HiPurA® Tissue Protein Extraction Reagent

Product Name	Product Code	Kit Packing
HiPurA® Tissue Protein Extraction Reagent	ML207-500ML	500ml

Intended Use:

Recommended for efficient extraction of total soluble protein in non-denatured state from animal tissues.

Introduction:

The study of proteins in living organisms is an integral part of life science research. Proteins are the most diverse group of biologically important molecules and are essential for cellular structure and function. The first step in protein analysis is cellular extraction. Maximal extraction and solubilization of protein from tissue samples is important to make the whole protein complement available for proteomic analysis. Successful tissue protein extraction requires efficient cell lysis and protein solubilization, while preserving protein integrity and immunoreactivity.

The varying protein composition in different tissue samples implies different approaches for efficient and homogenous tissue protein extraction. Further extraction of protein depends on the ability to rupture the animal tissues in such a manner that the protein of interest can be purified in a high yield, free from contaminants and in an active form. The extraction of proteins from animal tissues is relatively straightforward, as animal cells are enclosed only by a surface plasma membrane (cell envelope) that is only weakly held by the cytoskeleton. They are relatively fragile compared to the rigid cell walls of many bacteria and all plants and are thus susceptible to shear forces. Historically, physical lysis was the method of choice for protein extraction. However in recent years, detergent-based lysis methods have become standard.

Description:

HiMedia's HiMedia® Tissue Protein Extraction Reagent was designed for use with all tissues. It utilize a mild non-denaturing and easily dialyzable detergent that helps in dissolving cell membrane, ensuring efficient protein recovery while maintaining the biological activity of the proteins. The neutral pH and salt concentration of the reagent enable more efficient extraction from cellular compartments yielding homogeneous cell protein lysate which is suitable for many downstream applications.

Applications:

HiPurA® Tissue Protein Extraction Reagent is a ready-to-use solution used for efficient extraction of total soluble protein in non-denatured state from animal tissues. The prepared cell lysate may be used for reporter assays (e.g., luciferase, β-galactosidase, chloramphenical acetyltransferase),

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protein kinase assays (e.g., PKA, PKC, tyrosine kinase), immunoassays (e.g., Western blots, ELISAs, RIAs) and protein purifications and many other downstream applications. Also, the reagent is compatible with standard protein assays such as BCA Protein Assay and Coomassie – Blue and silver staining.

Composition:

HiPurA® Tissue Protein Extraction Reagent contains a proprietary detergent in 20 mM Bicine buffer and 150mM sodium chloride (pH 7.6).

Properties:

Appearance/ Color/ Clarity	:	Colorless clear solution and free of particles
pH	:	7.3-7.6
DNase & RNase	:	None detected
Suitability Test	:	This product has been tested and is suitable for use in extraction of proteins from tissues.

Storage Conditions:

HiPurA® Tissue Protein Extraction Reagent can be stored at room temperature (15-25°C). Under recommended condition, the reagent is stable for 6 months.

Material needed but not provided:

- Protease Inhibitor Cocktail (Product Code: ML051)
- Tissue Samples.
- 1X PBS Solution (Product Code: ML116) / 10X PBS Solution (Product Code: ML023)
- Centrifuge Tubes
- Refrigerated Centrifuge

Protocol:

Note: The reagent is filter sterilized and should be open under aseptic conditions.

1. Weigh Tissue sample. For ~1 g of tissue sample, use 20 ml of Tissue protein extraction buffer.

   Note: If concentrated protein extract is required, use smaller amount of reagent.

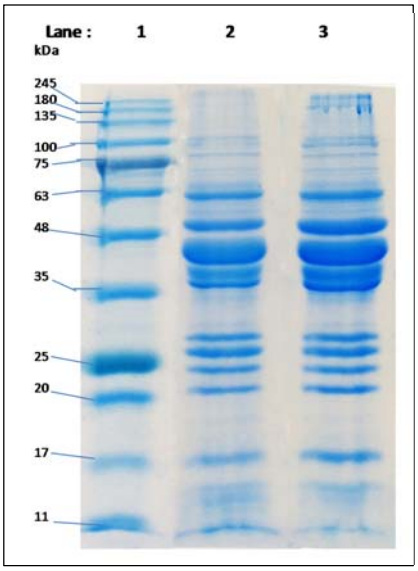
2. Add Protease Inhibitor cocktail (Product Code: ML051) to the extraction buffer just before use if desired.

3. Add 1/10th amount of the reagent first to a tissue sample and homogenize using mortar and pestle. Then add rest of the buffer. Mix well.

4. Centrifuge the sample at 10000 × g for 10 minutes at 4°C.

5. Collect the supernatant and continue with the further downstream analysis.

Data:



Well No.	Sample
1	Prestained protein ladder
2	Protein from chicken tissue extracted using competitor reagent
3	Protein from chicken tissue extracted using ML207

Fig.1: SDS-PAGE gel image representing protein extracted from Chicken tissue using Tissue protein extraction reagents.

Troubleshooting:

Problem	Cause	Solution
Low Protein Yield	Low protein expression	Optimize transfection procedure
	Insufficient amount of reagent or less incubation time for cell lysis	Add more reagent and increase incubation time and shake more vigorously during incubation
Degraded Protein	Protease contamination	Add Protease Inhibitor cocktail to the reagent prior to use

Warning and Precautions

Not for Medicinal Use. Read the SDS carefully before beginning the protocol. Guanidine hydrochloride causes severe irritation to eyes and skin. Wear protective gloves/protective clothing/eye protection/face protection. Follow good clinical laboratory practices while handling clinical samples. Standard precautions should be followed as per established guidelines. Safety guidelines may be referred in safety data sheets of the product.

Performance and Evaluation

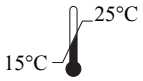
Performance of the solution is expected when the solution is stored at recommended temperature and within the expiry period.

Safety Information

The HiPurA® Tissue Protein Extraction Reagent is for laboratory use only, not for drug, household or other uses. Take appropriate laboratory safety measures and wear gloves and safety goggles when handling. Not compatible with disinfecting agents containing bleach. Please refer the Safety Data Sheet (SDS) for information regarding hazards and safe handling practices.

Technical Assistance

At HiMedia we pride ourselves on the quality and availability of our technical support. For any kind of technical assistance, mail at mb@himedialabs.com.



Storage temperature

Do not use if package is damaged

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07/2026

PIML207_1/0723

ML207-02