PolyVax-CPO Vaccine Adjuvant
Cationic **PO**lymer**-based Vaccine Adjuvant Adjuvant

Content and product information

PolyVax-CPO is a cationic polymer-based composition for DNA vaccine.

Description

PolyVax-CPO is a cationic polymer genetic adjuvant that associates with plasmid DNA to form an efficient polymer-based nanoparticle delivery system (NPD). NPD are **non-viral gene delivery systems**, self-assembled from cationic polymer and negatively charged immunogen that function as vaccine carrier. **PolyVax-CPO** adjuvant is compatible with most immunization procedures: such as intramuscular, intraepidermal, intravenous, intraperitoneal or subcutaneous.

Kit contents

CP02000: 2x1 mL of PolyVax-CPO.

Certificate of analysis on demand.

Use, handling and storage

For Research Use Only. Not for use in humans. Not for use in diagnostic or therapeutic purposes.

Shipping conditions: Room Temperature.

Storage conditions: 4°C.

Shelf life: 1 year from the date of purchase.

⚠ Do not freeze.

Related Products

Ref	Description
#AH0250	AlumVax Hydroxide 2%
#AP0250	AlumVax Phosphate 2%
#SQ0100	SqualVax, squalene oil-in-water emulsion
#CFA0100	Complete Freund's Adjuvant (CFA)
#CV02000	CaLiVax-DOTAP Adjuvant
#LV02000	LipoVax NTA(Ni)

Method | Protocol

Recommendations before starting:
The inoculum should be free of extraneous microbial contamination; use plasmid DNA as pure as possible. Adapt volumes according to table 1 below.

1. Allow PolyVax adjuvant and immunogen solution to reach room temperature before beginning.

2. Shake gently the PolyVax vial before opening.

3. Dilute immunogen/DNA/RNA in saline buffer or phosphate buffer for a final concentration of **100 µg/100 µL**.

It is mandatory to use buffers without serum.

4. Mix PolyVax adjuvant with an equal volume of immunogen/DNA/RNA solution for a **1:1** ratio.

5. Pipette up and down several times to ensure correct mix.

6. Incubate at room temperature for **20-30 min**.

7. Inject into the animal according to the table below.

NOTE: do not store complexes, discard solution after use. Prepare fresh NPD before each immunization.

Typical routes of administration include subcutaneous (SC), intramuscular (IM), intradermal (ID) or intraperitoneal (IP).

Species	IM	SC	ID	IP
Mice, hamsters	0.05-0.1 mL	0.1-0.2 mL	0.025 mL	0.5 mL
Guinea pigs, rats	0.1-0.2 mL	0.2-0.4 mL	0.025 mL	1.0 mL
Rabbits	0.25 mL	0.25 mL	0.025 mL	10 mL
Pigs	0.25-0.5 mL	0.5 mL	0.5 mL	50 mL

Table 1: Recommended volumes (mL) for injection of immunogen/adjuvant mixtures per site of injection for different animal species (*adapted from Leenars MPPA, Hendriksen CFM et al., 1999*).

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Plasmid DNA

Cationic formulation-mediated antigen-coding plasmid DNA has been shown to greatly improve humoral and cell-mediated immunity. One of the possibilities is that these DNA vaccines could facilitate uptake of the plasmid by antigen-presenting cells (APC) and induce cytotoxic T lymphocyte response. Moreover, once entrapped into nanoparticles, DNA is protected from nucleases and depending on their size, some NPD may break down locally to release their vaccine content slowly; the accessibility of genetic material is thus prolonged.

Results

Results presented below demonstrate the effect of Polymer formulation adjuvant on immune system response:

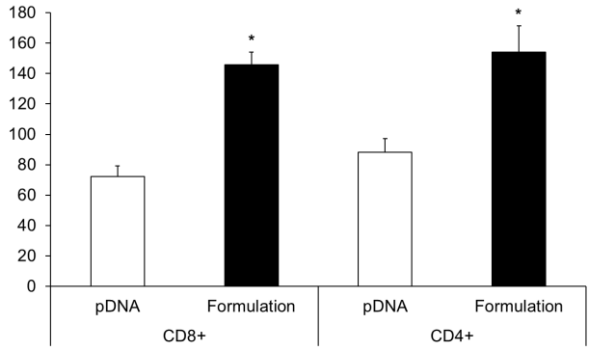

Figure 1. Humoral immune response after IM injection (10 µg pDNA per injection) with and without the formulation. Sera were analyzed after injection by ELISPOT assay (*adapted from Hartikka J., et al. J. Gene Med., 2008; 10(7): 770-782*).

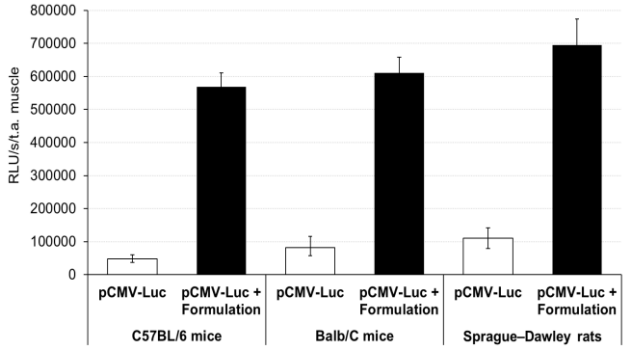

Figure 2. Gene expression efficacy in C57BL/6 mice, Balb/C mice or Sprague-Dawley rats after IM injection containing 5 ug of pCMV-Luc with and without formulation. Sera were analyzed 24h after intramuscular injection (*adapted from Lemieux P., Guerin N., et al., Gene therapy, 2000; 7(11): 986-991*).

References and background reading

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