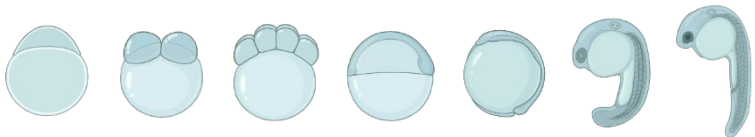


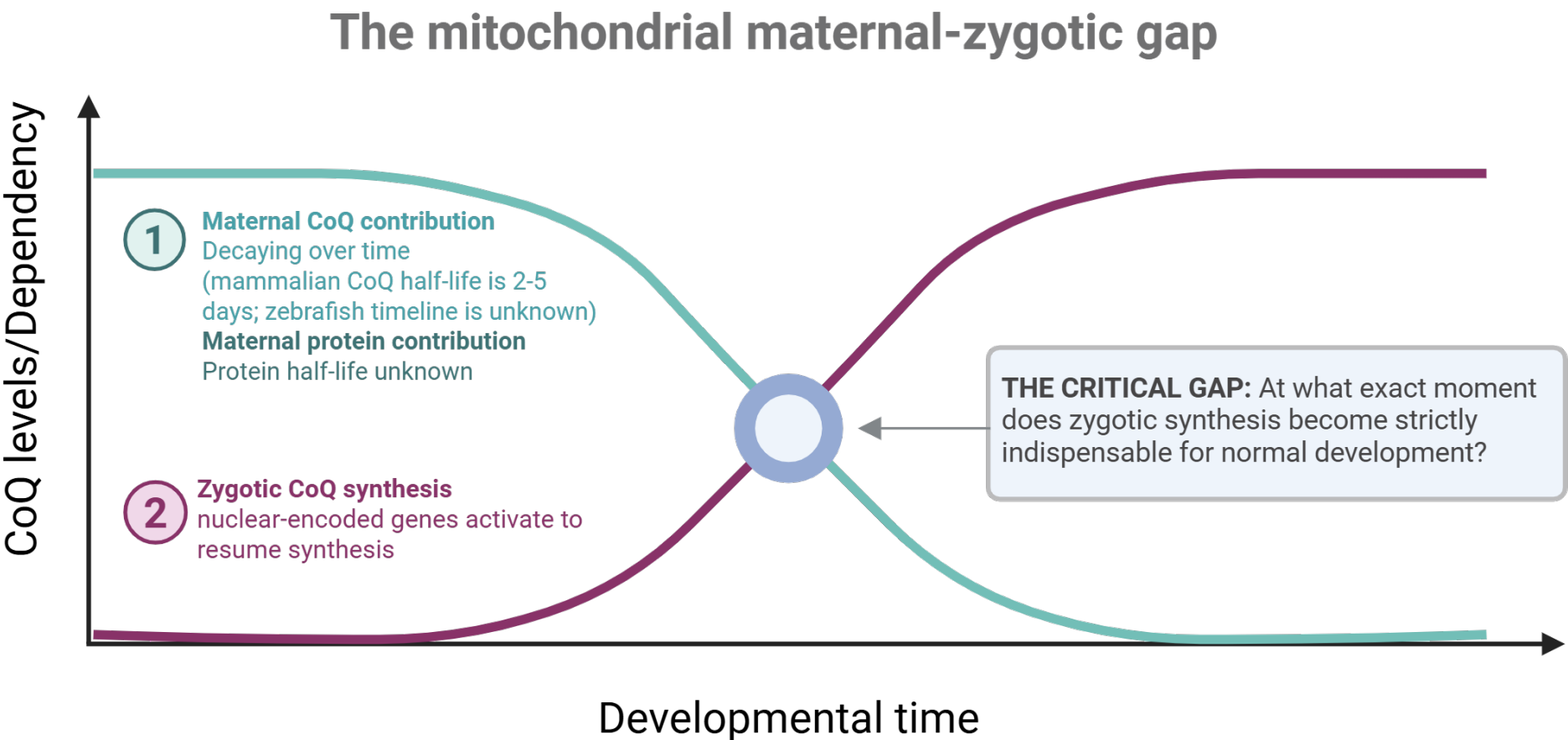
Maternal–zygotic mitochondrial transition: the role of Coenzyme Q in early zebrafish development



How long can a mother's energy sustain a new life before the embryo must power itself?



Mitochondria are dynamic life-engines. Beyond ATP, they drive nucleotide synthesis, lipid production, and calcium signalling. In zebrafish, total respiration increases linearly from 3 to 48hpf. But a major mystery remains: when do maternal supplies run out, and when do zygotic mitochondria take over?



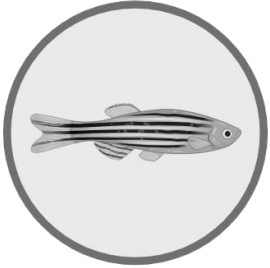
Your TFG toolkit



Molecular biology
Analyze gene expression and track the activation of zygotic coq genes
Genotype coq mutants



Biochemistry
Measure CoQ levels and oxygen consumption



In vivo modeling
Master the basic handling and observation of zebrafish as a model organism for early developmental studies

Addressing these questions will fundamentally clarify how long maternal mitochondrial components can support development and when zygotic function becomes a matter of survival.

Intrigued by the intersection of metabolism and development? Join our group and choose this TFG!