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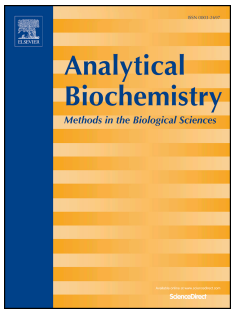

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PII: S0003-2697(18)30032-0

DOI: 10.1016/j.ab.2018.01.019

Reference: YABIO 12910

To appear in: *Analytical Biochemistry*

Received Date: 29 September 2017

Revised Date: 18 January 2018

Accepted Date: 21 January 2018

Please cite this article as: Gonç. Silva, J. Oyekanmi, C.K. Nkere, M. Bömer, P.L. Kumar, S.E. Seal, Rapid detection of potyviruses from crude plant extracts, *Analytical Biochemistry* (2018), doi: 10.1016/j.ab.2018.01.019.

Rapid detection of potyviruses from crude plant extracts

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Abstract (200 words)

Potyviruses (genus *Potyvirus*; family *Potyviridae*) are widely distributed and represent one of the most economically important genera of plant viruses. Therefore, their accurate detection is a key factor in developing efficient control strategies. However, this can sometimes be problematic particularly in plant species containing high amounts of polysaccharides and polyphenols such as yam (*Dioscorea* spp.). Here, we report the development of a reliable, rapid and cost-effective detection method for the two most important potyviruses infecting yam based on reverse transcription-recombinase polymerase amplification (RT-RPA). The developed method, named 'Direct RT-RPA', detects each target virus directly from plant leaf extracts prepared with a simple and inexpensive extraction method avoiding laborious extraction of high-quality RNA. Direct RT-RPA enables the detection of virus-positive