

# MemCode™ Reversible Protein Stain Kit – For Nitrocellulose Membrane

24580

1438.3

Number	Description
24580	<b>MemCode™ Reversible Protein Stain Kit for Nitrocellulose Membranes</b> , sufficient material for 10 (8 cm x 8 cm) nitrocellulose membranes

**Kit Contents:****MemCode™ Reversible Protein Stain**, 250 ml**MemCode™ Destain**, 1000 ml**MemCode™ Stain Eraser**, 500 ml**Storage:** Store kit at room temperature.


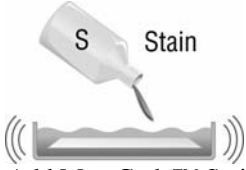

## Introduction

MemCode™ Reversible Protein Stain is a sensitive stain for detecting proteins on nitrocellulose membranes to confirm the efficiency of protein transfer. The staining method is simple, quick and results in turquoise-blue bands that do not fade and are easily photographed for future reference. MemCode™ Reversible Protein Stain has a high affinity for protein but does not permanently bind. Furthermore, the dye has minimal nonspecific interactions with nitrocellulose and reagents used for protein transfer. The stain can be easily reversed in less than 15 minutes, and subsequent Western blot detection is unaffected because the stain is completely removed and does not alter the protein.

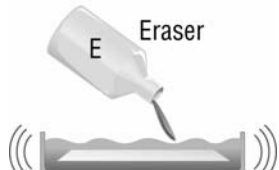


Other protein stains available for nitrocellulose membranes have disadvantages compared to MemCode™ Stain. For example, Ponceau S is less sensitive and results in red bands that easily fade and are difficult to photograph. Coomassie dye is a sensitive stain, but it permanently binds to proteins and can interfere with Western blotting.

## Procedure Summary

### A. Staining Protocol

- 1. Wash membrane with ultrapure water.
- 2. Add MemCode™ Stain. Shake 30 seconds.
- 3. Protein bands stain turquoise blue.
4. Destain background: rinse 3× and then shake 5 minutes in MemCode™ Destain Solution.
5. Rinse 4× and wash 5 minutes in ultrapure water.

### B. Erasing Protocol

- 1. Add MemCode™ Stain Eraser. Shake 2 minutes.
- 2. Rinse 4× in ultrapure water.
- 3. Wash 5 minutes with ultrapure water.

## Additional Materials Required

- Ultrapure water
- Nitrocellulose membrane containing transferred proteins (**Note:** For PVDF membranes, use Product No. 24585).
- Rotary platform shaker for membrane agitation during incubations

## Procedure for Reversible Staining of Proteins on Nitrocellulose Membranes

**Important Note:** For all steps, use sufficient volumes to completely immerse the membrane, and agitate at a moderate speed on a rotary platform shaker. Do not allow membrane to become dry during the procedure.

### A. Stain

1. Rinse the nitrocellulose membrane containing the transferred proteins by adding ultrapure water to the membrane tray and quickly decanting.
2. Add ~25 ml of the MemCode™ Reversible Protein Stain to the nitrocellulose membrane. Agitate at room temperature for 30 seconds on a rotary platform shaker. Stained proteins appear as turquoise-blue bands.

### B. Destain (remove background)

1. Add ~25 ml of MemCode™ Destain Reagent to the membrane and quickly decant the solution. Repeat this step two additional times.
2. Add ~25 ml of the Destain Reagent to the membrane and agitate for 5 minutes on a rotary platform shaker.
3. Rinse the membrane four times by adding ultrapure water to the tray and quickly decanting.
4. Wash the membrane with ultrapure water for 5 minutes on a rotary platform shaker with agitation.

### C. Erase the Stain (remove stain from bands)

1. Add 30 ml MemCode™ Stain Eraser to the membrane and agitate for 2 minutes on a rotary platform shaker.  
**Note:** Two minutes of agitation with Stain Eraser is optimal for most proteins but it may be extended to 5 minutes.
2. Rinse the membrane four times by adding ultrapure water to the tray and quickly decanting.
3. Wash membrane with ultrapure water for 5 minutes on a rotary platform shaker with agitation.

## Troubleshooting

Problem	Cause	Solution
Bands faint or not visible	Low amounts or no protein present in the sample	Determine the protein concentration in the original sample
Stain is not completely reversed	Membrane was allowed to dry before reversing	Keep the membrane wet
	High protein concentration in the sample	Extend incubation in the Stain Eraser up to 5 minutes
		Reduce the protein concentration in the sample

## Related Thermo Scientific Products

<b>24585</b>	<b>MemCode™ Reversible Protein Stain Kit – For PVDF Membrane</b>
<b>88013</b>	<b>Nitrocellulose Membrane, 0.2 µm, 7.9 x 10.5 cm, 15 sheets/pkg</b>
<b>34075</b>	<b>SuperSignal® West Dura Extended Duration Substrate*, 100 ml</b>

\*SuperSignal® Technology is protected by U.S. Patent # 6,432,662.

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