

2. Manufacturing and Testing: Each component is tested to meet strict internal standards, including component identification and batch consistency. The adjuvant is manufactured in a GMP-grade cleanroom via a tightly controlled liposome production process, with batch-to-batch consistency CV < 5%. Sterility is ensured by 0.22 μm sterile filtration during production. Stability is verified by accelerated testing (25 °C / 75% RH, 6 months), with active ingredient retention >95% and particle size variation <10%.

3. Immune Response: The adjuvant activates the immune system through dual TLR4/TRIF and CD2 pathways. The MPL component activates TRIF signaling via the TLR4/MD-2 receptor, inducing dendritic cell maturation and promoting IL-12 secretion. Meanwhile, the QS-21 fraction directly activates ZAP-70 kinase by binding to the CD2 receptor on T cells, enhancing IFN-γ production. In addition, the liposomal carrier significantly improves the uptake efficiency of antigen-presenting cells (APCs), thereby synergistically eliciting robust humoral and cellular immune responses.

4. Verified Application Scenarios: Herpes zoster vaccine; RSV vaccine; Malaria vaccine

5. Compatibility Ratios of Different Antigens with Two-Component Liposomal Adjuvant B

Vaccine Type	Antigen	Antigen: Two-Component Liposomal Adjuvant B
Recombinant zoster vaccine	gE protein	50 μg: 50 μg (1:1)
Malaria vaccine	RST, S	25 μg: 25 μg (1:1)
HIV vaccine	gp120 protein	20–50 μg: 50 μg (0.5~1:1)
RSV vaccine	Pre F3	50 μg: 50 μg (1:1)

Note: The concentration of Two-Component Liposomal Adjuvant B is 100 μg/mL.

6. Recommended Dosage

Recommended injection volume of antigen/adjuvant mixture at different administration sites in laboratory animals

Species	Dosage
Mouse	50 μL
Rat	100 μL
Guinea pig	200 μL
Rabbit	200 μL
Human	500 μL

Specifications

Attribute	Value
Synonyms	Liposome Di-adjuvant B
Specifications & Purity	BioReagent,sterile
Stability And Storage	Store at 2-8°C long term (24 months). Store in the dark.
Storage Conditions	Store at 2-8°C, Protected from light
Shipped In	Wet ice. This product requires cold chain shipping. Ground and other economy services are not available.

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NORTH AMERICAN SALES, SUPPORT & GENERAL INQUIRIES

Aladdin Scientific Corporation

14078 Meridian Parkway, Riverside, CA 92518, USA

Phone: 1-833-552-7181

Sales: sales@aladdinsci.com

Customer Service: custserv@aladdinsci.com

EU SALES, LOGISTICS & LOCALIZED SUPPORT

Aladdin Biochem Deutschland GmbH

Westring 2, 33142 Büren, Germany

Phone: +02951 9383958

Support: support.eu@aladdinsci.com

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