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## DEVELOPMENT OF RECOMBINASE POLYMERASE AMPLIFICATION ASSAYS FOR DETECTION OF COXIELLA BURNETII

Li Yuexi<sup>1,2,3</sup>, Qi Yong<sup>1</sup>, Yin Qiong<sup>1,2</sup>, Shao Yinxiu<sup>1,2</sup>, Li jiameng<sup>1</sup>, Rao Jixian<sup>1</sup>, Li Xiaoling<sup>1,2</sup>, Zheng Shulong<sup>1,2</sup>, Lin Yu<sup>1,2</sup> and Deng Yi<sup>1,2</sup>

<sup>1</sup>Huadong Research Institute for Medicine and Biotechniques, China

<sup>2</sup>China Pharmaceutical University, China

<sup>3</sup>Nanjing Medical University, China

To develop recombinase polymerase amplification assays for detection of *Coxiella burnetii*, this is the causative agent of highly fatal Q fever. Because the clinical symptom of Q fever is not typical, the disease can be easily missed and misdiagnosed. Sensitive, specific and rapid diagnostic tests for the detection of *Coxiella burnetii* are necessary to accurately and promptly diagnose patients and ensure that they receive proper treatment. Recombinase polymerase amplification (RPA) assays using a lateral flow test (RPA-nfo) were developed targeting the 23SrRNA gene of *Coxiella burnetii*. A group of specific primers and probes with high amplification efficiency at 37°C was screened successfully, and the concentration of reverse primer and the probe was 5 μM, respectively. Furthermore, the RPA-nfo reaction was completed in 20 minutes at 37°C followed by 3-5 minutes incubation at room temperature for development of an immunochromatographic strip. All the results showed that the constructed RPA detection system

has good specificity for detection of *Coxiella burnetii* without cross-reaction with other viruses, and can detect *Coxiella burnetii* at levels comparable to that of the quantitative PCR method. The constructed RPA detection system showed superior detection performance, which could provide technical support for *Coxiella burnetii* in site detection.

### Biography

Li Yuexi has his expertise in development of diagnostic reagent and vaccine of infectious diseases. He has developed more than 100 diagnostic reagents and got 87 licenses from CFDA, including ELISA, gold-labeled immunochromatographic strip, qPCR, LAMP, RPA, and DNA chip. He is also developing several infectious diseases vaccines, such as herpes simplex virus, mycoplasma pneumoniae, etc.

liyxi2007@126.com