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Targeting Apoptosis-Inducing Factor as a Novel Therapeutic Strategy for Preventing Perinatal Brain Injury

Perinatal complications such as asphyxia can cause brain injuries that are often associated with subsequent neurological deficits such as cerebral palsy or mental retardation. The mechanisms of perinatal brain injury are not fully understood, but mitochondria play a prominent role, not only due to their central function in metabolism, but also because many proteins with apoptosis-related functions are located in the mitochondrion. Among these proteins, coiled-coil-helix-coiled-coil-helix domain-containing protein 4 (CHCHD4) and apoptosis-inducing factor (AIF) have already been shown to make important contributions to neuronal cell death upon hypoxia-ischemia, but a better understanding of the mechanisms behind these processes is required for the development of improved and more effective treatments during the early stages of perinatal brain injury. This project has opened new perspectives in the comprehension of the mechanisms by which CHCHD4 and AIF are crucial proteins for brain damage after hypoxia-ischemia, and it has showed that AIF is a promising therapeutic target for improving outcome after perinatal brain injury.

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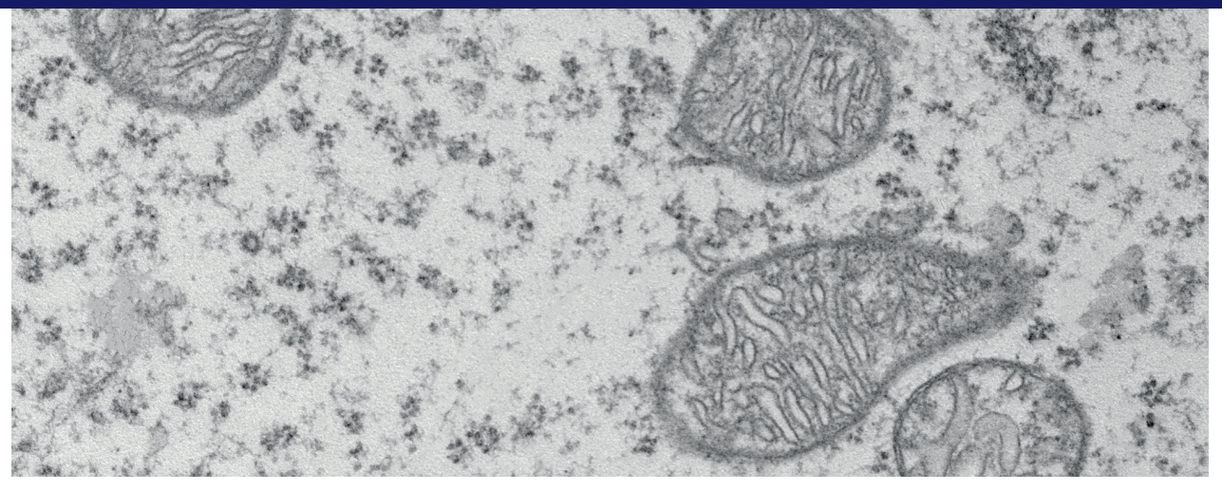

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