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The Effect of Vitamin k2 on ATP Production in CHO Cells Transfected with siRNA for UBIAD1

Human UBIAD1 has been indicated in the biosynthesis of vitamin k2 within the mitochondria. A recent study involving *Drosophila* showed that UBIAD1/Heix mutants exhibited severe mitochondrial dysfunction, including decreased ATP production. Vitamin k2 (MK4) was shown to be an effective electron carrier and helped to recover normal ATP production. The objective of this experiment is to further explore the potential of vitamin k2 as an electron carrier in mitochondria in the hamster model. To investigate the relation between UBIAD1, MK4 and ATP production, transfection of the Chinese hamster ovary (CHO) cell line with a novel species specific UBIAD1 siRNA based off the human UBIAD1 target sequence will be employed. Increasing concentrations of MK4 will be administered to both cultures. ATP production will be measured in both control and transfected CHO cultures to elicit the effect of MK4 on ATP production.

Keywords: UBIAD1, Vitamin k2, ATP production, siRNA