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PII: S0168-1702(17)30438-0
DOI: http://dx.doi.org/10.1016/j.virusres.2017.08.007
Reference: VIRUS 97217

To appear in: *Virus Research*

Received date: 25-5-2017
Revised date: 11-7-2017
Accepted date: 17-8-2017

Please cite this article as: Fontenele, Rafaela S., Lamas, Natalia S., Lacorte, Cristiano, Lacerda, Ana Luiza M., Varsani, Arvind, Ribeiro, Simone G., A novel geminivirus identified in tomato and cleome plants sampled in Brazil.Virus Research http://dx.doi.org/10.1016/j.virusres.2017.08.007

# A novel geminivirus identified in tomato and cleome plants sampled in Brazil

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Highlights

- Identifiction of a novel geminivirus in tomato and cleome in Brazil
- First non-begomovirus geminivirus identified in Brazil
- Novel geminivirus shares~61-63% genome wide identity with those of capulaviruses

**Abstract**

Viruses in the family *Geminiviridae* have single-stranded DNA genomes encapsulated in geminate icosahedral particles. High throughput sequencing (HTS) for metagenomic approaches are being extensively used for the identification of known and novel viruses. Using a HTS approach, we identified a novel geminivirus in tomato (*Solanum lycopersicum*) and *Cleome* sp. samples collected in the midwest region of Brazil. The genomes from the two samples share 99.96% identity and ~61-63% to genomes in the genus *Capulavirus*. The novel virus has been tentatively named tomato associated geminivirus 1 (TaGV1). No visual symptoms were observed in the field tomato plant or in the inoculated *Nicotiana benthamiana* where the virus established a systemic infection. The replication associated protein of TaGV1 is most similar to that encoded