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(54) Title: MODIFIED TNF α MOLECULES, DNA ENCODING SUCH MODIFIED TNF α MOLECULES AND VACCINES COMPRISING SUCH MODIFIED TNF α MOLECULES AND DNA

(57) Abstract

A modified human TNF α molecule capable of raising neutralizing antibodies towards wild-type human TNF α following administration of said modified TNF α molecule to a human host, wherein at least one peptide fragment of the human TNF α molecule has been substituted by at least one peptide known to contain an immunodominant T cell epitope or a truncated form of said molecule containing an immunodominant epitope and one or both flanking regions of the human TNF α molecule comprising at least one TNF α B cell epitope, wherein the substitution introduces a substantial change in the amino acid sequence of the front β -sheet, in any one of the connecting loops and/or in any one of the B', I or D strands of the back β -sheet. The modified human TNF α molecules or DNA encoding them may be formulated as vaccines against TNF α optionally with pharmaceutically acceptable adjuvants, for the prevention or treatment of chronic inflammatory diseases, such as rheumatoid arthritis and inflammatory bowel diseases, cancer, disseminated sclerosis, diabetes, psoriasis, osteoporosis or asthma. Human body fluids may be tested for the presence of TNF α by contact with a composition containing the modified TNF α .