Thermostatic device – working instructions Detection of antibiotics in milk using test Twinsensor BT

Thermostatic device for heating up samples for detection of inhibitor substances in cow, sheep, goat milk etc at constant temperature, which could be changed using PC.

Working voltage – 12 V-16V
Using pulse power supply 110-240V

Working with the thermostatic device:

1. Connect the output of the pulse power supply to the thermostatic device.
2. Connect the pulse power supply to the network.
3. The green and red LED on the front panel of the thermostatic device light up
4. In dependence of the outer temperature, after appr. 5 minutes the red LED lights off, which indicates that the thermostatic device has reached the set temperature and is ready for work. When Twinsensor BT test is used - temperature is factory set to 50o C
5. Working with timer:
5.1   Using the button set a min 3 minutes
5.2   Using the button Memory the set time is memorised
5.3   Press the button Start/Stop in order to switch on the timer
5.4   After the set 3 minutes elapse a sound signal is heard
5.5   Press the button Start/Stop in order to stop the sound signal
5.6   Press the button Memory to display the already set time
5.7   Press Start/Stop to switch on the timer
5.8   After the set 3 minutes elapse a sound signal is heard
5.9   Press the button Start/Stop in order to stop the sound signal

6. In case you need to switch off the thermostatic device, simply disconnect the power supply.

Note: when working with accumulator power supply use the cable with the plug suitable to be connected to the lighter, which is part of the set.

Twinsensor BT
(ß-lactam + Tetracycline detection)

- TwinsensorBT is a receptor-based assay in a dipstick format allowing rapid and simultaneous detection of **ß-lactams** and **tetracyclines** present in a milk sample.
- TwinsensorBT is a competitive test involving two specific receptors in one single operation.
- TwinsensorBT is rapid and takes only 6 minutes to run at 50°C ± 3°C.
- TwinsensorBT is easy to read by comparing the colour intensities of the lines.
- TwinsensorBT is appropriate to make testing in situ - farm, collecting centres, dairies, milk processing industries and even analytical laboratories.

Twinsensor dipstick
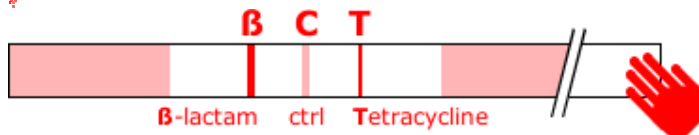
There are 3 capture lines on the dipstick. Two (2) test lines located on both sides (top and below) of one (1) central control line.

- The control line is weak and visible all the time. The colour intensity of the control line serves as a threshold for comparing test lines intensities.
- The below test line is the specific line for penicillin and cephalosporin compounds. Remember **B**elow for **B**etalactams.
- The top test line is the specific line for tetracycline compounds. Remember **T**op for **T**etracyclines.

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Test procedure
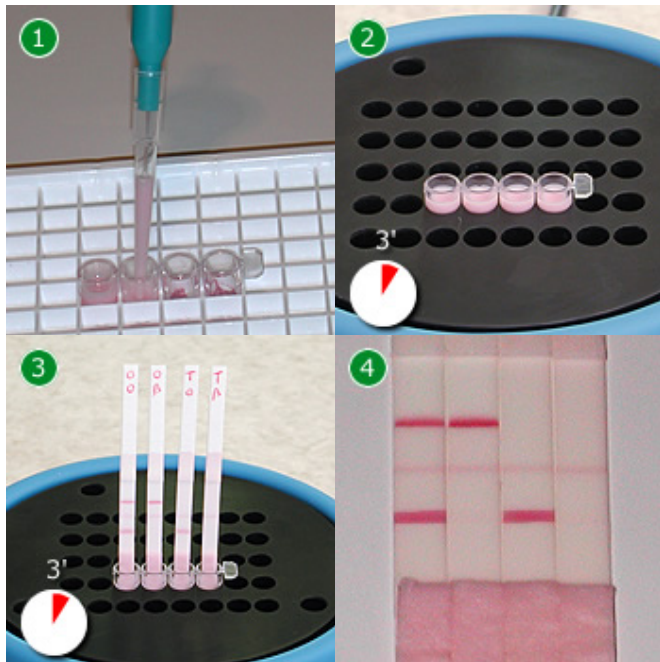
1. Add milk (200µl) to the reagent microwell and homogenise with the pipette.
2. Place the microwell onto the heater block for 3 min.
3. Add dipstick to microwell and incubate it for another 3 min.
4. Take out the dipstick and interpret the colour intensities.

Reading the results

Comparing the intensity of the «TEST» lines with that of the «CTRL» line allows a visual interpretation of the results.
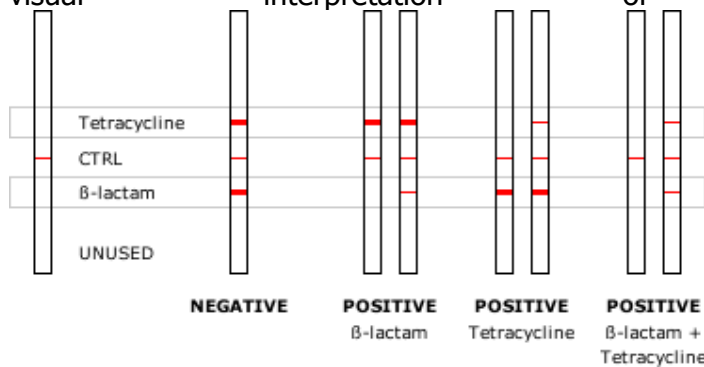
- When the «TEST» lines - either bottom ß-lactam or top tetracycline - are more visible than the «CTRL» line, the sample is considered to be **NEGATIVE** and contains a lower antibiotic concentration than the Detection Limits.
- When the «TEST» lines are as visible as the «CTRL» line or less visible than the «CTRL» line, the sample is considered to be **POSITIVE** and contains an antibiotic concentration that is equal to or higher than the Detection Limits.
- No «TEST» line indicates a **HIGHLY POSITIVE** sample for both ß-lactam and Tetracycline compounds.

When hesitating, you should regard the sample as positive and confirm by having a second interpretation four (4) minutes later.

Detection limit:

ANTIBIOTICS	TWINSENSOR
AMOXICILLIN	3 - 5
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BENZYLPENICILLINE	2 - 3
CEFACETRILE	30-40
CEFALONIUM	3 – 5
CEFAZOLINE	18 – 22
CEFOPERAZONE	3 – 4
CEFQUINOME	30 – 35
CEFTIOFUR	10 - 15
CEPHAPIRINE	6 - 8
CLOXACILLIN	6 – 8
DICLOXACILLIN	6 – 8
NAFCILLIN	30 - 40
OXACILLIN	12 – 18
CHLORTETRACYCLINE	50 – 60
DOXYCYCLINE	50 - 60
OXYTETRACYCLIN	60 - 80
TETRACYCLIN	80 - 100