

*Abstract*

The present invention relates to methods for determining the presence or amount of one or more target nucleic acid molecules in a sample by loop mediated isothermal amplification (LAMP) and probe detection, the method comprising (a) combining a LAMP reaction mixture, a DNA polymerase with strand displacement properties, a sample containing the target nucleic acid molecule(s), at least one detection probe, and at least one cleaving agent; (b) amplifying the target nucleic acid molecule(s) by LAMP under suitable assay conditions that allow generation of the target amplicons by the LAMP reaction and multiple cycles of: hybridization of the at least one detection probe to the amplicons formed by the LAMP reaction, cleavage of the detection probe in the formed probe:target complex, and release of the cleaved probe fragments from each target; and (c) detecting and optionally quantifying the released fragments of said at least one detection probe, and therefrom determining the presence or amount of the target nucleic acid molecule(s) in the sample. The invention further relates to kits that are useful in the methods of the invention.

Figure 1 for publication with abstract