

[54] SYNTHESIS OF PROTEIN WITH AN IDENTIFICATION PEPTIDE, AND HYBRID POLYPEPTIDE INCORPORATING SAME

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[57] ABSTRACT

A hybrid polypeptide composed of an identification peptide and a desired functional protein are produced by recombinant DNA techniques. A DNA expression vector is constructed that includes segments of DNA coding for the identification peptide and the desired functional protein. The identification peptide consists of a highly antigenic N-terminal portion and a C-terminal linking portion that connects the identification peptide to the N-terminal of the functional protein. The linking portion of the identification peptide is cleavable at a specific amino acid residue adjacent the functional protein by use of a sequence specific proteolytic enzyme or chemical proteolytic agent. The hybrid polypeptide expressed by the host cells transformed by the cloning vector is removed therefrom and purified by affinity chromatography techniques by use of an immobilized ligand specific to the antigenic portion of the identification peptide. The protein is then cleaved from the isolated hybrid polypeptide with an appropriate proteolytic enzyme or chemical agent, thereby releasing the mature functional protein in highly purified, highly active state.

8 Claims, 2 Drawing Sheets