

## **Mechanisms of neuroprotection by ischemic preconditioning: synaptic and mitochondrial modifications**

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Ischemic Preconditioning (IPC) has been shown to be a robust neuroprotective approach to protect against cerebral ischemia. IPC is modelled when tissues are exposed to mild ischemic insults and after a period of recovery they become highly resistant to a subsequent, more lethal ischemic insult. My laboratory has demonstrated that the ischemic tolerance that ensues following IPC occurs at the level of mitochondria and by modifications in synaptic function. Mitochondria are key players in ischemic/reperfusion injury hours to days following cerebral ischemia and thus an important target for IPC-induced neuroprotection. Excitotoxicity following cerebral ischemia plays a major role in the pathology that ensues following cerebral ischemia. This presentation will summarize several signaling pathways involved in mitochondrial and synaptic neuroprotection against ischemia following IPC.

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