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Novel vaccination strategies for the delivery of HIV moieties

Toufic Nashar
Tuskegee University, USA

HIV infection poses tremendous challenges to the efforts of designing vaccination strategies. Important confounding issues are rapid replication of the virus in the gut, viral load, destruction of helper T cells, and integration of viral nucleic acid into host DNA. To address the complexity of HIV infection, a state of "high readiness" in the host should be adopted to prevent or reduce the impact of viral infection. The latter may be fulfilled by the use of live attenuated recombinant viral or bacterial vectors in conjunction with strong recombinant protein adjuvants, as platforms for the delivery of HIV moieties. Live attenuated coxsakievirus B4 (CVB4) expressing a partial HIV gag p24 protein sequence induced high p-24-specific T helper and T cytotoxic immune responses after oral and intra-peritoneal delivery of CVB4/p24. Co-administration of a class of bacterial proteins shown to have strong immunomodulatory effects on antigen presenting cells and T cells, resulted in apparent enhancement of the cytotoxic T cell response. It is proposed that recombinant forms of these proteins expressing HIV epitopes would be good adjuvant platforms in conjunction with live attenuated recombinant vectors.

Biography

Toufic Nashar has completed his Ph.D from University of Bristol, U.K. and postdoctoral studies at University of Bristol and University of Kent, UK, and Albany Medical College, NY, US. He held the post of Research Affiliate at Wadsworth Research Center, NY, US. He is currently Assistant Professor Immunology/Virology at Tuskegee University, Alabama. He has more than 19 publications including peer-reviewed articles in reputed journals, review articles and book chapters. His research work has focused on immune modulation for vaccine development against viral and bacterial diseases.

tnashar@mytu.tuskegee.edu