

Mycobacterial membrane vesicles administered systemically in mice induce a protective immune response to surface compartments of mycobacterium tuberculosis

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© 2014 Prados-Rosales et al. Pathogenic and nonpathogenic species of bacteria and fungi release membrane vesicles (MV), containing proteins, polysaccharides, and lipids, into the extracellular milieu. Previously, we demonstrated that several mycobacterial species, including bacillus Calmette-Guerin (BCG) and Mycobacterium tuberculosis, release MV containing lipids and proteins that subvert host immune response in a Toll-like receptor 2 (TLR2)-dependent manner (R. Prados-Rosales et al., J. Clin. Invest. 121:1471-1483, 2011, doi:10.1172/JCI44261). In this work, we analyzed the vaccine potential of MV in a mouse model and compared the effects of immunization with MV to those of standard BCG vaccination. Immunization with MV from BCG or M.

tuberculosis elicited a mixed humoral and cellular response directed to both membrane and cell wall components, such as lipoproteins. However, only vaccination with *M. tuberculosis* MV was able to protect as well as live BCG immunization. *M. tuberculosis* M