Human FSME (TBEV) IgG antibody ELISA Kit

Enzyme Immunoassay for the quantification of IgG antibodies to FSME (TBEV) in serum or plasma.

Catalog number: ARG80552

For research use only. Not for use in diagnostic procedures.

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PRINCIPLE OF THE ASSAY

This assay employs the qualitative enzyme immunoassay technique. TBEV antigen has been pre-coated onto a microtiter plate. Standards or samples are pipetted into the wells and any Ab present is bound by the immobilized antigen. After washing away any unbound substances, a HRP-conjugated anti human antibody is added to each well and incubate. After washing away any unbound antibody-enzyme reagent, a substrate solution (TMB) is added to the wells and color develops in proportion to the amount of Ab bound in the initial step. The color development is stopped by the addition of acid and the intensity of the color is measured at a wavelength of 450 nm ±2 nm. The concentration of Ab in the sample is then determined by comparing the O.D of samples to the standard curve.

MATERIALS PROVIDED & STORAGE INFORMATION

Store the unopened kit at 2-8 °C. Use the kit before expiration date.

Component	Quantity	Storage information
Antigen-coated microplate	8 X 12 strips	4°C. Unused strips should be sealed tightly in the air-tight pouch.
Calibrator-Set (0, 10, 300, 1000 U/ml)	5 x 2 ml (Ready-to-use)	4°C
HRP-Antibody conjugate	15 ml (Ready-to-use)	4°C
10X Wash buffer	60 ml	4°C

Sample Diluent	60 ml (Ready-to-use)	4°C
TMB substrate	15 ml	4°C (Protect from light)
STOP solution	15 ml	4°C

MATERIALS REQUIRED BUT NOT PROVIDED

- Microplate reader capable of measuring absorbance at 450nm
- Pipettes and pipette tips
- Deionized or distilled water
- Automated microplate washer (optional)

TECHNICAL HINTS AND PRECAUTIONS

- Wear protective gloves, clothing, eye, and face protection especially while handling blood or body fluid samples.
- Store the kit at 4°C at all times.
- Briefly spin down the HRP-antibody conjugate before use.
- If crystals are observed in the 10X Wash buffer, warm to RT (not more than 50°C) until the crystals are completely dissolved.
- Ensure complete reconstitution and dilution of reagents prior to use.
- It is highly recommended that the standards, samples and controls be assayed in duplicates.
- Change pipette tips between the addition of different reagent or samples.

SAMPLE COLLECTION & STORAGE INFORMATION

The sample collection and storage conditions listed below are intended as general guidelines. Sample stability has not been evaluated.

Serum - Use a serum separator tube (SST) and allow samples to clot for 30 minutes before centrifugation for 15 minutes at 1000 x g. Remove serum and assay immediately or aliquot and store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.

Plasma - Collect plasma using EDTA or heparin as an anticoagulant. Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Assay immediately or aliquot and store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles.

REAGENT PREPARATION

- 1X Wash buffer: Dilute 10X Wash buffer into distilled water to yield 1X Wash buffer.
- Patient sample: Dilute patient sample 1:101 with Sample diluent buffer before assay, mix well. (e.g. 5 µl of serum + 500 µl of sample diluent buffer)

  Note: the controls / standards are ready-to-use and need not further dilution.

ASSAY PROCEDURE

All materials should be equilibrated to room temperature (RT) before use. Standards, samples and controls should be assayed in duplicates.

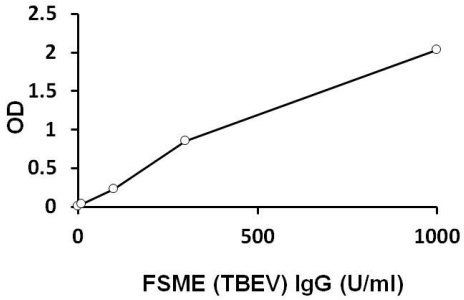
1. Remove excess microplate strips from the plate frame, return them to the foil pouch containing the desiccant pack, and reseal it.
2. Add 100 µl of diluted samples and Calibrators into wells. Leave one well empty for the substrate blank.
3. Incubate for 60 minutes at RT.
4. Aspirate each well and wash, repeating the process 2 times for a total 3 washes. Wash by filling each well with 1× Wash Buffer (350 µl) using a squirt bottle, manifold dispenser, or autowasher. Complete removal of liquid at each is essential to good performance. After the last wash, remove any remaining Wash Buffer by aspirating, decanting or blotting against clean paper towels.
5. Add 100 µl 1X Antibody solution into each well (expect the substrate blank). Incubate for 30 minutes at RT.
6. Wash as according to step 4.
7. Add 100 µl of TMB Reagent to each well. Incubate for 20 minutes at room temperature.
8. Add 100 µl of Stop Solution to each well.
9. Read the OD with a microplate reader at 450 nm immediately.

CALCULATION OF RESULTS

For quantitative results plot the optical density of each calibrator versus the calibrator concentration to create a calibration curve. The concentration of patient samples may be estimated from the calibration curve by interpolation.

Using data reduction software a 4-parameter-Fit with lin-log coordinates for optical density and concentration is the data reduction method of choice.

EXAMPLE OF TYPICAL STANDARD CURVE



Expected Values

In an in-house study apparently healthy subjects showed the following results:

Ig Isotype	n	Interpretation		
		Positive	Equivocal	Negative
IgG	53	7.6%	9.4%	83.0%

INTERPRETATION OF RESULTS

Negative: < 80 U/ml

Equivocal: 80-120 U/ml

Positive: > 120 U/ml

QUALITY ASSURANCE

Limit of detection

Functional sensitivity was determined to be 3.2 U/ml.

Cross-Reactivity

No cross-reactivity to Measles and Borrelia

Interferences

No interferences to bilirubin up to 0.3 mg/mL, hemoglobin up to 8.0 mg/mL and triglycerides up to 5.0 mg/mL.

Intra-assay and Inter-assay precision

The CV value of intra-assay precision was 5.4% and inter-assay precision was 6.8%.

Recovery

92-107%