Retrovirology

Poster presentation

P19-36. Preclinical study of CombiHIVvac vaccine

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from AIDS Vaccine 2009
Paris, France. 19–22 October 2009

Published: 22 October 2009

Retrovirology 2009, **6**(Suppl 3):P356 doi:10.1186/1742-4690-6-S3-P356

This abstract is available from: http://www.retrovirology.com/content/6/S3/P356

Background

We have previously designed two polyepitope immunogens, TBI and TCI, to stimulate the humoral and cellular immune responses to HIV-1. Both immunogens were included into virus-liked particles based vaccine named CombiHIVvac. The goal of our study is analysis of CombiHIVvac immunogenic and toxic properties.

Methods

BALB/c (H-2 d) mice, 6 weeks of age were used for immunization that was carried out twice (1 and 28 days) by intramuscularly injection. One dose of the vaccine (0.2 ml/vol) contains 75 μg of DNApcDNA-TCI and 50 μg of TBI. Blood samples were collected on days 7, 14, 28, 35, 42 and 62 from the on-start of immunization and assayed by ELISA. Splenocyte samples were collected on day 35 for ELISPOT.

Results

Immunization with CombiHIVvac gave rise to HIV-1 specific antibodies in the treated mice. The highest titer of the antibodies as observed on day 35. The specificity of the sera was evaluated by immunoblotting, the antibodies specifically recognized the proteins of native HIV-1. Immunization with CombiHIVvac triggers both CTL and Th cells cloning. Single vaccine administration to mice in a dose of 250 μg did not result in any significant variations in body weight of experimental animals. The internal organs of mice did not differ structurally from control animals. The vaccine had no appreciable effect on the hematological parameters, except the 52% growth in blood leukocyte counts that was reversible. Ten-fold administration of CombiHIVvac in doses of 5 μg or 50 μg did not influence on the animal appearance, behavior or body weight. There was no difference in the internal organs weight indices between the experimental and control animals except spleen and lung weight.

Conclusion

CombiHIVvac does not cause long-term changes in physiological, biochemical parameters in immunized animals and it can be recommended for clinical trials.