Abstract

Ubiquitin – like protein Hub1 is an essential gene in Schizosaccharomyces pombe (yeast) which is required for the splice – site usage and alternative splicing. Hub1 non-covalently binds to Snu66 in yeast and mammals and to Prp38 in plants via a conserved HIND domain. Hub1's nuclear localisation is linked with RNA splicing, where it is a part of the tri-snRNP complex and in cytosol Hub1 is found to interact with Fumarase. Fumarase is an enzyme that is involved in Tricarboxylic Acid Cycle and in metabolism of amino acids. Fumarase deficiency is linked with a number of diseases. Addition of charged amino acids (aspartic acid and lysine) to the C-terminal of Hub1, leads to a loss of function in Δhub1 S. pombe strains, however, addition of uncharged amino acid (glycine), complements growth of S. pombe in Δhub1 strains. This study indicates that which C-terminal extensions of Hub1 are tolerated by S. pombe and the significance of Hub1 interaction with Fumarase