Mammalian Tissue Protein Extraction Reagent

Catalog number: AR0101

Boster’s Mammalian Tissue Protein Extraction Reagent is a ready-to-use Western blot related reagent solution used for efficient extraction of total soluble protein in nondenatured state from animal tissues.

This package insert must be read in its entirety before using this product. For research use only. Not for use in diagnostic procedures.
# Mammalian Tissue Protein Extraction Reagent

**Catalog Number:** AR0101

## Overview

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<tr>
<th><strong>Product Name</strong></th>
<th>Mammalian Tissue Protein Extraction Reagent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SKU/Catalog Number</strong></td>
<td>AR0101</td>
</tr>
<tr>
<td><strong>Physical State</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Pack Size</strong></td>
<td>100 mL (100 assays for 0.1g of tissue)</td>
</tr>
<tr>
<td><strong>Recommended working concentration</strong></td>
<td>1mL of extraction reagent per 0.1g of tissue for tissue samples homogenization</td>
</tr>
<tr>
<td><strong>Storage &amp; Expiration</strong></td>
<td>Upon receipt store at 4°C. Mammalian Tissue Protein Extraction Reagent is stable for one year. Product is shipped on ice.</td>
</tr>
<tr>
<td><strong>Equivalent</strong></td>
<td>Thermofisher (Product No. 78510); Millipore Sigma (Product No. C3228)</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Boster’s Mammalian Tissue Protein Extraction Reagent is a ready-to-use Western blot related reagent solution used for efficient extraction of total soluble protein in non-denatured state from animal tissues.</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>Immunoassays: WB, ELISA, RIA, immunoprecipitation; reporter assays; protein kinase assays; protein purifications; folding studies; chromatographic studies; DNA-protein interaction assays</td>
</tr>
<tr>
<td><strong>Cite This Product</strong></td>
<td>Mammalian Tissue Protein Extraction Reagent (Boster Biological Technology, Pleasanton CA, USA, Catalog # AR0101)</td>
</tr>
<tr>
<td><strong>Reagent Type</strong></td>
<td>Universal tissue extraction buffer, detergent solution, cell lysis buffer</td>
</tr>
<tr>
<td><strong>Usage</strong></td>
<td>Obtaining homogenous tissue cell lysates with soluble protein extracts</td>
</tr>
<tr>
<td><strong>Reactivity/severeness</strong></td>
<td>Bland, minimal amount of detergent, detergent is dialyzable</td>
</tr>
<tr>
<td><strong>Enzymatic Activity</strong></td>
<td>None; use additives to add function</td>
</tr>
<tr>
<td><strong>Additional components compatibility</strong></td>
<td>Compatible with additives, e.g. protease inhibitors (PMSF), reducing agents, chelating agents, salts</td>
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Description

Mammalian Tissue Protein Extraction Reagent is a ready-to-use Western blot related reagent solution used for efficient extraction of total soluble protein in nondenatured state from animal tissues by homogenization and cell lysis utilizing a dialyzable mild detergent at low concentration, for maximal protein solubilization and minimal interference with protein biological activity enabling direct use in downstream analysis.

Background

Extraction of tissue proteins being an essential step in the process of protein sample preparation is critical to successful protein analysis. Successful tissue protein extraction requires efficient cell lysis and protein solubilization, while preserving protein integrity and immunoreactivity. The varying tissue composition in different tissue samples implies different approaches for efficient and homogenous tissue protein extraction. The Mammalian Tissue Protein Extraction Reagent was designed for use with all tissues, independent of mechanical extraction methods. A mild nondenaturing and easily dialyzable detergent is added to the solution that aids in dissolving cell membranes and enhances solubilization of total protein without compromising function, and the neutral pH and salt concentration of the reagent enable more efficient extraction from cellular compartments yielding homogeneous lysates. The produced cell lysates are directly compatible with reporter gene expression assays (luciferase, beta-galactosidase, chloramphenicol acetyl transferase, CAT, alkaline phosphatase), protein kinase assays (PKA, PKC, tyrosine kinase), phosphatase assays (general phosphatases, tyrosine phosphatases), immunoassays (Western blots, ELISAs, RIAs, immunoprecipitation), Coomassie-Blue and silver staining, protein purification procedures, electrophoresis, folding studies, chromatographic studies, DNA-protein interaction assays (gel-shift assays), and many other downstream applications.

Additional Materials Required

- Protease inhibitor (Product No. AR1182) and phosphatase inhibitor (Product No. AR1183)
- 2 ml microcentrifuge tubes
- Tissue homogenizer
- Microcentrifuge capable of spinning at 10,000 x g
Procedure for Tissue Lysis

**Note**: Pre-chill an appropriate volume of Mammalian Tissue Protein Extraction Reagent at 4 °C. If desired, add protease inhibitor and phosphatase inhibitor to the lysis buffer immediately before use.

1. Place the fresh tissue into chilled PBS and rinse several times. Mince the tissue into small pieces.
2. Add Mammalian Tissue Protein Extraction Reagent to the tissue at 10:1. (i.e., Add 10 mL chilled lysis buffer per gram of tissue.) Use a smaller volume of reagent if a more concentrated protein extract is required.
3. Homogenize for several minutes at high speed until no tissue chunks remain.
4. Incubate on ice for 30 minutes.
5. Centrifuge at ~10000 x g for 10 minutes.
6. Transfer supernatant to a new tube for further analysis.

**Precautions**

- All steps of protein lysis should be operated on ice or at 4 °C.
- Use BCA Protein Assay Kit (Product No. AR0146) to quantify lysed proteins. Bradford Protein Assay kit is not recommended.

**Example Data using Mammalian Tissue Protein Extraction Reagent**

![Protein yield (ug per mg tissue)](chart)

**Figure 1.** Tissue cell lysis protein yield with Mammalian Tissue Protein Extraction Reagent

Mouse tissue proteins were extracted from different mouse tissues following the Mammalian Tissue Protein Extraction Reagent protocol. The protein concentration of each lysate was determined by BCA Protein Assay Kit (Product No. AR0146) to determine protein yield per milligram of starting tissue.
Figure 2. Protein extraction from mouse tissues using Mammalian Tissue Protein Extraction Reagent

Proteins were extracted from mouse tissues following the Mammalian Tissue Protein Extraction Reagent protocol. Lysates (20ug) were separated by SDS-PAGE and transferred to a nitrocellulose membrane. Incubate with primary antibodies. Images were generated using Boster Hypersensitive ECL chemiluminescence substrate (Product No. AR1170).

Related Boster Products

AR1182 Broad Spectrum Protease Inhibitor Cocktail
AR1183 Broad Spectrum Phosphatase Inhibitor Cocktail
AR0146 BCA Protein Assay Kit
AR0138 SDS-PAGE Gel Preparation Kit
AR1170 Hypersensitive ECL Chemiluminiscence Substrate