

عنوان مقاله:

Flow Cytometric Evaluation of CD4⁺ and CD8⁺ T-cell Immune Response in SPF Chickens Induced by Fowlpox Vaccine

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خلاصه مقاله:

Fowlpox (FP) is a viral disease that is widely distributed throughout the world. The disease has an economic impact on the poultry industry, and its prevalence has even been reported in vaccinated flocks. The present study used flow cytometry to evaluate the CD4⁺ and CD8⁺ T-cell immune response of chicks induced by FP vaccine. ۱۲۰ specific pathogen-free (SPF) ۲۱-day-old chicks were randomly divided into three groups of ۴۰. One group was used as negative control with PBS inoculation, the other two groups were inoculated with the local fowlpox vaccine produced by Razi Institute and commercial FP vaccines, and they were kept for five weeks. Peripheral blood mononuclear cells (PBMC) were isolated using Ficoll–Hypaque density gradients and the percentages of CD3⁺, CD3⁺CD4⁺, and CD3⁺CD8⁺ T lymphocytes were analyzed with flow cytometry. Seven days post-immunization, a maximum (۹۰-۱۰۰%) swelling formation (“take”) on the vaccination site was observed. The ratios of CD4⁺ to CD8⁺ T-lymphocytes in both vaccinated groups were significantly higher ($p < ۰.۰۵$) than the control group inoculated with PBS. The percentages of CD3⁺, CD3⁺CD4⁺, and CD3⁺CD8⁺ T-lymphocytes were increased in chickens vaccinated with commercial and local FP vaccines. There were no significant differences between the groups receiving commercial and local fowl pox vaccines. The present study showed that protective immunity could be associated with increased cellular immune responses, which has been interpreted as enhancing T-cell proliferation and increasing CD4⁺ to CD8⁺ ratios through vaccination with the FP vaccine. This study further suggests that the induction of enhanced immune responses is due mainly to the Th1-type response.

کلمات کلیدی:

fowlpox vaccine, CD4⁺/CD8⁺ T lymphocytes, SPF chickens, Flow cytometry

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