

SuperKine™ Dilution Solution for Ultra-Sensitive ECL

Item No: BMU112-EN

Size: 20 mL/50 mL



technical support



promotional information

	Product Description: SuperKine™ Ultra-Sensitive ECL Dilution Buffer for Western Blot Color Development		
	Item No: BMU112-EN		Lot No: See the label on the outside of the product packaging
	Form: Ready-to-use solution		Application Testing: WB、IP
	Saving Tips: Store away from light at 4°C. Shelf life: 2 years.		Important Notes: None

Product Applications

Principles of Application: This product is a dedicated dilution buffer for the (BMU102-EN) ultra-sensitive ECL chemiluminescent substrate, specifically developed for protein luminescence detection in Western blots. The formulation has been precisely optimized with mild, non-interfering components to accurately dilute ECL Solution A, effectively addressing issues such as signal overexposure, band whitening, high background, and signal quenching that occur during the detection of high-abundance proteins. Through standardized dilution procedures, it ensures a controllable luminescent signal and uniform, stable imaging, significantly improving experimental reproducibility and data reliability. It is suitable for both conventional and high-sensitivity Western blot imaging applications.

Application Recommendations:

Unique Advantages	User Experience
Signal Control	Precisely dilute the luminescent substrate to prevent overexposure and whiteout caused by high-concentration proteins, balance the luminescence intensity, and accommodate the detection of proteins with both high and low abundances.
High Compatibility	Exclusively formulated to be compatible with the ultra-sensitive ECL luminescent solution (Component A); does not disrupt the system, causes no background interference or signal quenching, and does not affect the stability of the substrate's luminescence.
High Stability	A sterile buffer system with extremely low impurity levels and minimal batch-to-batch variation, ensuring consistent experimental reproducibility.
Easy to Operate	Can be stored for 2 years without affecting its usability.
Reliable Data	Test results from various instruments were all satisfactory.

Application Recommendations:

Note: This effectively optimizes imaging results, producing clear and uniform bands, and ensures the accuracy and validity of quantitative and qualitative experimental data. **If the protein concentration is high and overexposure (whitening) occurs, we recommend diluting the ECL A solution at a ratio of 1:100 before using this product for the first time.**

1. Application Scenarios

When detecting high-abundance target proteins, dealing with extremely strong signals, or encountering issues such as overexposure, whitening, or blurred edges in repeated imaging, ECL Solution A must be diluted with this diluent before preparing the working solution; for low-abundance, weak-signal samples, use this diluent as appropriate based on experimental requirements.

2. Dilution Procedure

Before use, precisely dilute ECL Solution A with this dedicated diluent at a 1:100 volume ratio (1 part Solution A + 99 parts dedicated diluent). Mix thoroughly by inverting the container, then let it stand at room temperature until ready for use.

3. Working Solution Preparation

Thoroughly mix the diluted Solution A with the original ECL Solution B in a 1:1 volume ratio to prepare the ECL working solution. Perform all steps in the dark and use the solution immediately after preparation.

4. Standard Incubation and Imaging

Discard the TBST wash solution from the membrane. Apply the prepared working solution evenly over the surface of the blot membrane, ensuring there are no bubbles or dry spots, and then proceed with luminescence imaging. Use just enough working solution to completely cover the membrane surface to avoid wasting reagent or leaving any areas uncovered.

Sample Results:

	RLU	Exposure Time (s)
Undiluted	20777609.33	0.315
1: 10	11642399.33	0.865
1: 50	2918845.67	6.889
1: 100	1239117.00	9.501
1: 150	923250.00	20.478
1: 200	880055.00	21.897
1: 250	419637.67	23.447
1: 300	289000.00	46.912

Important Notes:

1. This diluent is intended solely for diluting ECL Solution A. Do not use it to dilute Solution B, antibodies, or other experimental reagents, as this may disrupt the chemiluminescent system and result in signal failure.
2. A dilution ratio of 1:100 is recommended. For samples with high protein abundance and very strong signals, the dilution ratio may be appropriately increased; for samples with weak signals, the dilution ratio may be slightly reduced. Never use the undiluted solution directly to detect high-abundance proteins.
3. Working solutions must be prepared immediately before use and used as soon as possible after preparation. Prolonged storage will cause a decline in luminescence intensity, affecting imaging results.
4. All operations must be performed in a clean environment to prevent the introduction of impurities, detergents, or acidic/alkaline

contaminants, which can cause increased background noise and abnormal luminescence.

5. Keep the incubation and imaging processes away from light at all times; strong light will rapidly quench the luminescent signal, resulting in a failed assay.

6. If there is excessive washing solution remaining on the membrane surface, drain off the excess liquid before adding the working solution to avoid diluting the working solution and reducing luminescence sensitivity.

7. For optimal experimental results, gently shake the solution up and down to mix it thoroughly before use.

References:

[1] NGF-Induced Nav1.7 Upregulation Contributes to Chronic Post-surgical Pain by Activating SGK1-Dependent Nedd4-2 Phosphorylation. Molecular Neurobiology volume 58, pages964–982(2021)

FAQ:

Problem	Possible Cause	Solution
Signal Too Strong or Background Too High	1. Solution A has not been diluted or has not been diluted sufficiently. 2. Antibody (primary/secondary) concentration is too high.	1. Increase the dilution factor of Solution A (e.g., from 2-fold to 5-fold). 2. Further reduce the dilution ratio of the primary or secondary antibody.
Signal is too weak or absent	1. Solution A is diluted too much. 2. Insufficient antigen loading or poor transfer efficiency.	1. Reduce the dilution factor of Solution A (e.g., from 5-fold to 2-fold). 2. Increase the loading amount and check the transfer efficiency.
Rapid Decay of the Fluorescent Signal	1. The HRP concentration is too high, causing the substrate to be consumed rapidly.	1. Appropriately reduce the concentration of the secondary antibody.

Recommended Products:

Item No.	Product Name	Reason for Recommendation
BMU102-EN	SuperKine™ West Femto Maximum Sensitivity Substrate	High sensitivity, high efficiency, stable signal
BMU103-EN	SuperKine™ Enhanced Antibody Dilution Solution	Signal amplification saves antibodies, low background, suitable for a wide range of immunological experiments

Disclaimer: This reagent is intended for research use only and is not suitable for clinical diagnosis or other purposes.