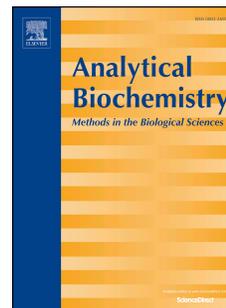


Accepted Manuscript

Proteomics of mammalian mitochondria in health and malignancy: From protein identification to function

Lidia Eremina, Natalya Pashintseva, Leonid Kovalev, Marina Kovaleva, Sergey Shishkin



PII: S0003-2697(17)30143-4

DOI: [10.1016/j.ab.2017.03.024](https://doi.org/10.1016/j.ab.2017.03.024)

Reference: YABIO 12665

To appear in: *Analytical Biochemistry*

Received Date: 31 October 2016

Revised Date: 7 March 2017

Accepted Date: 23 March 2017

Please cite this article as: L. Eremina, N. Pashintseva, L. Kovalev, M. Kovaleva, S. Shishkin, Proteomics of mammalian mitochondria in health and malignancy: From protein identification to function, *Analytical Biochemistry* (2017), doi: 10.1016/j.ab.2017.03.024.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Proteomics of mammalian mitochondria in health and malignancy: from protein identification to function

Lidia Eremina ^{a*}, Natalya Pashintseva ^a, Leonid Kovalev ^a, Marina Kovaleva ^a, Sergey Shishkin ^{a,b}

^a Laboratory of Biomedical Research, Bach Institute of Biochemistry, Research Center of Biotechnology of the Russian Academy of Sciences, 33 bd. 2 Leninsky Prospekt, 119071, Moscow, Russia

^b Department of Biochemistry, Medical Institute, Peoples' Friendship University of Russia, 6 Miklukho-Maklaya Street, 117198, Moscow, Russia

* Corresponding author.

E-mail address: leryominal@gmail.com (L. Eremina).

Abstract:

The mitochondrial set of proteins is a dynamic system, crucial for multiple functions of this organelle. Differential expression of genes in various tissues, alternative splicing, post-translational modifications, turnover and spatial dynamics of proteins are the factors that influence mitochondrial proteomes increasing their versatility. A wide range of high-throughput proteomic approaches are extensively used for identification, quantification and functional assessment of human and other mammalian mitochondrial proteins. This article reviews the methods and approaches which can be utilized for achieving one or another specific goal in mitochondrial investigations, and the recent advances in application of proteomics to study the roles of mitochondria in tumorigenesis and cancer progression.

Contents:

- 1. Introduction**
- 2. Proteomics of mammalian mitochondria**
 - 2.1. Isolation of mitochondria
 - 2.2. Methods and approaches
 - 2.3. Applications
 - 2.3.1. Protein identification and localization to mitochondria
 - 2.3.2. Protein quantification and detection of changes in protein abundance
 - 2.3.3. Post-translational modifications

Download English Version:

<https://daneshyari.com/en/article/7556753>

Download Persian Version:

<https://daneshyari.com/article/7556753>

[Daneshyari.com](https://daneshyari.com)