

**ANOGEN - A Division of YES Biotech Laboratories Ltd.**

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Pathogen :

GLRaV-1 Grapevine Leaf Roll associated Virus -1
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Test format :**DAS-ELISA (alkaline phosphatase)****Catalogue number :****PSS10001****REAGENT**

	Coating Ab	AP-Conjugate Ab
Batch	90301	90302
Type	Mouse Monoclonal	Mouse Monoclonal
Dilution	1/100	1/100
Format	PBS / Glycerol 50%	PBS / Glycerol 50%
Storage temperature	-20°C	-20°C
Use by		

Number of tests	500
Volume per bottle of Coating Ab*	500 µL
Volume per bottle of Conjugate Ab*	500 µL

* Volume based on a test performed with 100 µl per well. 1 test = 1 well

QUALITY CONTROL

Value of ELISA responses (OD 405 nm)*	Positive Control	Negative Control
		0.84

* ELISA responses were measured after 60 min incubation of substrate (pNPP) at +37°C.



CHARACTERISTICS OF THE DISEASE

The Grapevine LeafRoll associated Virus-1 (**GLRaV-1**) is one of the closterovirus inducing grapevine leafroll disease. Grapevine LeafRoll is one the most important diseases of grapevines and occurs world-wide. Disease symptoms are those typically induced by viruses that multiply in the phloem and affect its function. Leaves are thicker than normal, brittle, with margins rolled downwards and discoloured, i.e., yellowish in white-berried cultivars. A great variability in symptom expression is commonly observed in the field, symptomatological variants being probably determined by different viral responses.

Closteroviruses are the major agents of leafroll disease. Nine serologically distinct viruses have been identified so far in leafroll-affected grapevines. Although all of these viruses continue to be called Grapevine Leafroll associated Virus, GLRaVs, there is experimental evidence that some of them (GLRaV-1, -2 and -3) induce leafroll-type responses in vines infected by grafting or vectors. This led to the suggestion that the word "associated" be dropped from the name of the first three GLRaVs of the series. All these closteroviruses possess particles with a length ranging from 1,400 to 2,200 nm. All grapevine closteroviruses are spread primarily by propagation material but two of them (GLRaV-3 and probably GLRaV-2) are transmitted by pseudococcid mealybugs and scale insects. The vectors of GLRaV-3 are *Planococcus ficus*, *Pseudococcus longispinus*, *Ps. Affinis*, *Ps. calceolariae* and *Pulvinaria vitis*; whereas the vectors of GLRaV-2 have been suggested to be *Ps. Longispinus* and *Ps. Affinis*.

The serological diagnostic tests can be realised using old leaves or on woody stick all the year.

MORE INFORMATION

Seddas, A. et al., 2000. A monoclonal antibody reveals that grapevine leafroll associated closteroviruses 1 and 3 are serologically related. *Plant pathology*, 49, 80-85

Walter B., 1997. Sanitary selection of the grapevine : Protocols for the detection of viruses and virus-like diseases. *Les Colloques INRA Editions*, 86, 225 p.

Walter B. et Martelli GP., 1997. Clonal and sanitary selection of the grapevine. In Walter B., ed. Sanitary Selection of the grapevine. Paris, France-INRA, 43-96.

Habili N. et al., 1996. Virus types associated with grapevine leafroll disease in Australia., *Annual Technical Issue of Australian Grapegrower & Winemaker*, 25-28.

Van Regenmortel M.H.V. et Dubs MC., 1993. Serological procedures. In Matthews REF, ed. Diagnosis of Plant Virus Diseases. London, UK, 159-214.

Zimmermann D. et al., 1990a. Characterization and serological detection of four closterovirus particles associated with leafroll disease on grapevine., *J. Phytopath.*, 130, 205-218.

Zimmermann D. et al., 1990b. Production and characterization of monoclonal antibodies specific to closterovirus-like particles associated with grapevine leafroll disease., *J. Phytopath.*, 130, 277-288.

Zimmermann D. et al., 1988. Purification des particules virales associées à l'enroulement de la vigne et mise au point d'un protocole ELISA permettant leur détection., *Agronomie*, 8 (8), 731-741.

Van Regenmortel M., 1982. Serology and Immunochemistry of Plant Viruses., *Academic Press*, 302.