

Abstract

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This chapter discusses the toxicity of aflatoxin B1 (AFB1) on mitochondrial function. It starts with an overview of aflatoxins: what they are, where they are found, and the types that exist. The introduction also describes the routes of AFB1 exposure, biotransformation, metabolism, and excretion. Thereafter, the chapter explains the major toxic effects of AFB1 on the mitochondria. First, it discusses how AFB1 disrupts the levels of lipids, particularly cholesterol and phospholipids, which are the major lipid component of the mitochondrial membrane. The changes in the lipids can affect the mitochondrial membrane carriers, thereby affecting membrane transport. Second, it discusses how AFB1 affects the mitochondria membrane potential and permeability. Specifically, AFB1 reduces mitochondrial membrane potential and promotes mitochondrial permeability transition. Third, it discusses how AFB1 induced oxidative stress and apoptosis in mitochondria leading to mitochondrial damage. Lastly, it examines the effects of AFB1 on enzymes of the electron transport chain.