Development of a LAMP based assay to identify bacterial species causing clinical mastitis in cattle

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The purpose of this project is to develop a Loop-Mediated Isothermal Amplification (LAMP) based assay to identify the pathogens that cause clinical mastitis in cattle. This will be a rapid pen side and accurate diagnostic test which will discriminate between Gram positive and Gram negative bacteria. As the most recent advice from mastitis researchers is to treat with antimicrobials only infections caused by Gram positive bacteria, this practice reduces antimicrobial usage in dairy farming without affecting the welfare and health of animals. The identification of bacteria is currently conducted using on farm bacteriological culture which at best provides results after 18 hours. We believe that the development of a rapid, inexpensive and easy-to-use diagnostic test based on LAMP technology would allow more effective treatment and reduce the unnecessary and inappropriate use of antimicrobials in the dairy industry.