Product Information: DAS-ELISA

Arabis mosaic virus and Grapevine fanleaf virus (ArMV+GFLV)

ArMV (3,4) has a wide host range, infects the seed of many host plants, and is transmitted by the nematode *Xiphinema diversicaudatum*. The virus causes diseases in many crops such as grapevine, raspberry, strawberry, hop, rose, elderberry, cucumber, lettuce, celery, forsythia, and rhubarb etc. ArMV is more prevalent in Europe than in other continents. GFLV (3,4) is a grapevine pathogen and is spread by infected propagative material and by *Xiphinema index*. It is occurring worldwide wherever *Vitis vinifera* and hybrid rootstocks of grapevine are grown. Different biological strains of the virus cause fanleaf (malformation of leaves and canes) and yellow mosaic diseases of grapevine. Yellowing is most prominent in spring, fading away as the season progresses (heat masking). Crop losses range from moderate to very high according to the virulence of the virus strain and varietal susceptibility. Fruit quality is also affected.

Specificity and sampling instruction

These reagents allow the detection of both Nepoviruses ArMV and GFLV in a single test (format DAS-ELISA), recognizing all isolates irrespective of biological strain. The reagents contain a mixture of antibodies to a grapevine isolate of ArMV (P. Gugerli, personal communication) and to an isolate of GFLV from Canada (Vineland Research Station, Ontario; P. Ellis, personal communication). The coating reagent consists of poly- and monoclonal antibodies, the AP-conjugated antibodies are monoclonal. The ELISA technique is an efficient method for the detection of these viruses in grapevine. However, the virus concentration varies considerably according to the tissue source, the meteorological conditions and thus, the time of the season. These facts have to be considered for obtaining reliable test results. For testing grapevine, a special extraction buffer «Grapevine» (Art. No. 110123) (2, modified) is used at a ratio of 1:10 (w/v); for other plants, the extraction buffer «General» (Art. No. 110120) is used at a ratio of 1:20 (w/v). In grapevines, leaves from young shoots and juicy bark early in the growing season as well as bark (phloem) scrapings from mature canes during dormancy are recommended.

This product has been developed in cooperation with Agroscope, the Swiss centre of excellence for research in the agriculture and food sector; and Phyto Diagnostics Company Limited, North Saanich, BC, Canada.

Information on the antibodies

Coating IgG: poly- and monoclonal; conjugate: monoclonal

References

(1) Clark, M.F., and Adams, A.N. 1977. J. gen. Virol. 34 : 475-483.

(2) Gugerli, P. 1986. In H.U. Bergmeyer : Methods of Enz. Analysis. Vol. XI, pp. 474-481.

(3) Martelli, G.P., Walter, B., and Pinck, L. 2001. Descriptons of plant viruses. No. 385. CMI/AAB.

(4) Murant, A.F. 1970. Descriptons of plant viruses. No. 16. CMI/AAB. 5 pp.

Ordering Information

BIOREBA offers the following formats:

Individual ELISA reagents for 100, 500 or 1000 assays: IgG and/or conjugate for the working volume of 200 µl/test/well.

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

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

ELISA buffers, equipment for sample preparation and disposables are also available.

For all Art. No. please refer to our product catalogue or our homepage www.bioreba.com and for prices and further information on any other product from BIOREBA, please contact your local distributor or our office in Switzerland.

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Version: 4 - 29.07.2025
Adaptations from last version: changed assays of individual ELISA reagents.

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