UltraPure Mitochondria and Mitochondrial Protein Extraction Kit

Key Features

High Purity

The protocol uses a two-step density gradient centrifugation method, ensuring a higher purity of the isolated mitochondria.

High Activity

The isolated mitochondria retain their intact structure and exhibit high biological activity.

Wide Application

The mitochondria extracted using this product can be used for:

- Mitochondrial function or enzyme activity studies
- Mitochondrial DNA (mtDNA) extraction
- Mitochondrial protein analysis, such as SDS-PAGE, Western Blot (WB), Immunoprecipitation (IP), and proteomics research

Cat No.	Size
BF7478	30 Assays

High Purity

100 mg of mouse liver tissue was processed according to the protocol to obtain the following fractions: liver homogenate, pellet (containing nuclei, unlysed cells, etc.), supernatant (cytoplasmic components), crude mitochondria, and purified mitochondria. Each fraction was diluted 1:100 in PBS and analyzed by flow cytometry.

As shown in Fig 1, the purified mitochondrial fraction displayed a distinct, uniformly distributed cluster, indicating a high degree of mitochondrial purity.

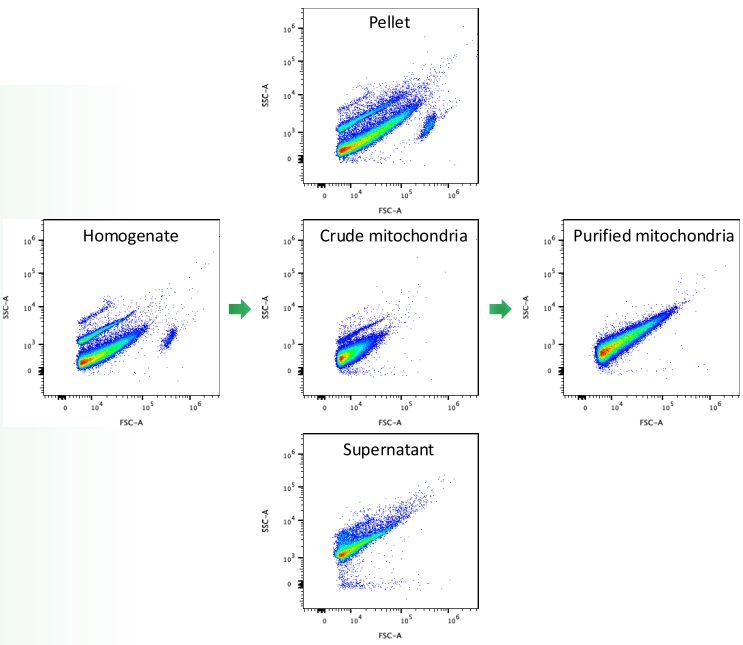

Fig 1. Flow cytometric analysis of different mouse liver fractions

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Mitochondria extracted from 100mg mouse liver tissue using BF7478 were stained with Janus Green solution.

Microscopic examination showed: Blue-green stained mitochondria appearing as rod-shaped or dumbbell-shaped structures, with frequent aggregation due to high mitochondrial density in liver tissue.

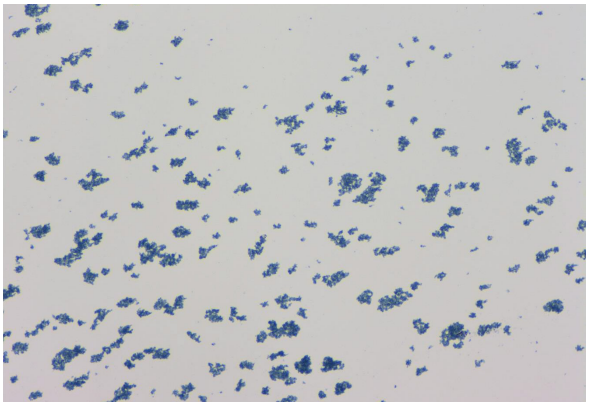

Fig 2. Janus Green Staining of Mouse Liver Mitochondria (200×)

High Activity

The isolated mitochondria were treated with MitoTracker Red, a membrane potential-dependent mitochondrial dye, and observed under a fluorescence microscope.

As shown in Figure 3, the stained mitochondrial suspension emitted red fluorescence, indicating that the mitochondrial membrane potential was well preserved and the extracted mitochondria remained highly active.

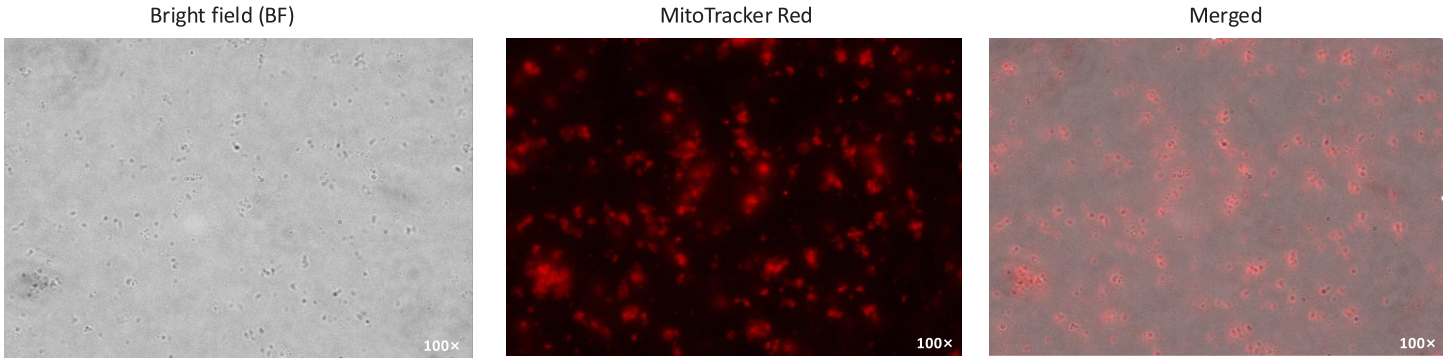

Fig 3. MitoTracker Staining of Mouse Liver Mitochondria

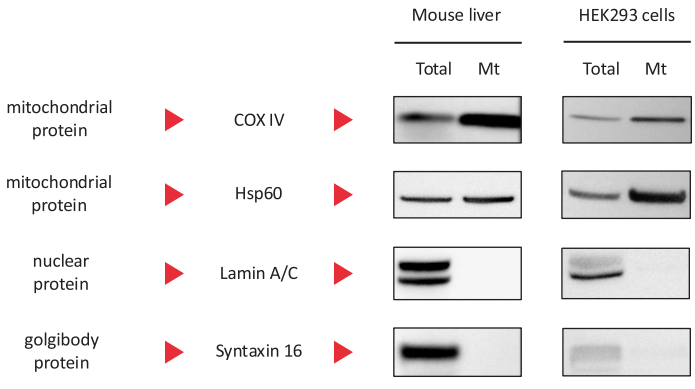

Fig 4. Western Blot Analysis of Mitochondrial Proteins

Mt: mitochondrial proteins extracted from mouse liver and HEK293 cells using BF7478.
Total: total proteins extracted from liver tissue and HEK293 cells using RIPA lysis buffer.
10 μg of sample was loaded per well after quantification by BCA assay.

Wide Application

The extracted mitochondria can be used for mitochondrial function studies, mitochondrial protein analysis, and mtDNA extraction.

As shown in Figure 4, COX IV and Hsp60 bands were much stronger in the mitochondrial fraction than in the total protein fraction, showing effective enrichment by BF7478. No Lamin A/C or Syntaxin 16 bands were detected, indicating minimal contamination from nuclei or Golgi.