

# ProXpress (GST-Tag) - Competitive Rapid Test Card Manual

Cat. No.: HX002322-5

Unit size: 5

## Expected Use

Rapidly detects GST-tagged protein products obtained from prokaryotic and eukaryotic expression systems.

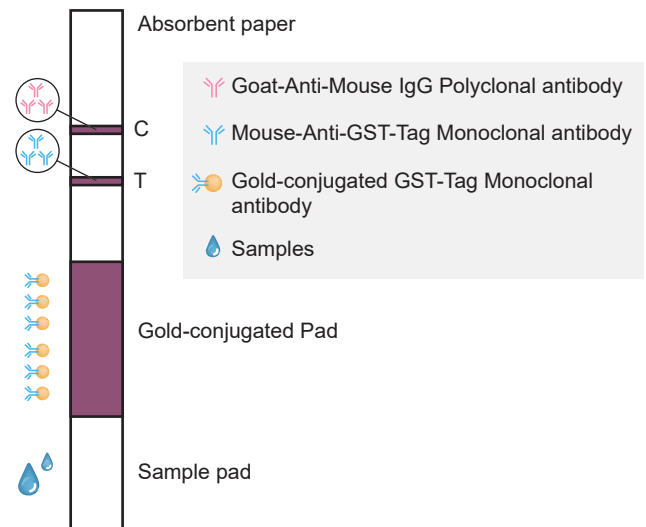
## Detection Principle

This product is a semi-quantitative protein detection reagent that relies on the use of a colloidal gold-based lateral flow assay. The foundation of this product is comprised of various components, such as a sample pad, a gold-conjugated pad, a chromatography membrane, and absorbent paper.

When administering the assay, users will add a drop of the test sample onto the sample pad, which then undergoes chromatography via capillary effects. When GST-tagged protein is present in the test sample pass through the gold-conjugated pad, forming a purplish-red band.

Moving onto the control line (C line), the gold-conjugated -mouse monoclonal antibody will be captured by the immobilized goat-anti-mouse IgG polyclonal antibody on the C line, resulting in a purplish-red band.

By carefully observing the coloration of both the T and C lines, users can determine the presence or absence of the GST-Tagged protein they are testing for.



Schematic Diagram of the Test Principle

## Package Contents

1. GST-Tag protein rapid test cards
2. ProXpress dilution buffer
3. Instructions

## Storage & Validity

Stored in a cool place, 4~30°C, do not freeze, avoid direct sunlight. Valid for 12 months.

## Instructions

1. Begin by letting the test card equilibrate to room temperature before conducting any further steps. This is crucial to ensure accurate results.
2. The proper pre-dilution of test samples is essential to obtain reliable results. To maintain the concentration of the test protein between 30-3000 ng/ml, make sure not to exceed or fall below this concentration range. Concentrations higher than 3000 ng/ml can result in weak or barely visible color development of the T line, leading to distorted protein concentration interpretation. Conversely, low protein concentrations below 30 ng/ml can weaken the color development of the T line compared to the negative control T line, resulting in false-negative results.  
If you know the concentration of the target labeled protein, you can directly dilute the sample with ProXpress dilution buffer to a concentration of 300 ng/ml.  
If you don't know the concentration, you can perform a 30-fold dilution of the sample from a bacterial lysate, mammalian cell, yeast, insect cell lysate. Ensure thorough mixing by vortexing.
3. Draw 20  $\mu$ l of the pre-diluted test sample using a micropipette and dispense it into the sample well.
4. Next, add 50  $\mu$ l of ProXpress dilution buffer to the sample well. You can accomplish this by gently adding two drops vertically from the dropper.
5. After completing the previous steps, read the results after 10-15 minutes.

Note: If the test result of the sample after pre-dilution shows very weak color development and is difficult to discern with the naked eye, this may indicate the possibility of an excessive sample concentration. In such cases, it is best to repeat the test with a second 100-fold dilution of the pre-diluted sample. If visible bands appear on the T line, it confirms that the initial weak color development was indeed due to excessive protein concentration. If there is suspicion that the color difference between the T line and the negative control T line is challenging to distinguish due to low protein concentration, the dilution factor in the pre-dilution step can be reduced to 5-fold. However, we do not recommend a dilution factor lower than 5-fold, as testing results in such cases can be influenced by complex components in the protein solution and lead to reduced testing accuracy.

Overall, ensure to follow the steps above to obtain reliable and accurate results.

## Product Performance Indicators

The test strip has a minimum detection limit of 30 ng/mL. In cases where the GST-tagged protein concentration falls within the range of 30 ng/mL to 3000 ng/mL, the color depth of the T line displays a positive correlation with the protein concentration. As the protein concentration increases within the range of 3 µg/mL to 10 µg/mL, the T line's color appears lighter.

## Results Interpretation

1. **Positive result:** The color development of both the C and T lines.
2. **Negative result:** The color development of the C lines, and T lines no color visible.
3. **Invalid Result:** If no color is observable on the C line, regardless of the presence of color on the T line. This indicates that the reagent is ineffective, rendering the test invalid.

### ProXpress (GST-Tag)



Test card color rendering display diagram

## Additional Information

Substance	Compatible Concentration	Substance	Compatible Concentration
NaCl	1.5M	EDTA	5mM
Urea	0.4M	Glycerol	10%
TritonX-100	1%	KCl	0.5M
Tween-20	1%	CHAPS	1.0%
SDS	0.20%	RIPA	100%
NP-40	1%	—	—

## Troubleshooting

Observation	Possible Cause	Recommended Action
No Test line detected	The sample did not contain GST-Tag protein	Verify correct test card is used.
		Verify presence of Flag-Tag protein via alternative method (e.g. ELISA or Western Blot).
Low intensity test lines	Sample concentration below the lower limit of the working concentration range	Retest by reducing the sample dilution to a 5-fold dilution.
	Sample concentration above the upper limit of the working concentration range	Repeat the test with a second dilution of test sample.
No control line detected	Incorrect operation	Repeat the procedure according to the instructions.
	Test card exceeds expiration date	Use the test card within the expiration date.

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