Molecular analyses of heart tissue in mice lacking mitochondrial protein p13

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p13 is mitochondrial protein highly expressed in heart tissue. Recently, our unbiased compound screen has shown that some cardiotonic drugs change p13 mRNA expression in vitro, suggesting p13 may play a role in cardiac function. To reveal the role of endogenous p13 in cardiac function, here, we investigated histological changes, mitochondrial complex 1 activity, and mRNA expression levels of mitochondria-related genes in the heart of p13 knockout (p13-KO) mice. Although no apparent abnormalities were observed in the weight and histology, complex 1 activity was significantly reduced in the p13-KO heart. In addition, mRNA expression levels of apoptosis-related genes, such as Bcl-xL, were significantly reduced in the p13-KO heart. These results suggest that endogenous p13 may be involved in energy metabolism and apoptosis in heart tissue.