

NEW ToBRFV DAS-ELISA

Higher Specificity. Higher Confidence.

BIOREBA introduces the **improved ToBRFV DAS ELISA** featuring an improved antibody composition for **maximum specificity and reliability** in Tomato brown rugose fruit virus (ToBRFV) diagnostics.

The updated DAS-ELISA format combines:

- **Coat: Polyclonal coating IgG** developed against a German ToBRFV isolate
- **Conjugate: A new monoclonal conjugate antibody** developed against a recombinant epitope of the ToBRFV coat protein¹

This optimized antibody mix delivers **highly specific ToBRFV detection** across leaves, fruits, and seeds.

Exceptional Specificity – No Cross Reactivity

The new ToBRFV DAS ELISA shows no cross reactivity with all tested Tobamoviruses and other viruses on tomato (*Solanum lycopersium*), chillis and bell peppers (*Capsicum* spp.) including:

CGMMV (Cucumber green mottle mosaic virus)	TMV (Tobacco mosaic virus)
CMV (Cucumber mosaic virus)	TNV (Tobacco necrosis virus)
INSV (Impatiens necrotic spot virus)	ToANV (Tomato apex necrosis virus)
PaMMV (Paprika mild mottle virus)	ToMV (Tomato mosaic virus)
PMMoV (Pepper mild mottle virus)	ToMMV (Tomato mottle mosaic virus)
PepMV (Pepino mosaic virus)	ToRSV (Tomato ringspot virus)
SHMV (Sunn-hemp mosaic virus)	TSV (Tobacco streak virus)
TBRV (Tomato black ring virus)	TSWV (Tomato spotted wilt virus)
TBSV (Tomato bushy stunt virus)	TVCV (Turnip vein clearing virus)
TMG MV (Tobacco mild green mosaic virus)	TYLCV (Tomato yellow leaf curl virus)

The new format was **extensively validated on tomato seed samples**, demonstrating strong analytical performance across infection levels.

Comparison of ToBRFV qPCR (BIOREBA) and ToBRFV DAS-ELISA (BIOREBA) by testing of 1'000 tomato seed: ToBRFV-infected tomato seed were mixed with healthy seed

Plant	Sample Type	Degree of infection	Analytical sensitivity	BIOREBA ToBRFV qPCR
Tomato	Seeds	100%	Up to 1:1.9*10 ⁷ dilution	positive
Tomato	Seeds	40%	Up to 1:3.9*10 ⁶ dilution	positive
Tomato	Seeds	10%	Up to 1:1.5*10 ⁵ dilution	positive
Tomato	Seeds	1%	Up to 1:1.2*10 ³ dilution	positive
Tomato	Seeds	0.1%	Up to 1:2.5*10 ² dilution	positive

Key Benefits at a Glance

- Highly specific monoclonal antibody for ToBRFV
- No cross reactivity with tested Tobamoviruses
- Fully validated on tomato seeds
- High analytical sensitivity across leaves, fruits, and seeds
- Reliable detection of all tested ToBRFV isolates (Germany, NL, Cyprus, Switzerland, Israel)

References:

1: Bernabé-Orts JM, Torre C, Méndez-López E, Hernando Y, Aranda MA. New Resources for the Specific and Sensitive Detection of the Emerging Tomato Brown Rugose Fruit Virus. *Viruses*. 2021 Aug 25;13(9):1680. doi: 10.3390/v13091680. PMID: 34578261; PMCID: PMC8473139.