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(54) Title: PRODUCTION OF RECOMBINANT PROTEINS BY AUTOPROTEOLYTIC CLEAVAGE OF A FUSION PROTEIN

(57) Abstract: The invention relates to a process for the recombinant production of a heterologous polypeptide of interest, comprising, (i) cultivation of a bacterial host cell which is transformed with an expression vector which comprises a nucleic acid molecule which codes for a fusion polypeptide, the fusion polypeptide comprising a derivative of an autoprotease N^{pro} of Pestivirus, wherein at least one cysteine residue of the naturally occuring autoprotease N^{pro} of Pestivirus is replaced by another amino acid residue, and a second polypeptide which is connected to the first polypeptide at the C-terminus of the first polypeptide in a manner such, that the second polypeptide is capable of being cleaved from the fusion polypeptide by the autoproteolytic activity of the first polypeptide, said second polypeptide being a heterologous polypeptide, wherein cultivation occurs under conditions which cause expression of the fusion polypeptide and formation of corresponding cytoplasmic inclusion bodies, (ii) isolation of the inclusion bodies from the host cell, (iii) solubilization of the isolated inclusion bodies, (iv) induction of autoproteolytic cleavage of the heterologous polypeptide of interest from the fusion polypeptide, and (v) isolation of the cleaved heterologous polypeptide of interest.

WO 2006/113957 A3