

XEMATest MTG

Rapid immunochromatographic test for qualitative determination of microbial transglutaminase in foods

Version of the test I (1903)

Transglutaminase is a natural origin enzyme normally found in human, vertebrate and invertebrate tissues, in cellular walls of plants, fungi and bacteria. The catalytic activity of this enzyme based on the formation of temperature-resistant covalent bonds between the ϵ -amino groups of lysine and the γ -carboxamide groups of glutamine. As a result, a solid frame is created both within and between protein molecules.

Microbial transglutaminase (MTG) produced by bacteria has been widely used in recent years. Due to its ability to "cross-link" individual sections of protein molecules, it is used as a texture agent to improve the organoleptic properties and reduce the cost of finished products in the dairy and meat industry, baking and tofu production. There is information that MTG is used in the technology of making food films.

XEMATest MTG is based on monoclonal antibodies and detects specific antigens of MTG.

XEMATest MTG is based on immunochromatographic principle (lateral flow). The target antigen is bound by specific antibodies attached to colored microparticles. Then this complex migrates to the test line where it binds to another specific antibody to form a colored line indicating positive result.

The test is applicable for **qualitative detection** of target antigens in samples of the following products:

A) Slaughtery products and meat products:

Meat; meat and meat-containing meat products; meat and meat-containing sausages; meat and meat-containing semi-finished products; meat and meat-containing canned goods; meat products for baby food.

B) Fish products obtained from catches of aquatic biological resources and aquaculture objects of animal origin, in processed form, including the following types: frozen and pasteurized fish products; fish semi-finished product; minced fish products; imitated fish products.

B) Dairy products:

Milk products; dairy compound products; milk-containing products; milk-containing products with butterfat substitute.

TEST SENSITIVITY AND SPECIFICITY

XEMATest MTG uses a combination of antibodies which allows to determine the antigen in all types of food. The technological processes to which the raw materials are subjected as well as the type of product (dairy products, meat semi-finished products, etc) do not affect the content of target antigen.

The sensitivity of XEMATest MTG in the extract is approximately 15 mg/kg (ppm) of the recombinant MTG (Zedira, Germany, cat № #T113).

PLEASE NOTE: the sensitivity is calculated for the target antigenic material content in solid material extracted by the method described below, (solid/liquid ratio 1:10 wt/vol).

In case of doubtful results, it is recommended to determine the presence of MTG antigen by laboratory methods (for example, XEMA ELISA, cat. № K961).

More details of test performance (sensitivity, specificity, variability, influence of matrix and processing) are available on request or online at www.xematest.com

CONTENTS

- 20 test strips individually packed into sealed pouches;
- 20 Sample collection tubes;
- 1 vial of Sample extraction buffer – 50 ml;
- Instruction for use.

SPECIMEN HANDLING

The specimens should be brought to temperature range +18...+35°C before use; testing of colder specimens diminishes the sensitivity of the assay; testing of hot specimens is NOT possible!

TEST PROCEDURE FOR SOLIDS

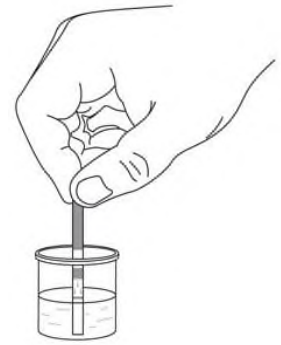
1. Allow the test strips to reach room temperature for 5-10 minutes before opening the pouches.
2. Crush a food sample. Use blender or mortar to crush solid products. Continue crushing until a homogeneous powder is obtained. **Attention! If different products are analyzed, wash your crushing device thoroughly to avoid cross-contamination!**
3. Put a small piece of tested material (0.1-0.5 g) into a Sample collection tube. If the balances are available, record the actual weight in grams.
4. If the accurate volume measurement tool (pipette) is available, calculate required Sample extraction buffer volume as 10x actual weight (for example, if the weight is 0.1 g, add 1 ml of the buffer). Otherwise, add not more than half of tube volume of Sample extraction buffer. Adjust the sensitivity of the assay if the weight/volume ratio is different from 1:10.
5. Screw the cap securely onto the tube. Shake it for 5 minutes.

6. Centrifuge the extracts 5 min at 200 g to remove particles. If the centrifuge is not available, clear the solution by filtering through a tissue patch or let set down for 10-15 minutes. The clarified extract can be used immediately; not recommended to store extracts in liquid form for more than 1 hour. For longer storage place the extract to a freezer (below -15 °C).

7. Open the pouch carefully, taking care not to damage the test strip. Dip the test strip into the diluted extract without touching the precipitate at the bottom.

8. Allow the strip to remain in the solution for 5 – 10 seconds. Remove the test strip and place onto a clean horizontal surface; do not touch or move the test strip for 10 minutes. Read the test result.

CAUTION: ENSURE THE TEST STRIP IS DIPPED AS SHOWN IN A FIGURE. THE DIRECTION AND THE DEPTH OF IMMERSION MUST BE AS SHOWN FOR CORRECT OPERATION.



TEST PROCEDURE FOR LIQUIDS

Liquid samples do not need special preparation and can be immediately used for the extraction procedure by the method described below.

1. Allow test strips to reach room temperature for 5-10 minutes before opening the pouches.

2. Add liquid sample and Sample extraction buffer into a Sample collection tube by using a pipette. Keep the volume/volume ratio 1:10 (for example, if the Sample volume is 100 ul, add 900 ul of the buffer).

3. Screw the cap securely onto the tube. Shake it for 5 minutes. Then follow the instructions from point 6 of the test procedure for solid materials outlined above.

INTERPRETATION OF THE RESULTS

Test is considered **POSITIVE** if **TWO** colored lines appear in the test zone.



Test is considered **NEGATIVE** if only **ONE** colored line is clearly visible.



If **NO** colored line is formed, the test is **INVALID**.



Try to repeat it with another test strip, check the correct specimen handling and test procedure, expiry date and storage conditions.

PRECAUTIONS

- The test strips should be stored at +10...+30 °C.
- Use the test within 10 minutes after opening the pouch because the test strips are very sensitive to moisture.
- Do not touch the reaction membrane.
- Do not use the test strip if its pouch is torn, or test strip is broken or damaged.
- The test strips are disposable; do not use them repeatedly.
- Do not use the test strips beyond the expiration date.

MANUFACTURER:

Xema group of companies

www.xematest.com