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Title:	Design and Expression of a MOF-TurboID Fusion Protein to Investigation the Interactors of MOF in the Mitochondria &: Probing the Interactions Between Zebrafish Homologs of Rab5 and a Novel Autophagic Regulator Through Yeast-two-hybrid Assays
Authors:	Gottumukkala, Yudish Sai Varma
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Abstract:	MOF is a chromatin modifier that deposits H4K16 acetyl marks to promote gene expression. It acts in the context of two essential and conserved complexes, the NSL complex that regulates housekeeping genes and the developmentally regulated genes, and the MSL complex responsible for dosage compensation between sex chromosomes in the fruitfly and humans. In addition to the well-characterized role as a histone modifier, MOF is found localized to mitochondria too, where it regulates the expression of mitochondrial genes. In order to gain deeper insights into this non-canonical role of MOF catalyzing non-histone acetylation, the project uses proximity labeling principles to identify the potential interactors of mitochondrial MOF. Using an engineered biotin ligase TurboID, a fusion construct is made, MOF-TurboID that is targeted to the mitochondria. Upon lentiviral transduction into primary mouse embryonic fibroblasts, the expression of the fusion construct has been confirmed, which enables using this protein as a tool to fuel downstream experiments.
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