

Title (en)  
Enhancement of DNA immunization by co-expression of IL-12 subunits

Title (de)  
Verstärkung der DNA Immunisierung durch Coexpression der Untereinheiten von IL-12

Title (fr)  
Amplification de l'immunisation à l'ADN par la coexpression des sous-unités de l'IL-12

Publication  
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Application  
**EP 97912961 A 19971023**

Priority

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Abstract (en)  
[origin: WO9817799A1] Improved vaccines which include a nucleotide sequence that encodes IL-12, GM-CSF, IL-1, TNF- alpha , TNF- beta , IL-2, IL-4, IL-5, IL-10, IL-15, IL-18, and/or BL-1 operably linked to regulatory elements are disclosed. The improved vaccines include DNA vaccines, recombinant vaccines for delivering foreign antigen and live attenuated vaccines. Methods of immunizing individuals are disclosed. Pharmaceutical compositions comprising nucleic acid molecules that encode one or more immunomodulatory proteins selected from the group consisting of IL-12, GM-CSF, IL-1, TNF- alpha , TNF- beta , IL-2, IL-4, IL-5, IL-10, IL-15, IL-18, and BL-1 are disclosed. An immunomodulatory protein, BL-1, and nucleic acid molecules that encode BL-1 are disclosed. Methods of making and using BL-1 are disclosed.

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