VACCINE COMPOSITION BASED ON STICHOLYSIN ENCAPSULATED INTO LIPOSOMES.

TECHNICAL FIELD:

The present invention relates to the field of biotechnology applied to human health. Particularly, the present invention relates to a vaccine vehicle for use in both subcutaneous and intramuscular based on liposomes containing sticholysin and enhancing antigen-specific immune cellular responses, useful in cancer immunotherapy and treatment of diseases caused by intracellular pathogens.

PRIOR ART:

The immunoadjuvant capacity of the liposomal vesicles has long been known. Rationality that exists in the use of liposomes in immunization and vaccine design is based on their ability to release antigenic molecule on antigen presenting cells (APC) and stimulate an immune response. The most important advantages of liposomes as immunoadjuvants are summarized in: (i) the ability to mimic pathogens carrying large amounts of antigen to APC, (ii) the possibility of co-encapsulating antigens with immunostimulatory molecules, (iii) the flexibility to modify its physicochemical properties for the purpose of more effective, and (iv) the fact of being biodegradable and nontoxic (Leserman in Journal of Liposome Research, 2004, 14 (3 & 4), 175–189).

A challenge in the field of vaccinology is the enhancement of cellular immune response mediated by antigen-specific cytotoxic T lymphocytes CD8+ (CTL), with relevance for the prevention and treatment of diseases induced by intracellular pathogens and tumor cells. Liposomal vesicles can enhance a CTL response but not always effectively. Different strategies based on liposomal vesicles have been designed with the intention of streamlining this function; examples are acidic pH-sensitive liposomes, cationic liposomes, the inclusion of immunomodulators such as CpG and pore-forming toxins form bacteria. Despite the variety of publications, some of these strategies have had limited success in the induction of effective cellular immune responses or are disadvantaged and therefore require a better design before implementation.

The integration of viral membrane proteins in the liposomal membrane in order to promote membrane fusion under conditions of acid pH or proteolytic processing, has been another alternative for the development of vaccine vehicles. These vesicles known as virosomes have not only been used as parental virus vaccines, but have also been exploited as vehicles for vaccine antigens, bound or encapsulated to virosome (Zurbriggen en Vaccine, 2003 14; 21(9-10):921-4). Virosome particles known with abbreviation IRIV (*immunopotentiating reconstituted influenza virosomes*), containing

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