ABSTRACT

BACILLUS STEAROTHERMOPHILUS DNA POLYMERASE I (KLENOW) CLONES WITH REDUCED 3'-TO-5' EXONUCLEASE ACTIVITY

The present invention discloses a series of four recombinant DNA clones corresponding to the *Bacillus stearothermophilus DNA polymerase* (*DNApolI*) structural gene but with increasing deletions from the 5' end. These series of four recombinant DNA clones define the DNA synthesis domain. Further minor modifications at the 5' and 3' ends allow the clones to be manipulated by cloning and expressed as monomeric peptides. These deleted DNA clones give rise to a series of four truncated DNApolIK enzymes that are deficient in 3'-5' exonuclease activity and are useful in nucleic acid synthesis by primer extension reactions, particularly DNA labelling and DNA sequencing reactions. Furthermore, these clones may be combined with other clones in heterologous constructs to create hybrid proteins with novel properties.

A method for producing these enzymes is also disclosed, as well as their characterisation. This invention is exemplified by production of *B. stearothermophilus* DNA polymerase in *E. coli*.

Fig. 1 is to be published