

## عنوان مقاله:

Engraftment of plasma membrane vesicles into liposomes: A new method for designing of liposome-based vaccines

## محل انتشار:

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## خلاصه مقاله:

**Objective(s):** One of the major challenges in the field of vaccine design is choosing immunogenic antigens which can induce a proper immune response against complex targets like malignant cells or recondite diseases caused by protozoan parasites such as leishmaniasis. The aim of this study was to find a way to construct artificial liposome-based cells containing fragments of target's cell membrane. This structure not only mimics the real biological properties of proteins in the cell membrane of target cells, but also may induce the required immune responses, which culminate in eradication of target cells. **Materials and Methods:** Five different techniques have been investigated to engraft the plasma membrane's vesicles (PMVs) derived from a characterized Leishmania parasite into liposomes. The most efficient method was tested again on the PMVs derived from well-known breast cancer cell line SK-BR-3. The percentage of engraftment was determined by two-color flowcytometry after staining the engrafted dioctadecyl-3,3,3-trimethylindocarbocyanine DiI[FAI]-labeled liposomes with FITC-labeled PMVs. **Results:** Among the investigated techniques, freeze-drying method with  $91 \pm 2\%$  and  $90 \pm 3\%$  of engraftment for Leishmania and SK-BR-3 derived PMVs, respectively, showed superiority over the other methods. In addition, after 9 weeks storage in refrigerator, freeze-dried fused particles kept their original size ( $660 \pm 350$  nm) and fusion efficiency ( $94 \pm 3\%$ ). **Conclusion:** Among five different engraftment techniques, freeze-drying is preferred over the other methods due to its simplicity, more fusion efficiency and stability of produced particles during storage.

## کلمات کلیدی:

DiI, Fused particles, Leishmania, Liposome, Plasma membrane vesicle, SK-BR-3

## لینک ثابت مقاله در پایگاه سیویلیکا:

