

Product	Cat #	Size	Price
SensiT™ $\beta$ -lactam strip test kit	STBL-010	96 tests	Please inquire
$\beta$ -lactam positive milk control (4 ppb Pen G)	SD-0010	1 vial	Please inquire
$\beta$ -lactam negative milk control (0 ppb Pen G)	SD-0020	1 vial	Please inquire



SensiT™  $\beta$ -lactam strip test kit is a lateral flow-based dipstick assay designed to rapidly detect the presence of a panel of  $\beta$ -lactam antibiotics in raw, commingled milk samples (**Table 1**). These tests require only two easy-to-use components: the lyophilized receptors-gold conjugates contained in microwells and the dipsticks. Results are easy to read on the dipstick and can be obtained in as little as 6 minutes.

#### Technical description

SensiT™  $\beta$ -lactam strip test kit is a competitive receptor-binding assay which relies on the specific interaction between receptors and  $\beta$ -lactam residues. Each test is devised to require only two major components: (1) a microwell which contains predetermined amounts of receptors conjugated to colloidal gold particles for visual labeling, and (2) a dipstick that is comprised of a short sample pad to facilitate uptake of liquid, followed by a set of layered membranes with two specific capture lines, and a longer wicking pad to promote liquid flow along the strip (**Fig. 1**).

When the lyophilized reagents in the microwell are re-suspended with a milk sample, the receptors will bind all  $\beta$ -lactam antibiotics present in the sample, if any, during the first incubation period. When the test strip is subsequently dipped into the milk, the liquid starts running vertically on the strip and passes through the capture zones. For a test to be considered valid, the thin upper line, the control line, must become visible after the second incubation period. The other line, placed upstream of (below) the control line, is the “test” line for  $\beta$ -lactam molecules. If the sample is free of penicillins and cephalosporins, intense color development will occur on the test line, indicating the absence of  $\beta$ -lactam antibiotics in the milk sample. In contrast, the test line will be very faint or absent if the targeted antibiotics are indeed present in the sample.

#### Components of SensiT™ $\beta$ -lactam strip test kit (Cat # STBL-010)

Everything needed to perform 96 tests is provided in this kit:

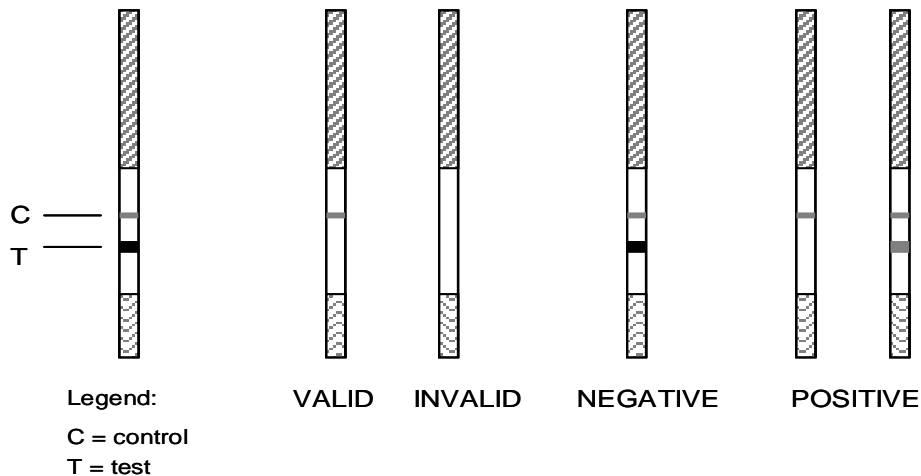
- 12 tubes, each containing 1 strip of 8 reagent microwells and 8 test strips (dipsticks);
- One 200  $\mu$ l micropipette and 100 disposable tips;
- One  $\beta$ -lactam positive and one  $\beta$ -lactam negative milk controls in lyophilized form (Cat# SD-0010 and SD-0020);
- One User’s Manual.

#### Procedural outline

- Pipette 200  $\mu$ l of milk sample into a reagent-containing microwell and mix to homogeneity;
- Incubate for 3 minutes at 40°C;
- Place a dipstick into the microwell;
- Incubate for another 3 minutes at 40°C;
- Inspect the color intensities of the lines on the strip;
- Interpret the test results.

**Table 1. Limits of detection**

	<b>Compounds (MRL-ppb)</b>	<b>Limits of detection ppb (µg/L)</b>
<b>Penicillins</b>	Penicillin-G (4)	2 - 3
	Ampicillin (4)	3 - 4
	Amoxicillin (4)	3 - 4
	Oxacillin (30)	12 - 18
	Cloxacillin (30)	6 - 8
	Dicloxacillin (30)	6 - 8
	Nafcillin (30)	30 - 50
<b>Cefalosporins</b>	Cefacetrole (125)	30 - 40
	Cefalonium (20)	3 - 5
	Cefazolin (50)	20 - 22
	Cefoperazone (50)	3 - 4
	Cefquinome (20)	20 - 30
	Cetiofur (100)	12 - 16
	Cephapirin (60)	6 - 8

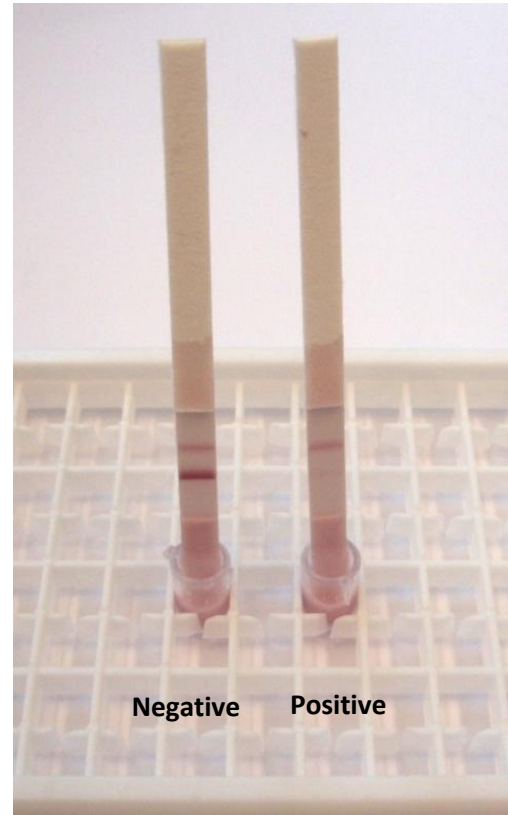


**Fig. 1. Interpretation of results**

### Visual interpretation of results (Fig. 1)

Make visual readings as follows:

1. First check whether the control line is present. It should initially be faint but clearly visible. If it is not visible, regard the analysis as invalid and do not attempt to interpret. Repeat the test with a new set of microwell and strip;
2. If the control line is visible, compare the color intensity of the test line to that of the control line:
  - a. If the test line is darker in color than the control line, then the result is **NEGATIVE**, which means that the milk sample contains no antibiotics or antibiotics at a lower level than the value stated in **Table 1**;
  - b. If the test line is as intense as or lighter in color than the control line, then the result is **POSITIVE**, which means that the milk sample contains antibiotics at or above the level stated in **Table 1**.
  - Samples of negative and positive readings on actual test strips are shown in **Figure 2**.
3. If you hesitate, consider the sample **POSITIVE** and confirm this interpretation by making a second visual reading in about 10 minutes;
4. Optional, read the results with a test strip reader (Detekt RDS-1000 reader).



**Fig. 2. Samples of negative and positive readings on SensiT™  $\beta$ -lactam test strips**