

Characterization of an ubiquitin like protein SNAMA in *Drosophila melanogaster*

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SNAMA is a 142kDa *Drosophila melanogaster* protein, which consists of an uncharacterized and highly conserved domain DWNN, RING finger-like and zinc finger motifs (CCHC). DWNN is a 76 amino acid domain, which has an ubiquitin-like fold and is suspected to modify other proteins. RING finger proteins are involved in protein modification, whereas zinc finger promotes macromolecular interactions. Even though the exact role of SNAMA is unknown, its primary structure suggests that the protein might play a role in transcription and cell cycle regulation. SNAMA is highly homologous to mammalian proteins such as P2P-R, PACT and RBBP6, which are involved in cell cycle regulation. Preliminary studies have shown that the protein might play a role in apoptosis. Homozygous SNAMA knockout mutants underwent ectopic apoptosis and their larvae never developed further into adulthood. Northern blot analysis revealed that SNAMA is expressed at very high levels at early embryonic stages. The human homologue of this protein was isolated in cells, which were resistant to cytotoxic cell killing due to the disruption of the DWNN encoding gene, thus implying a certain role of this protein in apoptosis, whereas immunoprecipitations showed that SNAMA interacts with the tumor suppressor protein p53 in flies, suggesting that SNAMA might be involved in its regulation.