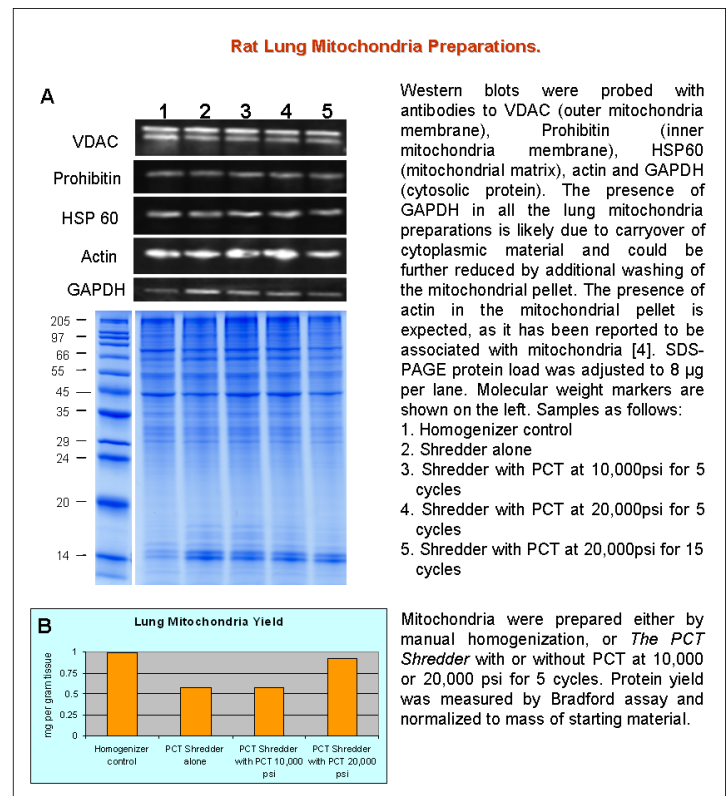
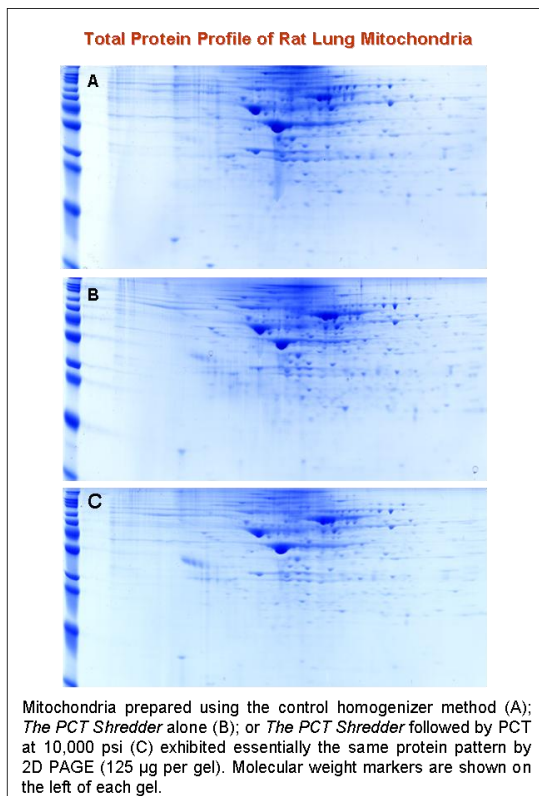


PBI MITOCHONDRIA ISOLATION KIT: RAT LUNG

A Kit for the Isolation of Intact Mitochondria for Proteomic Studies

Isolation of intact mitochondria from solid tissues is crucial for elucidation of mitochondrial function and dysfunction in conditions such as aging, diabetes and cancer. Proteomic analysis of mitochondrial proteins also requires efficient isolation methods [1]. As potential drug targets, high quality mitochondrial isolates are important for drug screening studies [2]. Mitochondria isolation from solid tissue is usually carried out using, labor-intensive homogenizer-based methods that require extensive operator experience [3]. Here we describe a semi-automated method that can be used to release mitochondria from solid fibrous tissues such as lung. This new method utilizes tissue disruption in *The PCT Shredder* or *The SHREDDER SG3* followed by extraction using pressure cycling. The protein profiles of mitochondria-enriched pellets thus prepared are shown to be comparable to control samples isolated using a traditional manual homogenizer method.



Mitochondria isolation from solid tissue is usually carried out using labor-intensive homogenizer-based methods that require extensive operator experience and are prone to high variability between researchers. *THE PBI MITOCHONDRIA ISOLATION KIT: RAT LUNG* uses a semi-automated method to generate a mitochondria enriched preparation using *The PCT Shredder* or *The SHREDDER SG3* for tissue homogenization. The rapid mechanical homogenization with either PBI shredder is followed by pressure cycling technology (PCT). Mitochondria prepared from freshly harvested or frozen tissue using the *PBI MITOCHONDRIA ISOLATION KIT: RAT LUNG* are intact and ideal for proteomic studies.

Features & Benefits:

- Easy-to-use Kit
- Obtain Intact Mitochondria
- Ideal for Proteomic Studies

Kit Contents

Product Name	Amount per Kit	Part Number
PBI Lung Mitochondria Isolation Buffer (PBI LMIB)	500mL	030-1024-001
FT500-S PULSE Tubes, Caps, and Rams	36 each	030-1023-004
Microcentrifuge Tubes with Matching Plastic Pestles and baskets	12 each	030-1023-005

For Research Use Only. Not for Use in Diagnostic Procedures.

Kit Storage

Store PCT LMIB at 4°C.

Equipment and Reagents Required But Not Provided:

1. *The PCT Shredder (KSFT-0001)* or *The SHREDDER SG3 (KSG3-0001)*
2. Round Bottom Centrifuge Tubes (such as a Beckman 355642)
3. A Compatible Fixed-angle Rotor (such as a Beckman F0630)
4. A Compatible Refrigerated Centrifuge Capable of Reaching 14,000 RCF (14,000 g) (such as a Beckman Allegra X-22R)
5. Refrigerated Microfuge Capable of Reaching 14,000 RCF (14,000 g)
6. Fine Scissors and Tweezers for Mincing Tissue
7. Small Dishes, such as 60mm Petri, for Mincing Tissue
8. Plastic Transfer Pipets
9. Barocycler NEP 2320 or NEP 3229, with Circulating Water bath.
10. Protease Inhibitors

Note: The **PBI MITOCHONDRIA ISOLATION KIT: RAT LUNG** works in conjunction with and requires PBI's *The PCT Shredder* or *The SHREDDER SG3* and a Barocycler. Shredders and Barocycler are sold separately.

Application Note

AN-00021: Isolation of Mitochondria from Rat Lung Using *The PCT Shredder* with Pressure Cycling Technology (PCT)

References

- [1] McDonald, T. et al. (2006) *Molec. Cell. Prot.* 5:2392-2411.
- [2] Armstrong (2007) *Brit. J. Pharm.* 151:1154-1165.
- [3] Rasmussen et al. (1997) *Anal. Biochem.* 252:153-159.
- [4] Rabilloud et al. (1998) *Electrophoresis* 19:1006-1014
- [5] *The PCT Shredder Manual*
- [6] *The SHREDDER SG3 Manual*

Ordering Information

To order **PBI MITOCHONDRIA ISOLATION KIT: RAT LUNG** or other accessories, please contact your local Pressure BioSciences Sales Representative.

Or, please visit: <http://www.pressurebiosciences.com>

