The Discovery of an Associate to hOXR1 Protein

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I worked on a project characterizing protein-protein interactions with the human oxidation resistance gene 1 (hOXR1). The aim of this work was to investigate possibility of an interaction between hOXR1 and two other candidate proteins, CNN2 (calponin-2), as well as TOMM20 (translocase of outer mitochondrial membrane 20). Human oxidation resistance gene 1 function is still not well determined. Its product is currently described as an oxidation resistance protein, protecting cells from oxidative damage. CNN2 protein is a protein implicated in the regulation and modulation of smooth muscle contraction. TOMM20 is a central component of the receptor complex responsible for the recognition and translocation of cytosolically synthesized mitochondrial preproteins. The possible interaction between OXR1 and CNN2 or TOMM20 could provide additional information regarding hOXR1 protein, leading to a better understanding of its function. I successfully expressed and purified CNN2 protein, as well as two isoforms (A and T1) of hOXR1 protein. In addition I undertook steps in order to obtain TOMM20 protein, which was unsuccessful. I also conducted the very first interaction study between hOXR1 protein isoforms and CNN2 protein. The results confirm the existence of an interaction between CNN2 and hOXR1 protein A isoform and suggest no interaction between CNN2 and hOXR1 protein T1 isoform.