



## Replication modes of Maize streak virus mutants lacking RepA or the RepA–pRBR interaction motif

Moritz Ruschhaupt<sup>a</sup>, Darren P. Martin<sup>d</sup>, Francisco Lakay<sup>b</sup>, Marion Bezuidenhout<sup>b</sup>, Edward P. Rybicki<sup>b,c</sup>, Holger Jeske<sup>a</sup>, Dionne N. Shepherd<sup>b,\*</sup>

<sup>a</sup> Department of Molecular Biology and Plant Virology, Institute of Biology, University of Stuttgart, Pfaffenwaldring 57, 70550 Stuttgart, Germany

<sup>b</sup> Department of Molecular and Cell Biology, University of Cape Town, Rondebosch, 7701 Cape Town, South Africa

<sup>c</sup> Institute of Infectious Disease and Molecular Medicine, University of Cape Town, Observatory, 7925 Cape Town, South Africa

<sup>d</sup> Computational Biology Group, Institute of Infectious Disease and Molecular Medicine, University of Cape Town, Observatory, 7925 Cape Town, South Africa

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### ABSTRACT

The plant-infecting mastreviruses (family *Geminiviridae*) express two distinct replication-initiator proteins, Rep and RepA. Although RepA is essential for systemic infectivity, little is known about its precise function. We therefore investigated its role in replication using 2D-gel electrophoresis to discriminate the replicative forms of Maize streak virus (MSV) mutants that either fail to express RepA (RepA<sup>-</sup>), or express RepA that is unable to bind the plant retinoblastoma related protein, pRBR. Whereas amounts of viral DNA were reduced in two pRBR-binding deficient RepA mutants, their repertoires of replicative forms changed only slightly. While a complete lack of RepA expression was also associated with reduced viral DNA titres, the only traces of replicative intermediates of RepA<sup>-</sup> viruses were those indicative of recombination-dependent replication. We conclude that in MSV, RepA, but not RepA–pRBR binding, is necessary for single-stranded DNA production and efficient rolling circle replication.

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