



Product Information: DAS-ELISA Soybean Mosaic Virus (SMV)

SMV, a potyvirus, can cause significant damage in soybean, and it is present in all soybean growing areas worldwide as a consequence of its seed transmissibility. The virus has a very narrow host range apart from soybean (1). Yield losses over 80% were reported in uniformly infected field plots. SMV is naturally transmitted by a number of aphid species in a non-persistent manner and via infected seeds. Foliar symptoms vary from moderate to severe leaf mottling, distortion of leaves, necrosis and overall stunting and occasionally death of the infected plants. Seeds derived from the infected plants often exhibit mottling (1). Seed transmission varies depending upon the genotype of virus-soybean involved and is ranging from 5% to 75%.

Specificity and sampling instruction

Polyclonal antibodies were raised against a recombinant coat protein of SMV (2). For testing leaves, samples are homogenised 1:20 (w/v) in extraction buffer «General» (Art. No. 110120). For testing seeds, samples are soaked overnight in extraction buffer «General» 1:25 (w/v) and then homogenized the next day. The validation was done using a number of distinct strains of SMV from soybean (3) where all were detected. The product can also detect a strain infecting passion fruit collected in Columbia (4).

Depending on the plant species analyzed, the antibodies might show cross-reactivity with other potyviruses capable of infecting this host. We observed cross-reactivity with the following potyviruses: Potato virus Y (PVY), Leek yellow stripe virus (LYSV), Watermelon mosaic 2 virus (WMV-2), Zucchini yellow mosaic virus (ZYMV), Bean common mosaic virus (BCMV) and Bean common mosaic necrosis (BCMNV). The product was developed in cooperation with the Humboldt University Berlin, Germany.

Information on the antibodies

Coating IgG: polyclonal; conjugate: polyclonal

References

- (1) M.R. Hajimorad, L.L. Domier, S.A. Tolin, S.A. Whitham and M.A. Saghai Maroof. 2017. Molecular Plant Pathology Doi. 1111/mpp.12644.
- (2) Y. Wang, B. Khatabi and M. R. Hajimorad. 2015. Molecular Plant Pathology. 16(3), 301–307.
- (3) B. Khatabi, Q.L. Fajolu, R.-H. Wen and M.R. Hajimorad. 2012. Molecular Plant Pathology. 13(9), 1077-1088.
- (4) J. Cutler, J. Langer, S. von Bargen, O. Acosta-Losada, F. Casierra-Posada, A. Castañeda-Cárdenas, M. Betancourt-Vásquez, W. Cuellar, E. Arvydas-Stasiukynas, D. Altenbach and C. Büttner. 2018. Revista Colombiana de Ciencias Hortícolas - Vol. 12 - No. 2 - pp. 390-396, mayo-agosto 2018.

Ordering Information

BIOREBA offers the following formats:

Individual ELISA reagents for 96, 480 or 960 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: 3 - 18.12.2020: Additional information about seed extraction.