



Leibniz Institute
DSMZ-German Collection
of Microorganisms
and Cell Cultures GmbH

PLANT VIRUS DIAGNOSTICS CATALOGUE

2024



Images on front cover

center: severely stunted zucchini plant infected with *Tomato leaf curl New Delhi virus* (ToLCNDV)

bottom left: symptomatic tomato fruits mixed infected with *Tomato brown rugose fruit virus* (ToBRFV) and *Pepino mosaic virus* (PepMV)

bottom right: rot of cassava storage roots caused by *Cassava brown streak virus* (CBSV)

Images on back cover

top left: *Echinacea* plant affected by a mixed infection of *Cucumber mosaic virus* (CMV) and *Broad bean wilt virus 1* (BBWV-1)

top center: zucchini plant displaying leaf and fruit symptoms due to a mixed infection with *Tomato leaf curl New Delhi virus* (ToLCNDV) and *Zucchini yellow mosaic virus* (ZYMV)

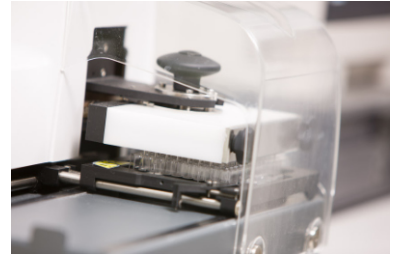
top right: *Eggplant mottled dwarf alphanucleorhabdovirus* (EMDV) causing flower breaking in *Hydrangea macrophylla*

The high quality diagnostic products and services offered by the Plant Virus Department of Leibniz-Institute DSMZ are based on more than 30 years of experience. Together with our continually improved quality management system, this guarantees our customers the highest level of satisfaction.

Enzyme-linked immunosorbent assay (ELISA) is still the most widely used method for large scale testing of plant viruses.

DSMZ offers about 250 high quality serological reagents and positive controls for routine ELISA detection of the most important viruses infecting agricultural and horticultural crops. The available diagnostic products are listed in alphabetic order in this catalogue.

Please use our online catalogue to check the availability of our wide range of infectious virus isolates which are not listed in this diagnostic catalogue.



ELISA sets (labelled as RT - recommended test)

- contain IgG and conjugate (IgG-AP) for **DAS-ELISA**
- contain IgG, Mab and RAM-AP for **TAS-ELISA**
- are optimized and provided for a **test volume of 200µl**



and are supplied as 100 test units (smallest unit) up to >1,000 test units.

ELISA controls

Plant virus materials for use as positive/negative controls in ELISA consist of freeze-dried homogenates of virus infected or healthy plants and are to be reconstituted in buffer prior to use. In some cases, desiccated leaf material may be provided as ELISA controls.

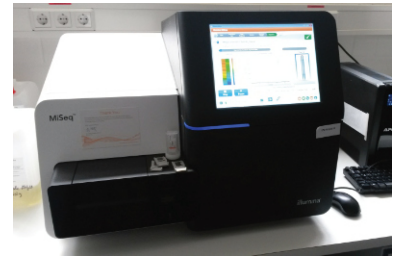


- Dissolve controls consisting of **freeze dried plant homogenate** in 2ml sample extraction buffer.
- Controls consisting of **freeze dried leaf material** have to be homogenized in sample extraction buffer (1:50 weight/volume) prior to use.

Our high throughput sequencing services to support plant health

High throughput sequencing (HTS) technologies offer unprecedented opportunities to reveal the phytosanitary status of a plant sample, without *a priori* knowledge of a particular organism.

The generation of high amounts of sequencing data allows a global profiling of samples on a large scale, with rapid results and at low costs.



We provide HTS services for analysis of plant samples on the basis of our profound laboratory competences covering all steps of a workflow - from DNA/RNA extraction, state of the art library preparation, sequencing on Illumina platforms and comprehensive bioinformatics analyses.

We offer support at every step including consultation on project planning, real-time updates on the process, fast delivery of results and post-analysis evaluation to support management decisions.

Our services enable:

- global analysis of the phytosanitary status of plants
- rapid and precise identification of pathogens
- discovery of novel or rare variants
- characterization of the genetic variation and population composition
- the safe movement and international exchange of nursery materials and elite propagation and breeding lines

For any further information about our services, please contact us at plantvirus@dsmz.de or directly contact our HTS and bioinformatics specialist Dr. Paolo Margaria at paolo.margaria@dsmz.de.



Virus species for which ELISA antisera sets and the respective controls are available are listed below in alphabetic order. Antisera and controls always need to be ordered separately. Our webshop offers a convenient way to place your orders and helps to process your orders as fast as possible: www.dsmz.de/catalogues/catalogue-plant-viruses-and-antisera.html.

Please use our online catalogue also to check the availability of our wide range of infectious virus isolates which are not listed in this diagnostic catalogue.

For better readability, the new Latinized binominal virus nomenclature is not used.

African cassava mosaic virus (ACMV)

see cassava mosaic geminiviruses

Agropyron mosaic virus (AgMV, Rymovirus)

DAS-ELISA	RT-0729
Positive control	PC-0729
Negative control	NC-0729

Alfalfa mosaic virus (AMV, Alfamovirus)

DAS-ELISA	RT-0779
Positive control	PC-0779
Negative control	NC-0779

Alstroemeria mosaic virus (AIMV, Potyvirus)

DAS-ELISA	RT-0121
Positive control	PC-0328
Negative control	NC-0328

Alternanthera mosaic virus (AltMV, Potexvirus)

DAS-ELISA	RT-0725
Positive control	PC-0725
Negative control	NC-0725

Andean potato latent virus (APLV, Tymovirus)

Detection of APLV-Col/Col-2 isolates and

Andean potato mild mosaic virus (APMMV)

(formerly recognized as APLV-Hu isolates).

Cross reaction with *Eggplant mosaic virus (EMV)*

DAS-ELISA

Positive control

Negative control

Positive control

RT-0978

PC-0060

NC-0061

PC-1149

Note: In accordance with Council Regulation (EC) No 428/2009 (and following amendments), APLV/APMMV isolates and positive controls will not be shipped outside EU countries.

Please use *Eggplant mosaic virus (EMV)* positive control PC-1149 instead.

Andean potato mild mosaic virus (APMMV,*Tymovirus)*see *Andean potato latent virus (APLV)****Andean potato mottle virus (APMoV, Comovirus)***

Detection of ApMoV strains B, C, H.

DAS-ELISA

Positive control

Negative control

RT-0005

PC-0057

NC-0057

Angelonia flower break virus (AFBV, Carmovirus)

DAS-ELISA

Positive control

Negative control

RT-0858

PC-0858

NC-0858

Apium virus Y (ApVY, Potyvirus)

DAS-ELISA

Positive control

Negative control

RT-1001

PC-1001

NC-1001

Arabidopsis mosaic virus (ArMV, Nepovirus)

DAS-ELISA

Positive control

Negative control

RT-0008

PC-0045

NC-0045

Arracacha virus B (AVB, Cheravirus)

DAS-ELISA

Positive control

Negative control

RT-0009

PC-0082

NC-0082

Asparagus virus 1 (AV-1, Potyvirus)

DAS-ELISA

RT-0954

Positive control

PC-0954

Negative control

NC-0954

Asparagus virus 2 (AV-2, Ilarvirus)

TAS-ELISA

RT-0953-0645/1

Positive control

PC-0953

Negative control

NC-0953

Bacopa chlorosis virus (BaCV, Ilarvirus)

DAS-ELISA

RT-0991

Positive control

PC-0991

Negative control

NC-0991

Banana *Xanthomonas* / bacterial wilt (BXW)see *Xanthomonas vasicola* pv. *musacearum* (Xvm)***Banana streak Mysore virus (BSMysV, Badnavirus)***

DAS-ELISA

RT-1049

Positive control

PC-1049

Negative control

NC-1049

Banana streak OL virus (BSOLV, Badnavirus)

TAS-ELISA

RT-0986-0492/31

Positive control

PC-0492

Negative control

NC-0492

Barley mild mosaic virus (BaMMV, Bymovirus)

DAS-ELISA

RT-0139

Positive control

PC-0329

Negative control

NC-0329

Barley stripe mosaic virus (BSMV, Hordeivirus)

DAS-ELISA

RT-0135

Positive control

PC-0330

Negative control

NC-0330

Barley yellow mosaic virus (BaYMV, Bymovirus)

DAS-ELISA

RT-0922

Positive control

PC-0634

Negative control

NC-0634

**Bean common mosaic necrosis virus
(BCMNV, Potyvirus)**

DAS-ELISA

RT-0239

Positive control

PC-0413

Negative control

NC-0413

Bean common mosaic virus (BCMV, Potyvirus)

TAS-ELISA

RT-0915-0228/1

Positive control

PC-0463

Negative control

NC-0463

Bean golden yellow mosaic virus (BGYMV, Begomovirus)

TAS-ELISA

RT-0616-0616/2

Positive control

PC-0094

Negative control

NC-0094

Bean leaf roll virus (BLRV, Luteovirus)

TAS-ELISA

RT-0142-0227/2

Positive control

PC-0331

Negative control

NC-0331

Bean yellow mosaic virus (BYMV, Potyvirus)

DAS-ELISA

RT-0717

Positive control

PC-0717

Negative control

NC-0717

Beet black scorch virus (BBSV, Betanecrovirus)

DAS-ELISA

RT-0951

Positive control

PC-0951

Negative control

NC-0951

Beet chlorosis virus (BChV, Polerovirus) and
Beet mild yellowing virus (BMV, Polerovirus)
can be reliably detected with our
Beet western yellows virus (BWYV) ELISA.

Positive control

PC-1211

Positive control

PC-1210

Beet mosaic virus (BtMV, Potyvirus)

DAS-ELISA

RT-0143

Positive control

PC-0791

Negative control

NC-0791

Beet necrotic yellow vein virus (BNYVV, Benyvirus)

Weak cross reaction with BSBMV.

DAS-ELISA

RT-0737

Positive control

PC-0467

Negative control

NC-0467

Beet soil-borne mosaic virus (BSBMV, Benyvirus)

DAS-ELISA

RT-1035

Positive control

PC-1035

Negative control

NC-1035

Beet soil-borne virus (BSBV, Pomovirus)

Weak cross reaction with BVQ observed.

TAS-ELISA

RT-0576-0576/2

Positive control

PC-0576

Negative control

NC-0576

Beet western yellows virus (BWYV, Polerovirus)Test also detects *Turnip yellows virus* (TuYV),*Beet mild yellowing virus* (BMV) and*Beet chlorosis virus* (BChV).

TAS-ELISA

RT-0049-0049/1

Positive control

PC-1209

Positive control

PC-1210

Positive control

PC-1211

Negative control

NC-1209

Beet yellows virus (BYV, Closterovirus)

DAS-ELISA

RT-0185

Positive control

PC-0981

Negative control

NC-0981

Belladonna mottle virus (BeMV, Tymovirus)

DAS-ELISA

RT-0179

Positive control

PC-0042

Negative control

NC-0042

Bell pepper mottle virus (BPeMV, Tobamovirus)

Indication for weak cross reaction with other tobamoviruses.

DAS-ELISA

RT-0244

Positive control

PC-0170

Negative control

NC-0170

Broad bean true mosaic virus (BBTMV, Comovirus)

DAS-ELISA

RT-0152

Positive control

PC-0098

Negative control

NC-0098

Broad bean wilt virus 1 (BBWV-1, Fabavirus)

DAS-ELISA

RT-0548

Positive control

PC-1086

Negative control

NC-1086

Broad bean wilt virus 2 (BBWV-2, Fabavirus)

DAS-ELISA

RT-0862

Positive control

PC-0862

Negative control

NC-0862

Brome mosaic virus (BMV, Bromovirus)

DAS-ELISA

RT-1040

Positive control

PC-0178

Negative control

NC-0178

Brome streak mosaic virus (BrSMV, Tritimovirus)

DAS-ELISA

RT-0932

Positive control

PC-1052

Negative control

NC-1052

Calibrachoa mottle virus (CbMV, Carmovirus)

DAS-ELISA

RT-0611

Positive control

PC-0611

Negative control

NC-0611

Capsicum chlorosis virus (CaCV, Orthotospovirus)

DAS-ELISA

RT-0864

Positive control

PC-0864

Negative control

NC-0864

Carnation Italian ringspot virus (CIRV, Tombusvirus)

DAS-ELISA

RT-0147

Positive control

PC-0069

Negative control

NC-0069

Carnation mottle virus (CarMV, Carmovirus)

DAS-ELISA

RT-0878

Positive control

PC-0878

Negative control

NC-0878

Carnation ringspot virus (CRSV, Dianthovirus)

DAS-ELISA

RT-0202

Positive control

PC-0097

Negative control

NC-0097

Carnation vein mottle virus (CVMoV, Potyvirus)

DAS-ELISA

RT-0088

Positive control

PC-0251

Negative control

NC-0251

Carrot necrotic dieback virus (CNDV, Sequivirus)

DAS-ELISA

RT-0977

Positive control

PC-0977

Negative control

NC-0977

Carrot virus Y (CarVY, Potyvirus)

DAS-ELISA

RT-0759

Positive control

PC-0759

Negative control

NC-0759

Carrot thin leaf virus (CTLV, Potyvirus)

DAS-ELISA

RT-1005

Positive control

PC-1005

Negative control

NC-1005

Cauliflower mosaic virus (CaMV, Caulimovirus)

DAS-ELISA

RT-0206

Positive control

PC-0229

Negative control

NC-0229

Cassava brown streak disease (CBSD)

General detection of isolates and strains of CBSV and UCBSV.

TAS-ELISA

Positive control

Negative control

RT-1153-1153/1

PC-0925

NC-0925

Cassava brown streak virus (CBSV, Ipomovirus)

see cassava brown streak disease (CBSD)

Cassava common mosaic virus (CsCMV, Potexvirus)

DAS-ELISA

Positive control

Negative control

RT-0723

PC-0723

NC-0723

Cassava mosaic geminiviruses***African cassava mosaic virus (ACMV, Begomovirus)***

Detection of ACMV and EACMV.

TAS-ELISA

Positive control

Negative control

RT-0421-0421/2

PC-0421

NC-0421

Sri Lankan cassava mosaic virus (SLCMV, Begomovirus)

TAS-ELISA

Positive control

Negative control

RT-0424-0424/1

PC-0424

NC-0424

Cassava Congo Sequivirus

DAS-ELISA

Positive control

Negative control

RT-0896

PC-0896

NC-0896

Celery mosaic virus (CeMV, Potyvirus)

DAS-ELISA

Positive control

Negative control

RT-0148

PC-0294

NC-0294

Cherry leaf roll virus (CLRV, Nepovirus)

DAS-ELISA

Positive control

Negative control

RT-0149

PC-0797

NC-0797

Chilli veinal mottle virus (ChiVMV, Potyvirus)

DAS-ELISA

RT-0122

Positive control

PC-0255

Negative control

NC-0255

Chrysanthemum stem necrosis virus***(CSNV, Orthotospovirus)***

Possible weak cross reaction with TSWV, TCSV and ANSV.

DAS-ELISA

RT-0529

Positive control

PC-0529

Negative control

NC-0529

Citrus tristeza virus (CTV, Closterovirus)

DAS-ELISA

RT-0988

Positive control

PC-0332

Negative control

NC-0332

Clover yellow mosaic virus (CIYMV, Potexvirus)

DAS-ELISA

RT-0589

Positive control

PC-0851

Negative control

NC-0851

Clover yellow vein virus (CIYVV, Potyvirus)

Cross reaction with SMV.

DAS-ELISA

RT-0243

Positive control

PC-0367

Negative control

NC-0367

Cocksfoot mild mosaic virus (CMMV, Sobemovirus)

DAS-ELISA

RT-0151

Positive control

PC-0333

Negative control

NC-0333

Cocksfoot mottle virus (CoMV, Sobemovirus)

DAS-ELISA

RT-0727

Positive control

PC-0727

Negative control

NC-0727

Cocksfoot streak virus (CSV, Potyvirus)

DAS-ELISA

RT-0933

Positive control

PC-1331

Negative control

NC-0933

Cowpea aphid-borne mosaic virus
(**CABMV**, *Potyvirus*)

DAS-ELISA RT-0417
Positive control PC-0396
Negative control NC-0396

Cowpea mild mottle virus (**CPMMV**, *Carlavirus*)

DAS-ELISA RT-0907
Positive control PC-0907
Negative control NC-0907

Cowpea mosaic virus (**CPMV**, *Comovirus*)

DAS-ELISA RT-0012
Positive control PC-0074
Negative control NC-0074

Cowpea mottle virus (**CPMoV**, *Carmovirus*)

DAS-ELISA RT-0212
Positive control PC-0263
Negative control NC-0263

Cowpea yellow mosaic virus (**CPYMV**, *Comovirus*)
(Regarded as an isolate of *Cowpea mosaic virus*.)

DAS-ELISA RT-0508
Positive control PC-0477
Negative control NC-0477

Cucumber Bulgarian latent virus (**CBLV**, *Tombusvirus*)

DAS-ELISA RT-1077
Positive control PC-1077
Negative control NC-1077

Cucumber green mottle mosaic virus
(**CGMMV**, *Tobamovirus*)

DAS-ELISA RT-0190
Positive control PC-0375
Negative control NC-0375

Cucumber leaf spot virus (**CLSV**, *Aureusvirus*)

DAS-ELISA RT-0880
Positive control PC-0880
Negative control NC-0880

Cucumber mosaic virus (CMV, Cucumovirus)

DAS-ELISA

RT-0929

Positive control

PC-0929

Negative control

NC-0929

Cucumber necrosis virus (CNV, Tombusvirus)

DAS-ELISA

RT-0130

Positive control

PC-0313

Negative control

NC-0313

Cucurbit aphid-borne yellows virus (CABYV, Polerovirus)

Possible cross reaction with PABYV.

TAS-ELISA

RT-1017-1017/1

Positive control

PC-1017

Negative control

NC-1017

Cucurbit chlorotic yellows virus (CCYV, Crinivirus)

DAS-ELISA

RT-1020

Positive control

PC-1020

Negative control

NC-1020

Cucurbit yellow stunting disorder virus (CYSDV, Crinivirus)

DAS-ELISA

RT-0591

Positive control

PC-1144

Negative control

NC-1144

Cymbidium mosaic virus (CymMV, Potexvirus)

DAS-ELISA

RT-0334

Positive control

PC-0334

Negative control

NC-0334

Cymbidium ringspot virus (CymRSV, Tombusvirus)

DAS-ELISA

RT-0100

Positive control

PC-0272

Negative control

NC-0272

Cynosurus mottle virus (CnMoV, Sobemovirus)

DAS-ELISA

RT-0728

Positive control

PC-0728

Negative control

NC-0728

East African cassava mosaic virus (EACMV, Begomovirus)

see cassava mosaic geminiviruses

Eggplant mosaic virus (EMV, Tymovirus)

see Andean potato latent virus (APLV)

Eggplant mottled dwarf virus

(EMDV, Nucleorhabdovirus)

Positive control

PC-1149

DAS-ELISA

RT-0836

Positive control

PC-0031

Negative control

NC-0031

Endive necrotic mosaic virus (ENMV, Potyvirus)

DAS-ELISA

RT-0753

Positive control

PC-0754

Negative control

NC-0754

Erysimum latent virus (ErLV, Tymovirus)

DAS-ELISA

RT-1439

Positive control

PC-1433

Negative control

NC-1433

NEW !

Garlic common latent virus (GarCLV, Carlavirus)

DAS-ELISA

RT-0230

Positive control

PC-0449

Negative control

NC-0449

Garlic virus A (GarV-A, Allexivirus)

DAS-ELISA

RT-0618

Positive control

PC-1345

Negative control

NC-0618

Garlic virus B (GarV-B, Allexivirus)

Cross reaction with *Garlic virus A*.

DAS-ELISA

RT-0619

Positive control

PC-0619

Negative control

NC-0619

Garlic virus C (GarV-C, Alllexivirus)Cross reaction with *Garlic Virus A*.

DAS-ELISA

RT-0620

Positive control

PC-0620

Negative control

NC-0620

Grapevine Algerian latent virus (GALV, Tombusvirus)

DAS-ELISA

RT-0788

Positive control

PC-0788

Negative control

NC-0788

Grapevine fanleaf virus (GFLV, Nepovirus)

DAS-ELISA

RT-0205

Positive control

PC-0084

Negative control

NC-0084

Groundnut ringspot virus (GRSV, Tospovirus)

DAS-ELISA

RT-0781

Positive control

PC-0205

Negative control

NC-0205

Helenium virus S (HVS, Carlavirus)

DAS-ELISA

RT-0153

Positive control

PC-0336

Negative control

NC-0336

Impatiens necrotic spot virus (INSV, Orthotospovirus)

TAS-ELISA

RT-0115-0117/1

Positive control

PC-0281

Negative control

NC-0281

Iris yellow spot virus (IYSV, Orthotospovirus)

DAS-ELISA

RT-0528

Positive control

PC-0528

Negative control

NC-0528

***Johnsongrass chlorotic stripe mosaic virus
(JCSMV, Aureusvirus)***

DAS-ELISA

RT-0605

Positive control

PC-0605

Negative control

NC-0605

Johnsongrass mosaic virus (JGMV, Potyvirus)

DAS-ELISA

RT-0197

Positive control

PC-0803

Negative control

NC-0803

Leek yellow stripe virus (LYSV, Potyvirus)

DAS-ELISA

RT-0225

Positive control

PC-0451

Negative control

NC-0451

Lettuce mosaic virus (LMV, Potyvirus)

DAS-ELISA

RT-0886

Positive control

PC-0465

Negative control

NC-0465

Lettuce ring necrosis virus (LRNV, Ophiovirus)

DAS-ELISA

RT-0983

Positive control

PC-0983

Negative control

NC-0983

Lettuce virus X (LeVX, Potexvirus)

DAS-ELISA

RT-0904

Positive control

PC-0904

Negative control

NC-0904

Maize chlorotic mottle virus (MCMV, Machlomovirus)

DAS-ELISA

RT-1087

Positive control

PC-1087

Negative control

NC-1087

Maize dwarf mosaic virus (MDMV, Potyvirus)

TAS-ELISA

RT-0519-0662/2

Positive control

PC-0802

Negative control

NC-0802

Melon necrotic spot virus (MNSV, Carmovirus)

DAS-ELISA

RT-0131

Positive control

PC-0378

Negative control

NC-0378

Mirafiori lettuce big-vein virus (MLBVV, Ophiovirus)

DAS-ELISA

RT-0798

Positive control

PC-0798

Negative control

NC-0798

Moroccan watermelon mosaic virus (MWMV, Potyvirus)

DAS-ELISA

RT-0747

Positive control

PC-0747

Negative control

NC-0747

Neckar river virus (NRV, Tombusvirus)

DAS-ELISA

RT-0099

Positive control

PC-0270

Negative control

NC-0270

Nemesia ring necrosis virus (NRNV, Tymovirus)

Cross reaction with ScrMV.

DAS-ELISA

RT-0631

Positive control

PC-0631

Negative control

NC-0631

Odontoglossum ringspot virus (ORSV, Tobamovirus)

Indication for weak cross reaction with other tobamoviruses.

DAS-ELISA

RT-0187

Positive control

PC-0625

Negative control

NC-0625

Okra mosaic virus (OkMV, Tymovirus)

DAS-ELISA

RT-0092

Positive control

PC-0264

Negative control

NC-0264

Onion yellow dwarf virus (OYDV, Potyvirus)

DAS-ELISA

RT-0447

Positive control

PC-0447

Negative control

NC-0447

Papaya ringspot virus (PRSV, Potyvirus)

DAS-ELISA

RT-0805

Positive control

PC-0099

Negative control

NC-0099

Paprika mild mottle virus (PaMMV, Tobamovirus)

DAS-ELISA

RT-0606

Positive control

PC-0606

Negative control

NC-0606

Passiflora latent virus (PLV, Carlavirus)

DAS-ELISA

RT-0056

Positive control

PC-0222

Negative control

NC-0222

Pea seed-borne mosaic virus (PSbMV, Potyvirus)

DAS-ELISA

RT-0129

Positive control

PC-0301

Negative control

NC-0301

Peanut mottle virus (PeMoV, Potyvirus)

DAS-ELISA

RT-0158

Positive control

PC-0092

Negative control

NC-0092

Peanut stunt virus (PSV, Cucumovirus)Indication not to detect isolates from *Robinia* trees.

DAS-ELISA

RT-0160

Positive control

PC-0190

Negative control

NC-0190

Pelargonium flower break virus (PFBV, Carmovirus)

DAS-ELISA

RT-0068

Positive control

PC-0201

Negative control

NC-0201

Pelargonium leaf curl virus (PLCV, Tombusvirus)

Weak cross reaction with TBSV and PetAMV observed.

DAS-ELISA

RT-0067

Positive control

PC-0265

Negative control

NC-0265

Pelargonium line pattern virus (PLPV, Tombusvirus)

DAS-ELISA

RT-0094

Positive control

PC-0193

Negative control

NC-0193

Pelargonium necrotic spot virus (PNSV, Tombusvirus)

DAS-ELISA

RT-0188

Positive control

PC-0371

Negative control

NC-0371

Pelargonium ringspot virus (PeIRSV, Pelarspovirus)

TAS-ELISA

RT-0124-0224/1

Positive control

PC-0304

Negative control

NC-0304

Pelargonium zonate spot virus (PZSV, Anulavirus)

DAS-ELISA

RT-0090

Positive control

PC-0259

Negative control

NC-0259

Pepino mosaic virus (PepMV, Potexvirus)

Detects all strains.

DAS-ELISA

RT-1022

Positive control

PC-1022

Negative control

NC-1022

Pepper mild mottle virus (PMMoV, Tobamovirus)

DAS-ELISA

RT-0018

Positive control

PC-0165

Negative control

NC-0165

Pepper mottle virus (PepMoV, Potyvirus)

DAS-ELISA

RT-0186

Positive control

PC-0256

Negative control

NC-0256

Pepper veinal mottle virus (PVMV, Potyvirus)

DAS-ELISA

RT-0123

Positive control

PC-0257

Negative control

NC-0257

Pepper yellow mosaic virus (PepYMV, Potyvirus)

DAS-ELISA

RT-0127

Positive control

PC-0026

Negative control

NC-0026

Peru tomato mosaic virus (PTV, Potyvirus)

DAS-ELISA

RT-0183

Positive control

PC-0399

Negative control

NC-0399

Petunia asteroid mosaic virus (PetAMV, Tombusvirus)

Cross reaction with PLCV and weak cross reaction with TBSV observed.

DAS-ELISA

RT-0161

Positive control

PC-0339

Negative control

NC-0339

Plantago asiatica mosaic virus (PIAMV, Potexvirus)

DAS-ELISA

RT-1301

Positive control

PC-1202

Negative control

NC-1202

Poinsettia latent virus (PnLV, Alphacryptovirus)

DAS-ELISA

RT-0211

Positive control

PC-0629

Negative control

NC-0629

Poinsettia mosaic virus (PnMV, Tymovirus)

DAS-ELISA

RT-0162

Positive control

PC-0340

Negative control

NC-0340

Poplar mosaic virus (PopMV, Carlavirus)

DAS-ELISA

RT-0065

Positive control

PC-0341

Negative control

NC-0341

Potato aucuba mosaic virus (PAMV, Potexvirus)

DAS-ELISA

RT-1075

Positive control

PC-0007

Negative control

NC-0007

Potato black ringspot virus (PBRSV, Nepovirus)

DAS-ELISA

RT-0045

Positive control

PC-0056

Negative control

NC-0056

Potato leafroll virus (PLRV, Polerovirus)

TAS-ELISA

RT-0741-060/11

DAS-ELISA

RT-1217

Positive control

PC-0842

Negative control

NC-0842

Potato virus A (PVA, Potyvirus)

DAS-ELISA

RT-0535

Positive control

PC-0535

Negative control

NC-0535

Potato virus M (PVM, Carlavirus)Weak cross reaction with *Potato virus S* (PVS).

DAS-ELISA

RT-0667

Positive control

PC-0273

Negative control

NC-0273

Potato virus S (PVS, Carlavirus)

Cross reaction with isolates of other carlaviruses observed (PLV, HSV, CVB, KLV).

DAS-ELISA

RT-0547

Positive control

PC-1327

Negative control

NC-1327

Potato virus V (PVV, Potyvirus)

DAS-ELISA

RT-0232

Positive control

PC-0319

Negative control

NC-0319

Potato virus X (PVX, Potexvirus)

DAS-ELISA

RT-0126

Positive control

PC-0017

Negative control

NC-0017

Potato virus Y (PVY, Potyvirus)

DAS-ELISA

RT-0343

Positive control

PC-0343

Negative control

NC-0343

Potato yellow dwarf virus (PYDV, Nucleorhabdovirus)

DAS-ELISA

RT-0023

Positive control

PC-0719

Negative control

NC-0719

Potato yellowing virus (PYV, Alfamovirus)

DAS-ELISA

RT-0599

Positive control

PC-0706

Negative control

NC-0706

"Potyviruses"

Broad-spectrum reagent for detection of potyviruses.

For use in ACP/PTA-ELISA.

List of detectable species provided on request.

ACP/PTA-ELISA

RT-0573/1

Positive control

PC-0573

Negative control

NC-0573

Prunus necrotic ringspot virus (PNRSV, Ilarvirus)

DAS-ELISA

RT-0027

Positive control

PC-0962

Negative control

NC-0962

Raspberry ringspot virus (RpRSV, Nepovirus)

DAS-ELISA

RT-0193

Positive control

PC-0429

Negative control

NC-0429

Ribgrass mosaic virus (RMV, Tobamovirus)

see Turnip vein clearing virus (TVCV, Tobamovirus)

Rice yellow mottle virus (RYMV, Sobemovirus)

DAS-ELISA

RT-0732

Positive control

PC-0732

Negative control

NC-0732

Rubus chlorotic mottle virus (RuCMV, Sobemovirus)

(Regarded as isolates of Sowbane mosaic virus,

see SoMV RT-0913.)

Ryegrass mosaic virus (RGMV, Rymovirus)

DAS-ELISA

RT-0558

Positive control

PC-1167

Negative control

NC-1167

Saguaro cactus virus (SgCV, Carmovirus)

DAS-ELISA

RT-0734

Positive control

PC-0734

Negative control

NC-0734

Scrophularia mottle virus (ScrMV, Tymovirus)

DAS-ELISA

RT-0870

Positive control

PC-0870

Negative control

NC-0870

Shallot latent virus (SLV, Carlavirus)

TAS-ELISA

RT-0514-0512/1

Positive control

PC-0425

Negative control

NC-0425

Shallot yellow stripe virus (SYSV, Potyvirus)

TAS-ELISA

RT-0452-0452/1

Positive control

PC-0452

Negative control

NC-0452

Shallot virus X (ShVX, Allexivirus)

DAS-ELISA

RT-1042

Positive control

PC-0622

Negative control

NC-0622

Soilborne cereal mosaic virus (SBCMV, Furovirus)

DAS-ELISA

RT-0552

Positive control

PC-0552

Negative control

NC-0552

Soil-borne wheat mosaic virus (SBWMV, Furovirus)

DAS-ELISA

RT-0748

Positive control

PC-0748

Negative control

NC-0748

Sonchus yellow net virus (SYNV, Nucleorhabdovirus)

DAS-ELISA

RT-0032

Positive control

PC-0052

Negative control

NC-0052

Sorghum mosaic virus (SrMV, Potyvirus)

TAS-ELISA

RT-0520-0220/1

Positive control

PC-0801

Negative control

NC-0801

Southern bean mosaic virus (SBMV, Sobemovirus)

DAS-ELISA

RT-0033

Positive control

PC-0100

Negative control

NC-0100

Sowbane mosaic virus (SoMV, Sobemovirus)

DAS-ELISA

RT-0913

Positive control

PC-0913

Negative control

NC-0913

Soybean mosaic virus (SMV, Potyvirus)

DAS-ELISA

RT-0543

Positive control

PC-0938

Negative control

NC-0938

Spartina mottle virus (SpMV, unassigned Potyviridae)

DAS-ELISA

RT-0970

Positive control

PC-0970

Negative control

NC-0970

Sri Lankan cassava mosaic virus (SLCMV, Begomovirus)see *Cassava mosaic geminiviruses****Streptocarpus flower breaking virus*****(SFBV, Tobamovirus)**

Indication for weak cross reaction with other tobamoviruses.

DAS-ELISA

RT-1058

Positive control

PC-1058

Negative control

NC-1058

Sugarcane mosaic virus (SCMV, Potyvirus)

DAS-ELISA

RT-0166

Positive control

PC-0731

Negative control

NC-0731

Sweet potato chlorotic fleck virus (SPCFV, Carlavirus)

DAS-ELISA

RT-0899

Positive control

PC-0899

Negative control

NC-0899

**Sweet potato mild mottle virus
(SPMMV, Ipomovirus)**

DAS-ELISA

RT-0900

Positive control

PC-0900

Negative control

NC-0900

Sweet potato virus 2 (SPV2, Potyvirus)

DAS-ELISA

RT-1036

Positive control

PC-1036

Negative control

NC-1036

Taro bacilliform virus (TaBV, Badnavirus)

DAS-ELISA

RT-1158

Positive control

PC-1158

Negative control

NC-1158

Tobacco etch virus (TEV, Potyvirus)

DAS-ELISA

RT-0138

Positive control

PC-0308

Negative control

NC-0308

**Tobacco mild green mosaic virus
(TMGMV, Tobamovirus)**

Indication for very weak cross reaction with other tobamoviruses.

DAS-ELISA

RT-0887

Positive control

PC-0887

Negative control

NC-0887

Tobacco mosaic virus (TMV, Tobamovirus)

Improved ELISA for the specific detection of TMV, including Ohio III and Ohio V strains.

DAS-ELISA

RT-1065

Positive control

PC-0107

Negative control

NC-0107

Tobacco necrosis virus (TNV, Alphanecrovirus)

Detection of TNV-A and TNV-D.

DAS-ELISA

RT-1221

Positive control

PC-0197

Negative control

NC-0197

Tobacco necrosis virus A (TNV-A, Alphanecrovirus)

DAS-ELISA

RT-0170

Positive control

PC-0186

Negative control

NC-0186

Tobacco necrosis virus D (TNV-D, Alphanecrovirus)

DAS-ELISA

RT-0168

Positive control

PC-0192

Negative control

NC-0192

Tobacco rattle virus (TRV, Tobravirus)

DAS-ELISA

RT-0208

Positive control

PC-0354

Negative control

NC-0354

Tobacco ringspot virus (TRSV, Nepovirus)

DAS-ELISA

RT-0189

Positive control

PC-0236

Negative control

NC-0236

Tobacco streak virus (TSV, Ilarvirus)

DAS-ELISA

RT-0903

Positive control

PC-0615

Negative control

NC-0615

Tobacco vein banding mosaic virus (TVBMV, Potyvirus)

DAS-ELISA

RT-0173

Positive control

PC-0721

Negative control

NC-0721

Tomato aspermy virus (TAV, Cucumovirus)

DAS-ELISA

RT-0107

Positive control

PC-0220

Negative control

NC-0220

Tomato black ring virus (TBRV, Nepovirus)

DAS-ELISA

RT-1220

Positive control

PC-0070

Negative control

NC-0070

Tomato brown rugose fruit virus**(ToBRFV, Tobamovirus)**

Cross reaction with isolates of TMV, ToMMV, ToMV, BPeMV and other tobamoviruses possible.

DAS-ELISA

Positive control

Negative control

RT-1236

PC-1236

NC-1236

ToBRFV is regarded as quarantine virus in many countries and would require a permit/LoA for the positive control. *Tobacco mosaic virus* (TMV) positive control PC-0107 can be used instead.

Tomato bushy stunt virus (TBSV, Tombusvirus)

Weak cross reaction with PLCV observed.

DAS-ELISA

Positive control

Negative control

RT-0098

PC-0268

NC-0268

Tomato chlorosis virus (ToCV, Crinivirus)

DAS-ELISA

Positive control

Negative control

RT-1023

PC-1242

NC-1242

Tomato leaf curl New Delhi virus**(ToLCNDV, Begomovirus)**

DAS-ELISA

Positive control

Negative control

RT-1109

PC-1109

NC-1109

Tomato mosaic virus (ToMV, Tobamovirus)

Strong cross reaction with some TMV and ToMMV isolates and indication for weak cross reaction with other tobamoviruses.

DAS-ELISA

Positive control

Negative control

RT-0104

PC-0135

NC-0135

Tomato mottle mosaic virus (ToMMV, Tobamovirus)

Cross reaction with TMV, ToMV and ToBRFV and may cross react with other tobamoviruses

DAS-ELISA

Positive control

Negative control

RT-1267

PC-1267

NC-1267

Tomato ringspot virus (ToRSV, Nepovirus)

TAS-ELISA

Positive control

Negative control

RT-0071-0697/1

PC-0049

NC-0049

Tomato spotted wilt virus (TSWV, Orthotospovirus)

Weak cross reaction with TCSV, CSNV and ANSV.

TAS-ELISA

Positive control

Negative control

RT-0105-0106/3

PC-0182

NC-0182

Tomato yellow ring virus (TYRV, Orthotospovirus)

Synonymous with "tomato yellow fruit ring virus".

Cross reaction with PolRSV.

DAS-ELISA

Positive control

Negative control

RT-0526

PC-0526

NC-0526

Tomato yellow leaf curl Thailand virus**(TYLCTHV, Begomovirus)**

TAS-ELISA

Positive control

Negative control

RT-0952-0952/2

PC-0952

NC-0952

Tomato yellow leaf curl Sardinia virus**(TYLCSV, Begomovirus)**see *Tomato yellow leaf curl virus* (TYLCV)***Tomato yellow leaf curl virus (TYLCV, Begomovirus)***

Detection of TYLCV and TYLCSV.

Begomovirus ELISA control, does not contain TYLCV.

TAS-ELISA

Positive control

Negative control

RT-0588-0546/2

PC-1271

NC-1271

Tomato yellow leaf curl virus (TYLCV, Begomovirus)

Does not detect TYLCSV!

TAS-ELISA

Positive control

Negative control

RT-0588-0546/4

PC-1271

NC-1271

Tospoviruses**Detection of the tospoviruses TSWV and INSV**

(mix of monoclonal antibodies)

Weak cross reaction with TCSV, ANSV and CSNV.

TAS-ELISA

Positive control

Negative control

RT-1154-1154/1

PC-1154

NC-1154

Tomato yellow ring virus (TYRV, Orthotospovirus)

Synonymous with "tomato yellow fruit ring virus"

Cross reaction with PolRSV.

DAS-ELISA

Positive control

Negative control

RT-0526

PC-0526

NC-0526

Impatiens necrotic spot virus (INSV)

TAS-ELISA

RT-0115-0117/1

Positive control

PC-0281

Negative control

NC-0281

Watermelon silver mottle virus (WSMoV)

DAS-ELISA

RT-0118

TAS-ELISA

RT-0118-0226/1

Positive control

PC-0283

Negative control

NC-0283

(Weak) cross reaction with

- *Capsicum chlorosis virus* (CaCV)
- *Groundnut bud necrosis virus* (GBNV)
- *Watermelon bud necrosis virus* (WBNV)

Iris yellow spot virus (IYSV, Orthotospovirus)

DAS-ELISA

RT-0528

Positive control

PC-0528

Negative control

NC-0528

Turnip crinkle virus (TCV, Carmovirus)

DAS-ELISA

RT-0175

Positive control

PC-0293

Negative control

NC-0293

Turnip mosaic virus (TuMV, Potyvirus)

DAS-ELISA

RT-0132

Positive control

PC-0104

Negative control

NC-0104

Turnip ringspot virus (TuRSV, Comovirus)

Cross reaction with RaMV.

DAS-ELISA

RT-0120

Positive control

PC-0355

Negative control

NC-0355

Turnip vein clearing virus (TVCV, Tobamovirus)

Strong cross reaction with RMV isolates and indication for weak cross reaction with other tobamoviruses.

DAS-ELISA

RT-0029

Positive control

PC-0148

Negative control

NC-0148

Turnip yellows virus (TuYV, Polerovirus)

can be reliably detected with our *Beet western yellows virus* (BWYV) antiserum (RT-0049).

Positive control

PC-1209

Turnip yellow mosaic virus (TYMV, Tymovirus)

DAS-ELISA

RT-0125

Positive control

PC-0299

Negative control

NC-0299

Ugandan cassava brown streak virus (UCBSV, Ipomovirus)

see Cassava brown streak disease (CBSD)

Viola mottle virus (VMoV, Potexvirus)

DAS-ELISA

RT-0080

Positive control

PC-0224

Negative control

NC-0224

Watermelon chlorotic stunt virus

(WmCSV, Begomovirus)

TAS-ELISA

RT-0830-0830/1

Positive control

PC-0830

Negative control

NC-0830

Watermelon mosaic virus (WMV, Potyvirus)

DAS-ELISA

RT-0203

Positive control

PC-0394

Negative control

NC-0394

Watermelon silver mottle virus

(WSMoV, Orthotospovirus)

TAS-ELISA

RT-0118-0226/1

Positive control

PC-0283

DAS-ELISA

RT-0118

Positive control

PC-0283

Negative control

NC-0283

Wheat spindle streak mosaic virus

(WSSMV, Bymovirus)

DAS-ELISA

RT-0541

Positive control

PC-0541

Negative control

NC-0541

Wheat streak mosaic virus (WSMV, Tritimovirus)

DAS-ELISA

RT-0544

Positive control

PC-0356

Negative control

NC-0356

White clover mosaic virus (WCIMV, Potexvirus)

DAS-ELISA

RT-0837

Positive control

PC-0310

Negative control

NC-0310

Wild potato mosaic virus (WPMV, Potyvirus)

DAS-ELISA

RT-0089

Positive control

PC-0248

Negative control

NC-0248

Xanthomonas vasicola pv. musacearum (Xvm)Causing banana *Xanthomonas* wilt (BXW).

Not covered by the scope of our accreditation.

DAS-ELISA

RT-1039

Positive control

PC-1039

Negative control

NC-1039

Yam mild mosaic virus (YMMV, Potyvirus)

DAS-ELISA

RT-1038

Positive control

PC-1214

Negative control

NC-1214

Yam mosaic virus (YMV, Potyvirus)

DAS-ELISA

RT-1142

Positive control

PC-1142

Negative control

NC-1142

Yam spherical virus (YSV, Aureusvirus)

DAS-ELISA

RT-0517

Positive control

PC-0517

Negative control

NC-0517

Youcai mosaic virus (YMoV, Tobamovirus)

Cross reaction with TVCV and indication for weak cross reaction with other tobamoviruses.

DAS-ELISA

RT-0527

Positive control

PC-0527

Negative control

NC-0527

Zantedeschia mosaic virus (ZaMV, Potyvirus)

Regarded as strain of KoMV.

DAS-ELISA

RT-1037

Positive control

PC-1030

Negative control

NC-1030

Zucchini yellow fleck virus (ZYFV, Potyvirus)

DAS-ELISA

RT-1248

Positive control

PC-1248

Negative control

NC-1248

Zucchini yellow mosaic virus (ZYMV, Potyvirus)

DAS-ELISA

RT-0234

Positive control

PC-0466

Negative control

NC-0466

Zygocactus virus X (ZyVX, Potexvirus)

DAS-ELISA

RT-0145

Positive control

PC-0559

Negative control

NC-0559

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		Prices
Viruses and related materials	Virus inocula - freeze dried (for mechanically transmissible viruses only)	180.00 €
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	Controls for ELISA, sufficient for 10 tests (final volume 2 ml)	20.00 €
	Nucleic acid extracts from virus-infected plant material	200.00 €
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	100 tests (1 set)	60.00 €
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	≥1,000 tests (≥10 sets) of one antiserum	32.00 €
	≥5,000 tests (≥50 sets) of one antiserum	24.00 €
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	(e.g. 1,000 test = 10 sets = 320.00 €)	(per set)
	Large quantities	Inquire
	Please note that the ordered sets of one antiserum are packed all in one vial!	
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	Serological plant virus diagnosis	Inquire
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	dsRNA analysis	Inquire
	Virus inoculum preparation	Inquire
	Preparation of comparative laboratory samples	Inquire
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	Establishment of diagnostic protocols and indexing routines	Inquire
	Plant virus resistance screening	Inquire
	Development of diagnostic procedures	Inquire
	Further analyses possible on request	Inquire
Consultancy and Training		Inquire

Detailed protocols are available for download:

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Title, Department

Signature, Date

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Images on front cover

center: severely stunted zucchini plant infected with *Tomato leaf curl New Delhi virus* (ToLCNDV)

bottom left: symptomatic tomato fruits mixed infected with *Tomato brown rugose fruit virus* (ToBRFV) and *Pepino mosaic virus* (PepMV)

bottom right: rot of cassava storage roots caused by *Cassava brown streak virus* (CBSV)

Images on back cover

top left: *Echinacea* plant affected by a mixed infection of *Cucumber mosaic virus* (CMV) and *Broad bean wilt virus 1* (BBWV-1)

top center: zucchini plant displaying leaf and fruit symptoms due to a mixed infection with *Tomato leaf curl New Delhi virus* (ToLCNDV) and *Zucchini yellow mosaic virus* (ZYMV)

top right: *Eggplant mottled dwarf alphanucleorhabdovirus* (EMDV) causing flower breaking in *Hydrangea macrophylla*



ORDERING AND INFORMATION

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