MONLAB

MonlabTest®

Salmonella MonlabTest®

CE

IVD

MO-804024 20 TESTS

One step test to detect Salmonella

A rapid, one step test for the qualitative detection of *Salmonella* in human feces.
For professional in vitro diagnostic use only.

INTENDED USE

Salmonella MonlabTest® is a rapid chromatographic immunoassay for the qualitative detection of *Salmonella* in feces specimens, which might be useful for the diagnosis of salmonellosis.

SYNTHESIS

Clinical syndromes in humans caused by infection with *Salmonella enterica* are divided into typhoid fever, caused by *S. enterica serovars typhi* and *paratyphi*, and a range of clinical syndromes, including diarrhoeal disease, caused by the non-typhoid *salmonellae* (NTS) of which there are around 2,500 serovars. Typhoid fever is a human-restricted and highly adapted invasive systemic disease of adults and children that shows little association with immunosuppression. In contrast, NTS have a broad vertebrate host range and epidemiology that often involves food animals, at least in industrialised countries where it usually presents as gastroenteritis. Severe, invasive disease due to NTS is usually associated with the immunocompromised state common in HIV-infected adults. Invasive NTS disease is also common in young African children with co-morbidities such as severe anaemia, malnutrition and HIV infection.
Salmonella MonlabTest® provides a rapid detection of *Salmonella* directly from the fecal samples.

PRINCIPLE

The *Salmonella* MonlabTest® is a qualitative lateral flow immunoassay for the detection of *Salmonella* in human feces samples. The membrane is pre-coated with antibodies against *Salmonella* antigens on the test line region. During testing, the sample reacts with the particle coated with anti-*Salmonella* antibodies which was pre-dried on the test strip. The mixture moves upward on the membrane by capillary action. In the case of a positive result the specific antibodies present on the membrane will react with the mixture conjugates and generate coloured lines. A green coloured band always appears in the control line and serves as verification that sufficient volume was added, that proper flow was obtained and as an internal control for the reagents.

PRECAUTIONS

- For professional *in vitro* diagnostic use only.
- Do not use after expiration date.
- The test should remain in the sealed pack until use.
- Do not use the test if pack is damaged.
- Follow Good Laboratory Practices, wear protective clothing, use disposal gloves, do not eat, drink or smoke in the area.
- All the specimens should be considered potentially hazardous and handled in the same manner as an infectious agent.
- The test should be discarded in a proper biohazard container after testing.
- The test must be carried out within 2 hours of opening the sealed bag.

STORAGE AND STABILITY

Store as packaged in the sealed pack either at refrigerated or room temperature (2-30ºC/36-86ºF). The test is stable through the expiration date printed on the sealed pack. The test must remain in the sealed pack until use. Do not freeze.

MATERIALS PROVIDED	MATERIALS REQUIRED BUT NO PROVIDED
- 20 Tests - Instruction for use - 20 Specimen collection vial with buffer - 1 Control -: negative swab + testing tube + pipette - 1 Control +: positive swab + testing tube + pipette	- Specimen collection container - Disposable gloves - Timer

SPECIMEN COLLECTION AND PREPARATION

Collect sufficient quantity of feces (1-2 g or mL for liquid sample). Stool samples should be collected in clean and dry containers (no preservatives or transport media). The samples can be stored in the refrigerator (2-8ºC/36-46.4ºF) for 1-2 days prior to testing. For longer storage (maximum 1 year) the specimen must be kept frozen at –20ºC/-4ºF. Freezing and thawing cycles are not recommended. The sample will be totally thawed, brought to room temperature and mix as thoroughly as possible before testing.

PROCEDIMIENTO

To process the collected stool samples (see illustration 1):
Use a separate specimen collection vial for each sample (with 1mL of the buffer). Introduce the swab or stick two or three times into the fecal specimen to pick up the sample (approx. 125 mg) and put into the testing tube or vial with buffer. Shake the testing tube or vial in order to assure good sample dispersion. For liquid stool samples, aspirate the fecal specimen with a dropper and add 125µL into the testing tube or vial with buffer.
Test Procedure (see illustration 2)
Allow the tests, stool samples and buffer to reach to room temperature (15-30°C/59-86°F) prior to testing. Do not open pouches until ready to perform the assay.
1. Remove the *Salmonella* MonlabTest® from its sealed pouch and use it as soon as possible.
2. Shake the specimen collection vial to assure good sample dispersion. Break off the top of the vial.
3. Use a separate device for each sample. Dispense 4 drops into the specimen well (S). Start the timer.
4. Read the result at **10 minutes** after dispensing the sample.

Illustration 1

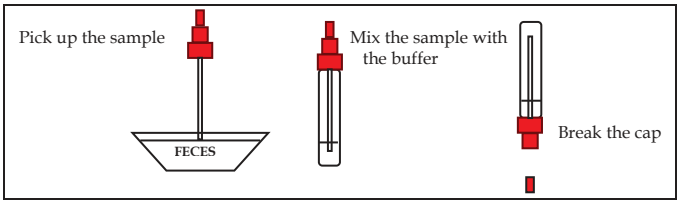
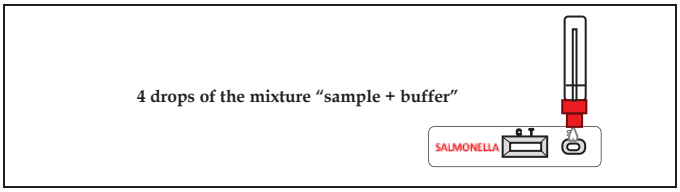


Illustration 2



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INTERPRETATION OF RESULTS

Illustration 3

POSITIVE**:** Two lines appear across the central window. In the result line region, a **red** test line marked in the illustration 3 with the letter T, and in the control line region, a **green** control line marked in the illustration 3 with the letter C.

NEGATIVE**:** Only one **green** band appears across the control line region marked with the letter C at the illustration 3 (control line).

INVALID: Total absence of the **green** control coloured band regardless the appearance or not of the **red** test line. See illustration Note: Insufficient specimen volume, incorrect procedural techniques or deterioration of the reagents are the most likely reasons for control line failure. Review the procedure and repeat the test with a new test. If the problem persists, discontinue using the test kit and contact your local distributor.

NOTES ON THE INTERPRETATION OF RESULTS

The intensity of the red coloured band in the result line region (T) will vary depending on the concentration of antigens in the specimen. However, neither the quantitative value, nor the rate of increase in antigens can be determined by this qualitative test.

QUALITY CONTROL

Internal procedural controls are included in the test:

- A green line appearing in the control line region (C). It confirms sufficient specimen volume and correct procedural technique.

External Quality Control

Each kit contains a positive and negative control material. Use the control swabs to check that the extraction reagents and the test are working properly. Also use the controls to test that you are able to correctly perform the test procedure.

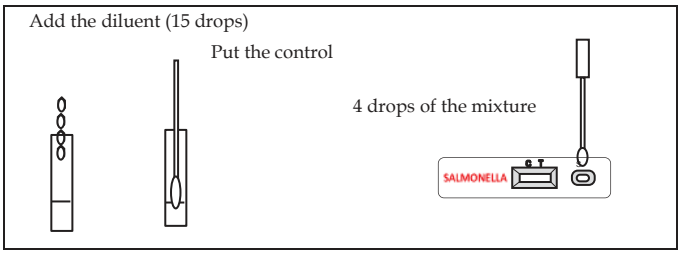
Quality Control Procedure:

Salmonella Positive control: Remove the *Salmonella* positive control from its sealed pouch. Add the diluent (15 drops) in a testing tube. Put the *Salmonella* positive control swab, mix 60 seconds and extract as much liquid possible from the swab. Discard the swab. Remove the test from its sealed pouch and dispense 4 drops of the positive control liquid into the specimen well (S).

Result: *Salmonella* positive (see interpretation of results).

Salmonella Negative control: Repeat the procedure for Negative Swab Control using the Reagent Control (-) instead the Reagent Control (+)

Result: *Salmonella* negative (see interpretation of results).



LIMITATIONS

1. *Salmonella* MonlabTest® will only indicate the presence of *Salmonella* in the specimen (qualitative detection) and should be used for the detection of *Salmonella* antigens in feces specimens only. Neither the quantitative value nor the rate of increase in antigen concentration can be determined by this test.
2. An excess of sample could cause wrong results (brown bands appear). Dilute the sample with the buffer and repeat the test.
3. Some stool samples can decrease the intensity of the control line.
4. Freezing and thawing cycles for the sample are not recommended, it could cause wrong results.
5. A negative result is not meaningful because it is possible the *Salmonella* content in the stool sample to be too small. A *Salmonella* determination should be carried out on a sample from an enrichment culture.
6. This test provides a presumptive diagnosis of salmonellosis. All results must be interpreted together with other clinical information and laboratory findings available to the physician.

EXPECTED VALUES

Typhoid fever and salmonellosis are public health problems in developing countries, where the incidence of cases per year is 200–500/100.000. Transmission occurs by contamination of water or food with bacteria. Animals and humans are the principal reservoirs.

PERFORMANCE CHARACTERISTICS

Sensitivity and specificity

It was performed an evaluation using *Salmonella* MonlabTest®. The results were confirmed by another immunochromatographic test (Singlepath®Salmonella, Merck).

Sensitivity: >99% and specificity >97%.

Cross-Reactivity

It was performed an evaluation to determine the cross reactivity of *Salmonella* MonlabTest®. There is not cross reactivity with common gastrointestinal pathogens, other organisms and substances occasionally present in feces.

- *Campylobacter*
- *Clostridium difficile*
- *Escherichia coli O157:H7*
- *Helicobacter pylori*
- *Listeria monocytogenes*
- *Staphylococcus aureus*
- *Yersinia enterocolitica*

REFERENCES

- GORDON, M, et al, "Invasive salmonellosis in Malawi". J Infect Developing Countries 2008; 2(6):438-442.
- SANCHEZ-JIMENEZ, M. et al. "Validation of a PCR for diagnosis of typhoid fever and salmonellosis by amplification of the hilA gene in clinical simples from Colombian patients", Journal of Medical Microbiology (2004), 53, 875–878.

SYMBOLS FOR IVD COMPONENTS AND REAGENTS

	Manufacturer	IVD	For *in vitro* diagnostic use only
	Don't re-use		Consult instructions for use
Σ n	Contains sufficient for <n> tests		Keep dry
REF	Catalogue Code		Temperature limitation
LOT	Lot Number		Use by

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