

UltraPure Mitochondria and Mitochondrial Protein Extraction Kit

Key Features

High Purity

The two-step density gradient separation ensures high-purity mitochondrial isolation with minimal contamination from other cellular components

High Activity

Isolated mitochondria retain intact structure and biological activity, making them suitable for functional and enzymatic studies.

Wide Application

Each mitochondria are suitable for:

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

Cat No.

BF7478

Size

30 Assays

High Purity

A total of 100 mg of mouse liver tissue was processed following the kit protocol to generate the following fractions: liver homogenate, nuclear or unlysed cell pellet, cytosolic supernatant, 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 exhibited a distinct and uniform cluster distribution, indicating high mitochondrial purity.

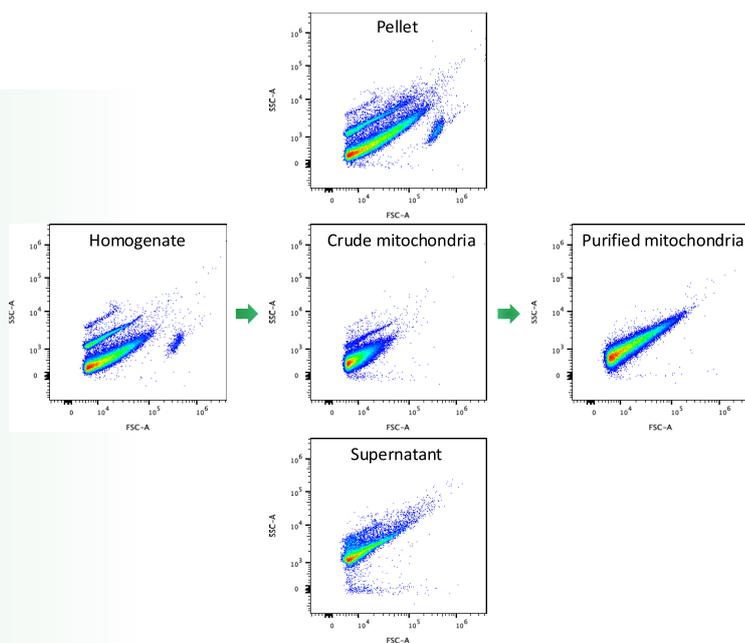


Fig 1. Flow cytometric analysis of different mouse liver fractions

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

Microscopic examination revealed blue-green stained, rod-shaped or dumbbell-shaped mitochondria, with occasional aggregation due to the high mitochondrial density in liver tissue.

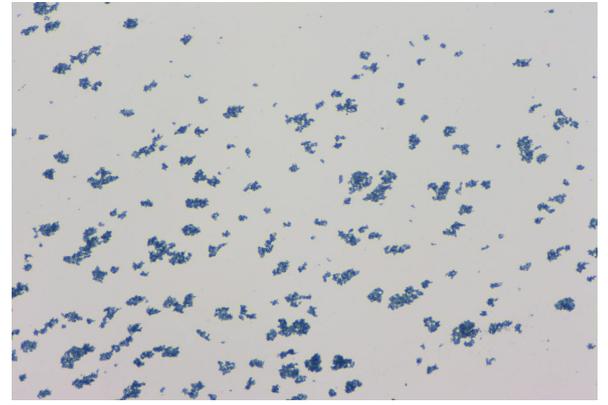


Fig 2. Janus Green Staining of Mouse Liver Mitochondria (200×)

High Activity

Isolated mitochondria were stained with MitoTracker Red, a membrane potential-dependent fluorescent dye, and observed under a fluorescence microscope.

As shown in Figure 3, the mitochondrial suspension emitted red fluorescence, indicating preserved membrane potential and high mitochondrial activity.

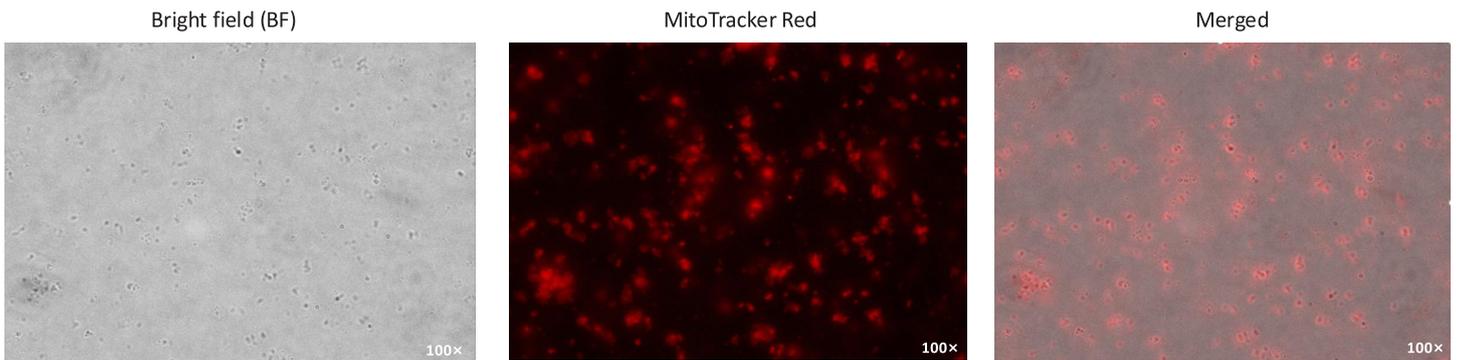


Fig 3. MitoTracker Staining of Mouse Liver Mitochondria

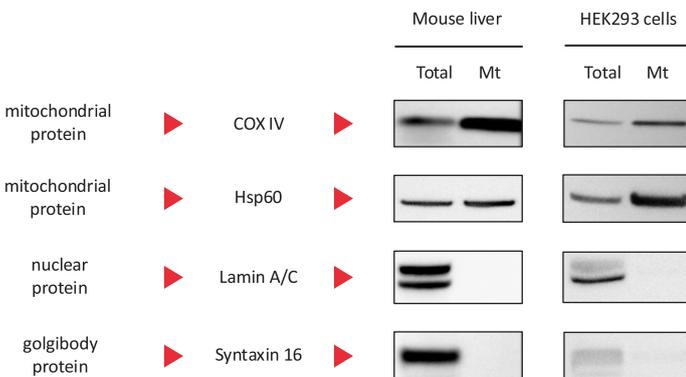


Fig 4. Western Blot Analysis of Mitochondrial Proteins

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 isolated mitochondria are suitable for mitochondrial function studies, mitochondrial protein analysis, and mtDNA extraction.

As shown in Figure 4, COX IV and Hsp60 bands were significantly enriched in the mitochondrial fraction compared to total protein samples, confirming effective mitochondrial isolation using BF7478. No Lamin A/C or Syntaxin 16 bands were detected in the mitochondrial fraction, indicating minimal nuclear or Golgi contamination.