

综述

电压依赖性阴离子通道在线粒体依赖性细胞凋亡中作用的研究进展

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摘要 电压依赖性阴离子通道 (VDAC) 是线粒体外膜上含量极为丰富的孔状蛋白, 是细胞内代谢物分子进出线粒体的必经通道, VDAC的功能状态与线粒体的代谢和功能关系十分密切。VDAC的异常通常会引发线粒体功能紊乱, 导致ATP水平或转膜电位下降、细胞色素c释放等凋亡程序的启动。VDAC可与许多物质相互作用而发挥诱导细胞凋亡或抑制细胞凋亡的效应, 从而在线粒体依赖性细胞凋亡途径中有着十分重要的作用。VDAC对细胞凋亡的影响机制可应用于药物治疗靶点、外源化学物毒性机制的研究, 因此, VDAC的作用是近年来外源化学物所致细胞凋亡机制研究领域的热点问题。

关键词 [电压依赖性阴离子通道](#) [线粒体](#) [细胞凋亡](#) [毒性作用](#)

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Progress in voltage-dependent anion channels in mitochondria-dependent apoptosis

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Abstract

Mitochondrial voltage-dependent anion channels (VDAC) are a variety of porin protein abundantly located on outer mitochondrial membrane, which is considered a common pathway for metabolite exchange between mitochondria and cytoplasm. The accumulated evidence suggests that the state of VDAC be associated closely with functions of mitochondria. The abnormal state of VDAC will lead to mitochondria dysfunction, such as the decrease of ATP production and membrane potential, and cytochrome c release. Further more, VDAC can interact with many substances and produce mitochondria-mediated pro- or anti-apoptosis effects, which plays a very important role in mitochondria-dependent apoptosis pathways. The finding of VDAC can be applied to study the therapeutic target of drug and toxic mechanisms of xenobiotics. Consequently, studing role of VDAC have been considered a hot topic in the field of xenobiotics-induced apoptosis research in recent years.

Key words [voltage-dependent anion channels](#) [mitochondria](#) [apoptosis](#) [toxic actions](#)

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