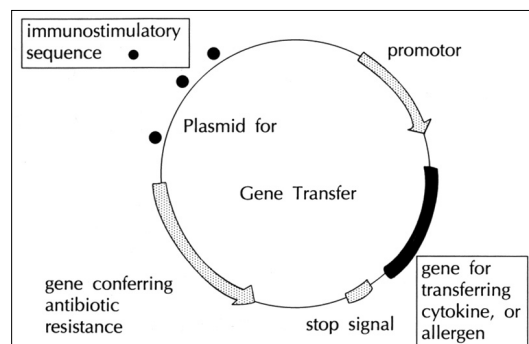
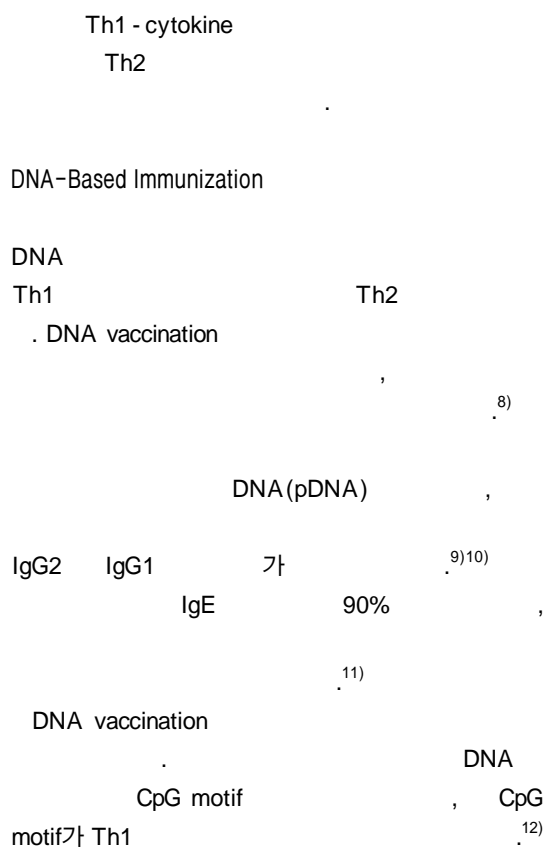
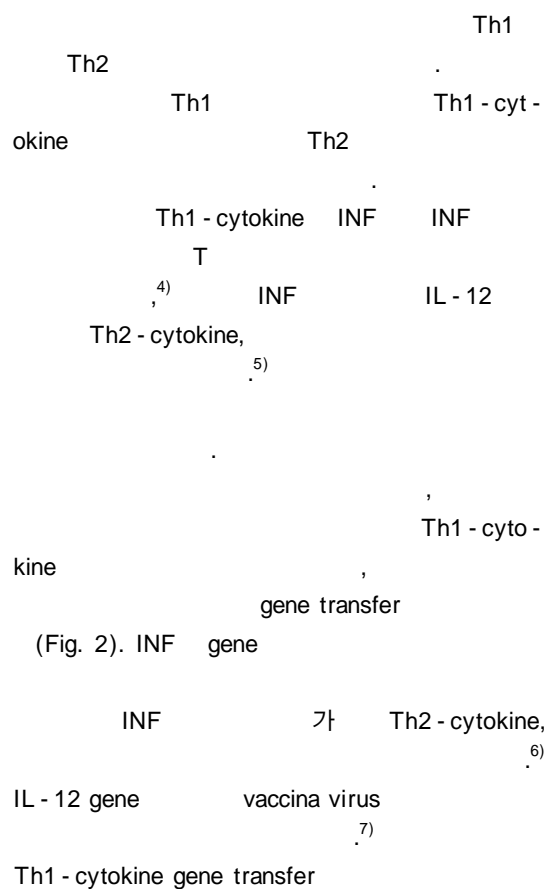


**Fig. 1.** Molecular targeting for immunomodulation. Pathways leading to development and/or progression of antigen-induced allergic inflammation have been primary targets proposed for modulation. These include strategies in modulations of cellular interaction, IgE synthesis, cytokine production, and cytokines (Ag : allergen, APC : antigen presenting cell, Th2 : Th2 cell, B : B cell, MC ; mast cell, Eo : eosinophil).



**Fig. 2.** Plasmid for gene transfer has 2 essential components. First is the construct that is responsible for synthesis of protein, which includes promoter of transcription, nucleotide sequence of Th1-cytokines or specific allergen, and termination sequence. In addition, the plasmid will generally contain an antibiotic selection marker to aid identification and purification, and must contain the immunostimulatory sequence (CpG motifs) that act as adjuvants and increase IL-12 and IFN- $\gamma$  production in a dose-dependent manner.

# Th1-Cytokine Gene Transfer



, MHC  
 (major histocompatibility complex) class antigen  
 presentation MHC class  
 antigen presentation ,  
 MHC class antigen presentation  
 . pDNA  
 MHC class an -  
 tigen presentation CD8 + T  
 , CD8 + T INF Th1  
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 요 약  
 가  
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 DNA vaccination , Th1  
 Th2 Th1 - cytokine gene transfer  
 . Th2 - cy -  
 tokine antisense - DNA 14)  
 15)  
 .  
 가  
 Th1 Th2  
 가  
 .  
 가  
 .  
 2000  
 중심 단어 : . Th -  
 1 cytokine gene transfer · DNA - based immuniza -  
 tion · DNA vaccination.

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