

P010 Ariadne 1b, an E3 ubiquitin-ligase involved in the regulation of esteroid hormone Ecdysone

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Ariadne 1b is an E3 ubiquitin ligase that belongs to the RBR protein family characterized by the two Ring finger (RF) motifs. *Drosophila* has three independent Ariadne genes: Ariadne 1a, Ariadne 1b y Ariadne 2. Earlier studies showed that Ariadne 1a regulates specifically the isoform A of the ecdysone receptor and interacts also with the transcriptional cofactor ultraspiracles (USP) and the E2 enzyme UbcD10. These interactions are mediated through the LXXLL, RF2 and RF1 motifs, respectively. Based on the amino acidic sequence similarities between Ariadne 1a and 1b (80% identity) and domain structure, we hypothesize that both E3 enzymes could have similar substrates and interacting motifs. At this point we are able to show that Ariadne 1b diverges from Ari-1a since it interacts with two isoforms of ecdysone receptor, A and B1, although it conserves the interaction with the cofactor USP and the E2 enzyme UbcD10. Interestingly, the available evidence indicates that the motifs that sustain these interactions in Ari-1b might have diverged from those in Ari-1a. The sequence comparisons suggest that the ancestral motif is RF1 in Ari-1b. This observation would suggest an evolutionary transformation from a C5HC5 towards a C3HC4 type of RF motif. On the other hand and similar to Ari-1a, the over- expression of Ari-1b yields phenotypes related to ecdysone signal transduction pathway.