

Mitochondrial ABC Transporters and Iron Metabolism

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Abstract

The ABC [ATP-binding cassette] superfamily is a large family of membrane proteins that are found in all kingdoms of life and require ATP hydrolysis to transport substrates across membranes [1,2]. In this review, we will focus on the mitochondrial ABC transporters and their role in iron metabolism. Mitochondria are involved in a large spectrum of biological processes such as energy production, apoptosis, and signal transduction. They are also involved in iron homeostasis, which is essential for maintaining cellular function. Iron is a key component of many enzymes and proteins, including cytochrome c oxidase, which is involved in the electron transport chain. Mitochondrial ABC transporters play a role in the import and export of iron, as well as the regulation of iron levels. There are several mitochondrial ABC transporters, including Abcb10, Abcb6, and Abcb11. These transporters are involved in the import of iron into the mitochondria, as well as the export of iron from the mitochondria. They are also involved in the regulation of iron levels by transporting iron-binding proteins, such as ferritin and transferrin, across the mitochondrial membrane. The regulation of mitochondrial ABC transporters is complex and involves various mechanisms, including post-translational modification, protein-protein interaction, and gene regulation. Understanding the function and regulation of mitochondrial ABC transporters is important for understanding the role of iron in cellular function and disease. This review will provide an overview of the current knowledge of mitochondrial ABC transporters and their role in iron metabolism.

Keywords: ABC transporters; Mitochondria; Iron; Heme

Introduction

ATP-binding cassette (ABC) transporters belong to a large family of membrane proteins that are found in all kingdoms of life and require ATP hydrolysis to transport substrates across membranes [1,2]. They are involved in a large spectrum of biological processes such as energy production, apoptosis, and signal transduction. They are also involved in iron homeostasis, which is essential for maintaining cellular function. Iron is a key component of many enzymes and proteins, including cytochrome c oxidase, which is involved in the electron transport chain. Mitochondria are involved in a large spectrum of biological processes such as energy production, apoptosis, and signal transduction. They are also involved in iron homeostasis, which is essential for maintaining cellular function. Iron is a key component of many enzymes and proteins, including cytochrome c oxidase, which is involved in the electron transport chain.

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