

Title (en)

METHOD FOR DETECTING APOPTOSIS USING FRET LABELED OLIGONUCLEOTIDES

Title (de)

METHODE ZUM NACHWEIS VON APOPTOSE UNTER VERWENDUNG VON "FRET" MARKIERTEN OLIGONUKLEOTIDEN

Title (fr)

METHODE DE DETECTION DE L'APOPTOSE A L'AIDE D'OLIGONUCLEOTIDES MARQUES PAR FRET

Publication

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Application

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Priority

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Abstract (en)

[origin: WO929905A2] Ligase-mediated polymerase chain reaction (LM-PCR) methods are used to detect target double-stranded nucleic acid fragments such as those generated during the process of apoptosis. In these methods, a detectable oligonucleotide is incorporated into the target. This detectable oligonucleotide contains the donor moiety and/or the acceptor moiety of a molecular energy transfer (MET) pair. An example of a MET pair is a fluorescence energy resonance transfer (FRET) pair consisting of a fluorophore (donor) moiety and a quencher (acceptor) moiety. The donor moiety of the MET pair emits detectable energy such as light only when the detectable oligonucleotide is incorporated into the target. In these methods, a linker-primer oligonucleotide annealed to a ligation-aid oligonucleotide, or a linker-primer oligonucleotide containing a ligation-aid sequence, is ligated to the 5' end of each strand of a double-stranded nucleic acid fragment containing either a blunt end or a terminal overhang. After this ligation step, a detectable oligonucleotide capable of annealing to the complement of the linker-primer oligonucleotide is incorporated into the target by polymerase-catalyzed reactions. Alternatively, the linker-primer oligonucleotide is also a detectable oligonucleotide. Optionally, the target labeled by the detectable oligonucleotide is subsequently amplified, wherein the detectable oligonucleotide is incorporated into the amplification product. The target is detected by detecting the energy emitted by the donor moiety of the detectable oligonucleotide.

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