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Immune responses in mice to DNA vaccination using the C-terminus of p43 (p12) from *Mycobacterium avium subspcies paratuberculosis*

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Abstract

AIM: To incorporate p12 in a plasmid under the control of the CMV promotor and test for the ability of the construct to produce specific immune responses in DNA immunized mice.

METHODS: A His tag fusion of the protein p12, was expressed in the prokaryotic expression vector (pQE) and the recombinant protein purified using Nickel chelate chromatography. His tagged p12 was sub cloned into the pBK CMV vector for expression in eukaryotic systems. Groups of six female balb/c m ice were vaccinated with either 50 μg im of the DNA pBK C MV-p12 or pBK-CMV vector alone at week 0, and boosted at 2 and 4 wk. ELISPO T assays (detection of p12 T-cell dependant IF-γ release) on mouse splenic cells were used to measure cell mediated immune responses and anti mouse IgG ELISAs to detect antibody response.

RESULTS: Significant CMI and humoral immune responses to recombinant p12 were detected in mice vaccinated with Pbk-CMV p12 vector compared to mice vaccinated with pBK-CMV vector alone. The mice remained well throughout the development of immunity to p12.

CONCLUSION: A DNA vaccine coding for a specific MAP protein will stimulate humoral and cell mediated immune responses in mice.

Key words: *Mycobacterium avium*; Paratuberculosis; DNA; Histocompatibility antigens class Ⅱ; Immunity; Immunity, cellular

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