



First report of grapevine Pinot gris virus in Lebanon and the Middle East

Raied Abou Kubaa¹ · Elia Choueiri² · Fouad Jreijiri² · Yara El Khoury³ · Pasquale Saldarelli¹

Received: 8 August 2019 / Accepted: 6 November 2019 / Published online: 12 November 2019
© Società Italiana di Patologia Vegetale (S.I.Pa.V.) 2019

Keywords Grapevine Pinot gris virus · GPGV · Lebanon · RT-PCR

Grapevine Pinot gris virus (GPGV) from the genus *Trichovirus*, family *Betaflexiviridae*, has been reported from several grape-growing regions of the world in asymptomatic and symptomatic vines showing leaf mottling and deformation (Saldarelli et al. 2017). A total of 108 grapevine samples representing 14 cultivars (Black Magic, Superior Seedless, Midnight Beauty, Black Pearl, Red Globe, Crimson, Vermentino, Marselan, Chardonnay, Petit Verdot, Cabernet Sauvignon, Merlot, Pinot noir, Syrah) were collected randomly from nine vineyards located in Bekaa Valley of Lebanon. Samples were analysed by RT-PCR for the presence of GPGV using two sets of primer pairs (DetF/DetR) targeting the movement protein (MP) and coat protein (CP) genes (Morelli et al. 2014) and primers (GPGVRepF/GPGVRepR) partially covering the RNA-dependent RNA polymerase (RdRp) domain of the GPGV replicase gene (Saldarelli et al. 2015). Results showed that two Black Magic and four Superior Seedless

table grape cultivars, and four Vermentino and four Marselan wine grape cultivars were infected with GPGV. None of the infected vines showed disease symptoms. Infection with GPGV was found in single or multiple infections with grapevine virus A and grapevine fleck virus. The last two viruses were found by DAS ELISA (Agritest, Italy). DNA fragments of the RdRp and MP/CP genes of the Lebanese GPGV isolate G7, from cultivar Superior Seedless, were cloned and sequenced. Sequences were deposited in GenBank as accession numbers MK201686 and MK201687. Analysis of the Lebanese GPGV sequences showed the C/T polymorphism in the stop codon of the MP gene that is associated with asymptomatic GPGV isolates (Saldarelli et al. 2015). This is the first detection of GPGV in Lebanon and the Middle East.

References

- Morelli M, de Moraes Catarino A, Susca L, Saldarelli P, Gualandri V, Martelli GP (2014) First report of grapevine pinot gris virus from table grapes in southern Italy. *J Plant Pathol* 96:439
- Saldarelli P, Gualandri V, Malossini U, Glasa M (2017) Grapevine Pinot gris virus. In: Meng B, Martelli GP, Golino DA, Fuchs M (eds) *Grapevine viruses: molecular biology, diagnostics and management*. Springer International Publishing, pp 351–363
- Saldarelli P, Giampetruzzi A, Morelli M, Malossini U, Pirolo C, Bianchedi P, Gualandri V (2015) Genetic variability of grapevine pinot gris virus and its association with grapevine leaf mottling and deformation. *Phytopathology* 105(4):555–563

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Raied Abou Kubaa
raied.aboukubaa@ipsp.cnr.it

¹ CNR Istituto per la Protezione Sostenibile delle Piante, via Amendola 122/D, 70126 Bari, Italy

² Department of Plant Protection, Lebanese Agricultural Research Institute, Tal Amara, P.O. Box 287, Zahlé, Lebanon

³ Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli Studi di Bari 'Aldo Moro', Via Amendola 165/A, 70126 Bari, Italy