Abstract

Obligatory intracellular parasites such as Plasmodium sp, Trypanosoma cruzi, Toxoplasma gondii and Leishmania sp are responsible for the infection of hundreds of millions of individuals every year. These parasites can deliver antigens to the host cell cytoplasm that are presented through MHC class I molecules to protective CD8 T cells. The in vivo priming conditions of specific CD8 T cells during natural infection are largely unknown and remain as an area that has been poorly explored. The antiparasitic mechanisms mediated by CD8 T cells include both interferon-γ-dependent and -independent pathways. The fact that CD8 T cells are potent inhibitors of parasitic development prompted many investigators to explore whether induction of these T cells can be a feasible strategy for the development of effective subunit vaccines against these parasitic diseases. Studies performed on experimental models supported the hypothesis that CD8 T cells induced by recombinant viral vectors or DNA vaccines could serve as the basis for human vaccination. Regimens of immunization consisting of two different vectors (heterologous prime-boost) are much more efficient in terms of expansion of protective CD8 T lymphocytes than immunization with a single vector. The results obtained using experimental models have led to clinical vaccination trials that are currently underway.

Keywords

CD8, parasites, immunity, vaccine.