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[54] GENE ENCODING BIOLOGICALLY ACTIVE HUMAN INTERLEUKIN 1

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[52] **U.S. Cl.** **435/69.52;** 435/69.1; 435/91; 435/172.3; 435/320.1; 435/255; 435/256; 536/27; 530/350; 935/13; 935/28; 935/37; 935/56; 935/61; 935/69

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[57] **ABSTRACT**

Double-stranded cDNA is prepared from polyadenylated RNA extracted from activated human peripheral blood adherent mononuclear cells. The cDNA is inserted within a plasmid vector and then the recombinant plasmid employed to transform an appropriate host. Transformed hosts are identified and grouped into pools. Plasmid DNA prepared from these pools is hybridized with a labeled, synthetic oligonucleotide probe corresponding to a portion of the amino acid sequence of the interleukin 1 protein. Pools of host cells that provide a positive signal to the probe are identified, plated out and then employed in direct bacterial colony hybridization with the same probe, thereby to isolate the particular positive colony. Plasmid DNA is prepared from this colony and characterized by restriction enzyme mapping and sequencing by chain-termination method. The coding region for the IL-1 gene is inserted into a shuttle vector for amplification of the vector followed by expression of functional IL-1.

11 Claims, 4 Drawing Sheets