

# Accepted Manuscript

Mitochondrial dynamics in cancer-induced cachexia

Miranda van der Ende, Sander Grefte, Rogier Plas, Jocelijn Meijerink, Renger Witkamp, Jaap Keijer, Klaske van Norren



PII: S0304-419X(18)30072-6  
DOI: doi:[10.1016/j.bbcan.2018.07.008](https://doi.org/10.1016/j.bbcan.2018.07.008)  
Reference: BBACAN 88243  
To appear in: *BBA - Reviews on Cancer*  
Received date: 16 May 2018  
Revised date: 25 July 2018  
Accepted date: 26 July 2018

Please cite this article as: Miranda van der Ende, Sander Grefte, Rogier Plas, Jocelijn Meijerink, Renger Witkamp, Jaap Keijer, Klaske van Norren , Mitochondrial dynamics in cancer-induced cachexia. *Bbcan* (2018), doi:[10.1016/j.bbcan.2018.07.008](https://doi.org/10.1016/j.bbcan.2018.07.008)

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.

## Mitochondrial dynamics in cancer-induced cachexia

Miranda van der Ende<sup>a,b</sup>, Sander Grefte<sup>b</sup>, Rogier Plas<sup>a</sup>, Jocelijn Meijerink<sup>a</sup>, Renger Witkamp<sup>a</sup>, Jaap Keijer<sup>b</sup>, Klaske van Norren<sup>a,#</sup>

a Division of Human Nutrition, Wageningen University and Research, Wageningen, Netherlands.

b Human and Animal Physiology, Wageningen University and Research, Wageningen, Netherlands.

# Corresponding author: klaske.vannorren@wur.nl, +31 317 485 093

### Abstract

Cancer-induced cachexia has a negative impact on quality of life and adversely affects therapeutic outcomes and survival rates. It is characterized by, often severe, loss of muscle, with or without loss of fat mass. Insight in the pathophysiology of this complex metabolic syndrome and direct treatment options are still limited, which creates a research demand. Results from recent studies point towards a significant involvement of muscle mitochondrial networks. However, data are scattered and a comprehensive overview is lacking. This paper aims to fill existing knowledge gaps by integrating published data sets on muscle protein or gene expression from cancer-induced cachexia animal models. To this end, a database was compiled from 94 research papers, comprising 11 different rodent models. This was combined with four genome-wide transcriptome datasets of cancer-induced cachexia rodent models. Analysis showed that the expression of genes involved in mitochondrial fusion, fission, ATP production and mitochondrial density is decreased, while that of genes involved ROS detoxification and mitophagy is increased. Our results underline the relevance of including post-translational modifications of key proteins involved in mitochondrial functioning in future studies on cancer-induced cachexia.

### Keywords

Mitochondria

Mitochondrial dynamics

Cancer-induced cachexia

Muscle

Animal models

Download English Version:

<https://daneshyari.com/en/article/8429260>

Download Persian Version:

<https://daneshyari.com/article/8429260>

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