



## Mouse UCP-1 Quantification in Brown Adipose Tissue in University of Fribourg, Inst. of biochemistry

### CONTEXT

Our research group is working on circadian rhythms and biological clock, especially on their regulations at the molecular level. In the field, Mouse Uncoupling Protein 1 (UCP-1) is a mito transmembrane channel protein involved in thermogenesis and only found in brown adipose tissue. This study compares UCP-1 quantity between control mice (that at room temperature during experiment) and mice that are exposed to cold (4°C) during a couple of hours.

### PROTOCOL

Precellys® 24 Parameter :  
5000rpm, 2x50 sec., 5 sec. Break

1. Western blot against mouse UCP-1  
1st antibody: rabbit anti-UCP-1  
2nd antibody: infrared (IR)- labeled anti-rabbit
2. Detection of bands with odyssey Infrared Imaging System

### MATERIAL

- Precellys®24
- Precellys® kit CK28 (big ceramic beads)
- Sample : brown adipose tissue (between 30-50mg)
- Buffer : 25mM TrisHCl - 1mM EDTA - 1% Triton X-100 0.5% Na-deoxycholate : 500µl

### RESULTS

The lanes correspond to 8 different concentrations of total proteins in order to control the resolution by using the infrared imaging system. UCP-1 quantification studies enable us to get more information about body temperature regulation. Results between control and cold-exposed mice remain confidential.



30 mg of Brown Adipose Tissue from a 3-month old wild type female



Detection of lanes with Odyssey Infrared System by using IR-labeled 2nd antibodies. The lanes correspond to 10-30-50-70-20-40-60-80mg concentrations of total proteins.

### CONCLUSION

Precellys® is well adapted for easy extraction, as well as the homogenization of adipose tissue and transmembrane proteins. Sample preparation is not only easy but cross contamination free. Efficiency, saving time, and protein collection are the main benefits of the Precellys®.

For more details, please contact [precellys@bertin.fr](mailto:precellys@bertin.fr) or visit our website

**bertin**  
TECHNOLOGIES  
mastering innovation



**イムエス機器株式会社**

<http://www.technosaurus.co.jp>

- 東京  
〒162-0805 東京都新宿区矢来町 113 番地 TEL(03)3235-0661(代) FAX(03)3235-0669
- 大阪  
〒532-0005 大阪市淀川区三国本町2丁目12番4号 TEL(06)6396-0501(代) FAX(06)6395-2588
- 福岡  
〒812-0054 福岡市東区馬出 1 丁目 2 番 23 号 TEL(092)631-1012(代) FAX(092)641-1285

※会社名および商品名は、各会社の商標または登録商標です。  
※本カタログに記載の規格・仕様・外観は予告なく変更する場合がありますので御了承下さい。