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Immune responses of ALT-2 epitope vaccine for filariasis in mice model

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Abundant larval transcript (ALT) is a L3 stage specific, abundantly expressed unique filarial antigen. ALT protein is an established vaccine candidate since it is the major protein involved in the establishment of filarial infection at early stages by infective L3 larvae. Immunization with recombinant ALT-1 conferred 60-75% protection in earlier studies. ALT-2 is known to play an important role in immunomodulation of host which is the one of the key strategies utilized by the parasite for its long term survival. We mapped the epitopes of ALT-2 and found that the regions 55-68 and 73-91 carried immunomodulatory domains. They were found to induce IL-10 cytokine production in our study and hence were thought to be involved in T-cell hyporesponsiveness which is the hallmark of filarial infection. A recombinant epitope protein was engineered devoid of these immunomodulatory domains. The immune responses of recombinant epitope protein was tested in mice models and was found to be more compared to ALT-2. There was an increased humoral and cellular response observed as antibody titre and splenocyte proliferation assays.

Biography

Madhumathi J has completed her PhD from Anna University, Chennai which was on the development of multi-epitope peptide vaccines for Lymphatic Filariasis. She has 17 publications, two patents for filarial vaccines, two Genbank submissions and a protein structure submission in PDB. She has received New Investigator Award from the International Society of Infectious Diseases, USA on April 2014 for vaccine study. Currently, her Post-doctoral work in Indian Institute of Technology, Chennai, involves identifying cancer stem cells in leukemia and targeting them. She has received the Young Scientist Grant from the Department of Science and Technology, India.

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