Product Information: DAS-ELISA

Xanthomonas fragariae (Xfr)

Xanthomonas fragariae (2,4), is the causal agent of bacterial angular leaf spot of strawberry. The bacterium is an insidious and potentially serious disease which was first reported in USA. It was later described in New Zealand, Australia, a few Asiatic and African countries and in most European countries where strawberry is cultivated. The disease is widespread on nurseries in many countries and has been responsible for important production losses in Europe. *X. fragariae* is easily transmitted via asymptomatic plants with latent infections and international movement of latently infected plants is blamed for the introduction of *X. fragariae* from one to an other country. The pathogen spreads from plants harvested in contaminated nurseries. Symptoms appear under favourable conditions as well as after cold storage.

Specificity and sampling instruction

The reagent was made against the isolate Xfr 184.2 (E. Bosshard, *unpublished).* All isolates of Xfr tested so far can be detected to a concentration of $5x10^3$ to 10^4 per ml (diluting bacteria from pure culture in extraction buffer) in DAS-ELISA (1). This detection limit is nearly reached when bacteria are diluted in sap of healthy strawberry plants. There are cross-reactions with some related bacteria of the *Xanthomonas*, especially with *X. arboricola* pv. *fragariae, X. campestris* pv. *pelargonii (Xcp),* and to a lower extent (only at concentrations of 10^7 and higher) with *X. c.* pv. *begoniae*, and *X. c.* pv. *pruni*. No cross-reaction was observed with *X. c.* pv. *campestris, X. c.* pv. *phaseoli, Erwinia herbicola, Pseudomonas syringae, Erwinia carotovora* subsp. *carotovora* and some unidentified saprophytic bacteria. Due to its high sensitivity, the reagent is very suitable for a first screening for indexing strawberry plants grown in soil or *in vitro*. However, we strongly recommend to confirm positive results with an independent method such as PCR (3,4,5). Best results in ELISA are obtained with an 1:10 (w/v) plant tissue extration with extraction buffer «General» (Art. No. 110120).

This product has been developed in cooperation with Agroscope, the Swiss centre of excellence for research in the agriculture and food sector. The development was partially supported by Häberli Obst- und Beerenzentrum AG, Neukirch-Egnach, Switzerland.

Information on the antibodies

Coating IgG: polyclonal; conjugate: polyclonal

References

(1) Clark, M.F., and Adams, A. N. 1977. J. gen. Virol. 34:475-483.
(2) Kennedy, B. W., and King T.H.. 1962. Plant Dis. Rep. 46:360–363.
(3) Pooler, M.R., Ritchie, D.F., and Hartung, J.S. 1996. Applied and Environmental Microbiology 62(9):3121-3127.
(4) Roberts, P.D., Jones, J.B., Chandler, C.K., Stall, R.E., and Berger, R.D. 1996. Plant Disease 80:1283-1288.
(5) Zimmermann, C., Hinrichs-Berger, J., Moltmann, E., and Buchenauer, H. 2004. J. of Plant Diseases and Protection 111(1):39-51.

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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