RESUMO - VIROLOGIA VEGETAL

SINGLE STRANDED DNA VIRUSES ASSOCIATED WITH VANILLA CF. ODORATA IN BRAZIL

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In an effort to characterize the diversity of CRESS DNA viruses associated with plants from the Vanilla Active Germplasm Bank, leaves from six Vanilla cf. odorata plants were collected. Total DNA was extracted, followed by ssDNA amplification using rolling circle amplification (RCA), and the amplified products were sequenced using Oxford Nanopore technology on a PromethION Solo device. Among the six plants analyzed, three were found to harbor genomoviruses and other unclassified CRESS DNA viruses. Within the family

Genomoviridae, species demarcation analyses identified two novel candidate species belonging to the genus Gemyduguivirus, named Vanilla associated genomovirus 1 (VaGV1) and Vanilla associated genomovirus 2 (VaGV2), and one novel candidate species of the genus Gemykibivirus, designated Vanilla associated genomovirus 3 (VaGV3). In addition, the previously described Capybara genomovirus 2 (CapGV2) was detected in one sample. Three additional unclassified CRESS DNA viruses were also identified: the known Capybara virus 1 (CapV1) and two novel viruses, Vanilla associated virus 1 (VaV1) and Vanilla associated virus 2 (VaV2). These viruses encode capsid and replication proteins, while VaV2 also contains additional hypothetical proteins. Phylogenetic analysis of the replication protein revealed two distinct and well-supported clades. CapV1 and VaV1 grouped with other unclassified CRESS DNA viruses, whereas VaV2 clustered with viruses related to the rendodovirus group. This study represents the first report of ssDNA viruses associated with Vanilla species and suggests that the diversity of CRESS DNA viruses infecting these plants may be substantially greater than currently recognized.

Palavras-chave: genomovirus; nanopore; cress dna virus.