

Mitochondrial Isolation and Protein Extraction Kit

Catalog Number: PK10016

Product Information

This mitochondrial protein isolation and extraction kit, developed by Proteintech, efficiently separates high-purity mitochondria from animal tissues and cultured cells. The isolated mitochondria retain intact inner and outer membranes with fully functional mitochondrial capabilities, making them suitable for studies on mitochondrial physiological functions. Additionally, the isolated mitochondria can be lysed using the provided lysis buffer for subsequent protein analysis experiments such as Western blotting and immunoprecipitation.

About the Kit:

- This kit enables the isolation of high-purity mitochondria suitable for flow cytometric analyses.
- The kit provides a mitochondrial preservation solution for preserving isolated mitochondria for subsequent experiments.
- The kit provides a mitochondrial lysis buffer for efficient disruption of the isolated high-purity mitochondria.
- The kit provides the mitochondrial dye **Janus Green B** for rapid assessment of extraction efficiency.
- The 0.4% trypan blue solution enables evaluation of homogenisation efficacy. Cease homogenisation once 60% cell disruption is achieved, avoiding excessive processing.
- This kit is exclusively for fresh tissue samples. Do not use cryopreserved tissue.
- For preparing mitochondrial proteins, add the protease inhibitor mixture in advance. Otherwise, no addition is required.
- A minimum sample size of 20 million cells or 100 mg tissue is recommended. With this sample quantity, the kit can process 30 samples.

Product Component

Component	Catalog No.	Size
Mitochondrial Isolation Solution A	PK10016-A	30 mL
Mitochondrial Isolation Solution B	PK10016-B	30 mL
Mitochondrial Isolation Solution C	PK10016-C	15 mL
Mitochondrial Isolation Solution D	PK10016-D	2.5 mL
Mitochondrial Wash Solution	PK10016-E	30 mL*2
Mitochondrial Preservation Solution	PK10016-F	3 mL
Mitochondrial Lysis Solution	PK10016-G	10 mL
Janus Green B	PK10016-H	1 mL
SDS-PAGE Protein Loading Buffer (4X)	PK10016-I	2 mL
Common Protease Inhibitor Mixture	PK10016-J	1 mL
0.4% Trypan Blue Solution	PK10016-K	1 mL

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Store at -20°C for 12 months or 4°C for up to one month.

Package

Storage

FAQ

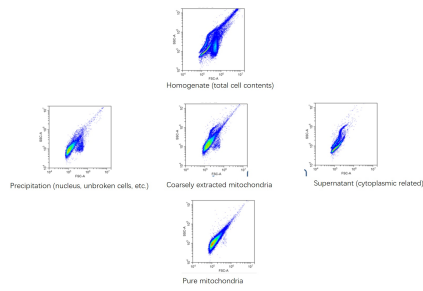
Problem	Possible Cause	Solution
No mitochondria detected	Excessive homogenisation leads to mitochondrial fragmentation	Reduce the number of homogenisation cycles
	The sample is not fresh	Isolate from fresh samples
	The sample size is too small	Increase the volume of the sample extracted
The purity of the mitochondria is not high	Improper handling resulted in the coarse mitochondria remaining in the upper layer of the high-purity mitochondrial separation solution, preventing the two from separating into distinct layers.	Carefully add the coarse mitochondria along the wall of the tube to the supernatant of the high-purity mitochondrial isolation solution, and centrifuge rapidly.

Notes

1. All steps for mitochondrial isolation must be conducted at low temperature.
2. Mitochondrial content and size vary across different samples. Adjust the volumes of mitochondrial isolation buffer and lysis buffer according to experimental conditions.

3. This kit is suitable only for fresh tissue samples. Do not use cryopreserved tissue.
4. The coarse or high-purity mitochondrial separation may be performed according to experimental requirements.
5. Mitochondria stored in mitochondrial preservation buffer should be used promptly.
6. When preparing mitochondrial protein samples, add Common Protease Inhibitor Cocktail (Catalog No. [PR20032](#)) to Mitochondrial Isolation Buffer A, Mitochondrial Isolation Buffer B, Mitochondrial Isolation Buffer C, Mitochondrial Wash Buffer, and Mitochondrial Lysis Buffer in advance. For phospho-antibody detection, add Phosphatase Inhibitor Cocktail (Catalog No. [PR20015](#)) in advance.
7. The common protease inhibitor mixture in this kit is suitable for normal protein extraction. For proteins prone to degradation, the Enhanced Protease Inhibitor Cocktail (Catalog No. [PR20016](#)) is recommended.
8. The SDS-PAGE Protein Loading Buffer contains a slight amount of DTT, which may emit a mildly pungent odour, but does not contain highly toxic Dithiothreitol.
9. Mitochondrial proteins extracted using this kit can be quantified by the BCA method. Do not use the Bradford method.
10. All reagents in this kit should be dissolved at room temperature. Do not heat.
11. For your safety and health, wear a lab coat and disposable gloves during operation.

Validation Data



Mitochondria were isolated from the livers of BALB/c mice using the Mitochondrial Isolation and Protein Extraction Kit (PK10016). The pellet and supernatant obtained during the isolation process were each diluted 100-fold and analysed by flow cytometry.

For technical support and original validation data for this product please contact

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