

Scientists in China develop TB-HIV vaccine

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Singapore: Chinese scientists have developed a vaccine that acts simultaneously against *HIV-1* and *M. tuberculosis* (Mtb). The research team, which was led by Dr Sidong Xiong of Fudan University, Shanghai, incorporated four Mtb epitopes (the part of an antigen that is recognized by the immune system) into a backbone composed of HIV-1 p24 protein, a protein that is known to produce protective immunity against HIV-1.

The logic of this construction is that many epitopes are short peptides, with poor immunogenicity unless they are introduced into a carrier protein, which in this case was the p24 protein. The research has been published in the May 2012 issue of *Clinical and Vaccine Immunology*.

The vaccine induced cellular immune responses to both pathogens, in which immune system cells including macrophages searched out and destroyed pathogens; and humoral immune response against HIV-1, in which the immune system produced antibodies against the pathogen. The vaccine has been tested in a mouse model.

An estimated 14 million people worldwide are coinfecting with the two pathogens. According to the WHO, TB is the direct cause of death in about one quarter of all fatalities among people with HIV/AIDS.