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Authors: Padmavathy Bakthavathsalam, Guillaume Longatte, Slade O. Jensen, Mike Manefield, J. Justin Gooding



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Locked nucleic acid molecular beacon for multiplex detection of loop mediated isothermal amplification

Padmavathy Bakthavathsalam^{a,c,*}, Guillaume Longatte^c, Slade O. Jensen^b, Mike Manefield^d, J. Justin Gooding^{c,†}

^aCSIR - Institute of Microbial technology, Sector 39A, Chandigarh, India

^bSchool of Medicine, Ingham Institute for Applied Medical Research, Western Sydney University, NSW, Australia

^cSchool of Chemistry and Australian Centre for NanoMedicine, University of New South Wales, Sydney, NSW, Australia

^dSchool of Chemical Engineering and the School of Civil and Environmental Engineering, University of New South Wales, Sydney, NSW, Australia

Highlights

The locked nucleic acid has shown an interesting property to improve the thermal stability and affinity of the molecular beacon probes. This property has been utilized for the real – time and multiplex detection of loop mediated isothermal amplification (LAMP). The insertion of LNA to the loop of the molecular beacon is the simplest approach to design probes for specific detection of LAMP. The thermal stability of the LNA has allowed multiplex detection of LAMP without much effort towards optimization of the reaction parameters. The LNA – MB probes based LAMP assay was successful in simultaneous detection of *femA* and *mecA* gene of *S. aureus* in a single reaction tube within 30 minutes. The validation of the assay on clinical isolates shows the clinical significance of the developed assay that helps the clinicians towards rapid diagnosis and initiation of appropriate antibiotic therapy. Thus, the developed assay holds a significant advancement to the LAMP and helps to increase its utility towards rapid molecular diagnostics.

ABSTRACT

Loop mediated isothermal amplification (LAMP) holds incredible promise for point – of – care molecular diagnostics because of its high sensitivity and isothermal amplification behaviour. The issues related to the spurious non-specific amplification caused by the template

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