

Identification of Cellular Factors that Physically Interact With Lia1 by Two-Hybrid

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The hypusine synthesis is a unique and essential posttranslational modification that only occurs in the translation initiation factor 5A (eIF5A). The hypusination takes place in two steps and is catalyzed by two enzymes: deoxyhypusine synthase (Dys1) and deoxyhypusine hydroxylase (Lia1). Although hypusine-containing eIF5A is indispensable for cell growth, the biological function played by this intriguing factor and the complete mechanism of hypusination remains unclear. In an attempt to better understand the hypusine synthesis process and, by that, to clarify eIF5A function, we have been using the yeast two-hybrid system as a tool for the identification of physical protein-protein interactions. Using Lia1 as a bait, 2.9×10^5 transformants from a yeast cDNA library have been screened, resulting in three positive clones confirmed by plasmid linkage and identified by DNA sequencing as Arx1, Brx1 and Trp2. Interestingly, both Arx1 and Brx1 are involved in the 60S ribosomal subunit biogenesis. These physical interactions will be further tested using other methodologies and, then, the functional correlation between Lia1 and 60S biogenesis will be investigated.

Keywords: *Lia1*, *hypusine*, *eIF5A*

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