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(54) Title: IMPROVED POLYNUCLEOTIDE SEQUENCE DETECTION METHOD

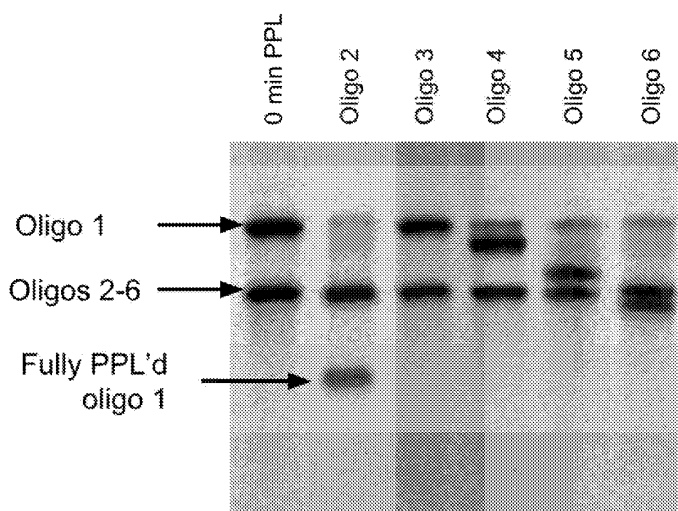


Fig. 1

(57) **Abstract:** A method of detecting a target polynucleotide sequence in a given nucleic acid analyte characterised by the steps of: a. annealing the analyte to a single-stranded probe oligonucleotide A_0 to create a first intermediate product which is at least partially double-stranded and in which the 3' end of A_0 forms a double-stranded complex with the analyte target sequence; b. pyrophosphorolysing the first intermediate product with a pyrophosphorolysing enzyme in the 3'-5' direction from the 3' end of A_0 to create partially digested strand A_1 and the analyte; c. (i) annealing A_1 to a single-stranded trigger oligonucleotide B and extending the A_1 strand in the 5'-3' direction against B; or (ii) circularising A_1 through ligation of its 3' and 5' ends; or (iii) ligating the 3' end of A_1 to the 5' end of a ligation probe oligonucleotide C; in each case to create an oligonucleotide A_2 ; d. priming A_2 with at least one single-stranded primer oligonucleotide and creating multiple copies of

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