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Mimogen-a new strategy for post-exposure vaccine development

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Although mass inoculation with preventive vaccines have drastically decreased the prevalence of hepatitis B virus (HBV) infection in a few countries, the pool of post-exposure population worldwide remains essentially unchanged. Therapeutic vaccine is a potentially promising means for the treatment of chronic hepatitis B in clinic, yet no is available at present. εPA44 is a de novo designed mimogen that acts as a tri-epitope integrated immunogen in order to prime therapeutic immunity while avoiding harmful and unnecessary immunity. To prove the mimogen concept, we performed a randomized, dose-escalation trial in 56 normal healthy research volunteers and a randomized, double-blind, placebo-controlled trial in 46 patients in two centers in China. εPA44 was well tolerated and safe in all participants, and induced designed immune responses that included vigorous HBV-specific CTLs, anti-Pre-S(2) antibodies, Th1 cytokines, and downregulated regulatory T cells. εPA44 might also decrease serum viral load of HBV and conduce serum HBeAg/HBeAb seroconversion in patients, which could persist to week 252 without relapse. Our findings highlight the potential of mimogen strategy for treating patients with chronic infections.

Biography

Yuzhang Wu has completed his PhD for Immunology at the age of 29 years from Third Military Medical University School of Medicine. He is the director of the Institute of Immunology, PLA, the Chair of National Engineering Lab for Vaccine Development of China and National Center for Immunoprotection Research and Development of China. He has published more than 150 papers in reputed journals, applied for 75 international and national invention patents, among which 43 has been approved; and has gained 2 item of Computer software copyright. He is serving as chief-editor of Immunological Journal.

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