



Product Information: DAS-ELISA

Grapevine leafroll-associated virus 3 (GLRaV-3)

GLRaV-3, an *Ampelovirus*, in the family *Closteroviridae*, is causing grapevine leafroll disease worldwide. All common cultivars (e.g. *Vitis vinifera*) as well as interspecific hybrids and rootstocks are infected, even though not all infected vines develop strong symptoms. Red-fruited cultivars typically show more pronounced symptoms (reddish in late summer and fall with main veins remaining green, and leaf rolling) than white-fruited cultivars. GLRaV-3 causes significant losses (affecting yield and quality). The virus is transmitted by grafting and also by insect vectors such as mealybugs (*Pseudococcidae*) and soft scales (*Coccidae*).

Specificity and sampling instruction

The DAS-ELISA reagents contain poly- and monoclonal antibodies developed against purified viruses of different isolates as well as a recombinant coat protein (1-5, 7, and P. Gugerli, *personal communication*) of GLRaV-3. The mixture of these selected antibodies allows a broad-spectrum detection of all scientifically recognized and published isolates so far, notably isolates of genetic variant groups I, II, III and VI, including recently published serologically distinct isolates in New Zealand (e.g. NZ1, NZ2, NZ1-VM). These broad-spectrum ELISA reagents have been extensively tested with virus collections from New Zealand, South Africa, Switzerland, and USA.

The DAS-ELISA technique is an efficient method for detecting leafroll viruses in grapevine. However, the concentration of GLRaV-3 in grapevine tissue is irregular; it varies according to tissue source and time of the year. Well-developed mature leaves, especially petioles and veins, from the lower part late in the growing season as well as bark (phloem) scrapings from mature canes, are the most ideal tissue sources (6). Due to the uneven distribution of the virus in plants, it is advised to take several subsamples from different canes. The special extraction buffer "Grapevine" (0.2 M TRIS, pH 8.2) is used.

The product was developed in cooperation with Agroscope Nyon Switzerland, ARC-Plant Protection Research Institute (PPRI) Pretoria South Africa, Cornell University NYSAES Geneva USA, and New Zealand Institute for Plant & Food Research Ltd, Auckland New Zealand.

References

- (1) Gugerli, P., Brugger, J.-J., and Bovey, R. 1984. Rev. suisse Vitic. Arboric. Hortic. 16:299-304.
- (2) Hu, J.S., and Gonsalves, D., Boscia, D., and Namba, S. 1990. Phytopathology 80:920-925.
- (3) Hu, J.S., Gonsalves, D., and Teliz, D. 1990. J. Phytopathology 128:1-14.
- (4) Ling, K.S., Zhu, H.Y., Jiang, Z.Y., McFerson, J.R., and Gonsalves, D. 1997. 12th Meeting ICVG, Lisbon, Portugal, 29 September-2 October 1997, p. 89.
- (5) Rosciglione, B., and Gugerli, P. 1986. Rev. suisse Vitic. Arboric. Hortic. 18:207-211.
- (6) Teliz, D., Tanne, E., Gonsalves, D., and Zee, F. 1987. Plant Dis. 71 :704-709.
- (7) Zee, F., Gonsalves, D., Goheen, A., Kim, K.S., Pool, R., and Lee, R.F. 1987. Phytopathology 77:1427-1434.

Ordering Information

Pathogen	Abbr.	Art. No.	Reagent form	Size	Assays
Grapevine leafroll-assoc. virus 3 coating IgG: polyclonal/monoclonal conjugate: polyclonal/monoclonal	GLRaV-3	122312	IgG	0.2 ml	1000
		122322	Conjugate	0.2 ml	1000
		122315	IgG	0.1 ml	500
		122325	Conjugate	0.1 ml	500
		122353	Positive control	2.5 ml	12
		180043	Negative control	2.5 ml	12
		122362	Reagent set 960		960
		122365	Reagent set 480		480
		122372	Complete kit 960		960
		122375	Complete kit 480		480

Reagent sets contain: IgG and conjugate, positive and negative controls, and microtiter plates (F-96) for 480 or 960 tests, respectively, for a working volume of 200 µl/test/well.

Complete kits contain: All reagents, controls, microtiter plates (F-96), buffers, and substrate necessary to perform 480 or 960 tests, respectively, for a working volume of 200 µl/test/well.

All buffers as well as equipment for sample preparation and disposables are also available.

For ordering, prices, and further information on any other product from BIOREBA, please contact your local distributor (see www.bioreba.com) or our office in Switzerland.