

PolyVax-CPO Vaccine Adjuvant

Cationic POLYmer-based Vaccine Adjuvant

Product information

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

PolyVax-CPO is available in one quantity – 2mL.
#PV02000 2x1mL.

Storage and stability

Shipping and storage: PolyVax is shipped at RT and stored at +4°C. PolyVax is stable for 1 year. DO NOT FREEZE.

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.

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 the 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 not use buffer containing 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 the complexes: discard solution after use. Prepare fresh NPD before each immunization

Volume (mL) for injection depends on the site of injection and the animal model. Typical routes of administration include intramuscular (IM), subcutaneous (SC), intradermal (ID) or intraperitoneal (IP).

Species	I.M.	S.C.	I.D.	I.P
Mice, hamsters	0.05-0.1	0.1-0.2	0.025	0.5
Guinea pigs, rats	0.1-0.2	0.2-0.4	0.025	1.0
Rabbits	0.25	0.25	0.025	10
Pigs	0.25-0.5	0.5	0.5	50

Table 1: Recommended volumes for injection of immunogen/adjuvant mixtures per site of injection for different

animal species (Adapted from Leenars MPPA, Hendriksen CFM et al., 1999).

• 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:

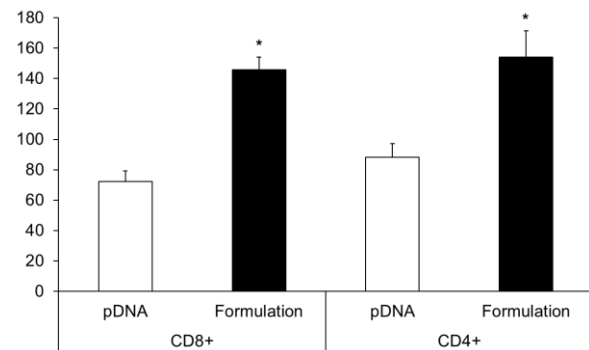


Figure 1. Humoral immune response after IM injection (10 µg pDNA per injection) with and without the formulation. Sera were analyzed after injection by ELISPOT assay. Adapted from Hartikka J., et al. *J. Gene Med.*, 2008; 10(7): 770-782.

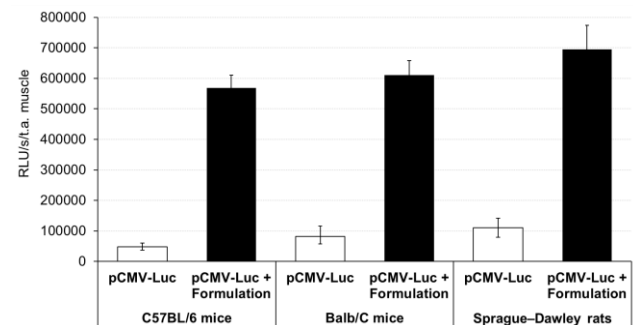


Figure 2. Gene expression efficacy in C57BL/6 mice, Balb/C mice or Sprague-Dawley rats after IM injection containing 5 µg of pCMV-Luc with and without formulation. Sera were analyzed 24h after intramuscular injection. Adapted from Lemieux P., Guerin N., et al., *Gene therapy*, 2000; 7(11): 986-991.

References and background reading

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Purchaser Notification

Limited License

The purchase of the PolyVax Vaccine Adjuvant grants the purchaser a non-transferable, non-exclusive license to use the included components. This reagent is intended for in-house research only by the buyer. Such use is limited to the transfection of nucleic acids as described in the product manual. In addition, research only use means that this formulation is excluded, without limitation, from resale, repackaging, or use for the making or selling of any commercial product or service without the written approval of OZ Biosciences. Separate licenses are available from OZ Biosciences for the express purpose of non-research use or applications of the PolyVax Vaccine Adjuvant. To inquire about such licenses, or to obtain authorization to transfer or use the enclosed material, contact the Director of Business Development at OZ Biosciences.

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Product Use Limitations

The PolyVax Vaccine Adjuvant is developed, designed, intended, and sold for research use only. It is not to be used for human diagnostic or included/used in any drug intended for human use. All care and attention should be exercised in the use of the component by following proper research laboratory practices.

OZ Biosciences SAS

163 avenue de Luminy
Case 922, zone entreprise
13288 Marseille cedex 09 - FRANCE
Ph: +33 (0) 486 948 516
Fax: +33 (0) 486 948 515
contact@ozbiosciences.com
order@ozbiosciences.com

OZ Biosciences INC

4901 Morena Blvd,
Suite 901
San Diego CA 92117 - USA
Ph: + 1-858-246-7840
Fax: + 1-855-631-0626
contactUSA@ozbiosciences.com
orderUSA@ozbiosciences.com

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