Abstract

Ubiquitin and ubiquitin-like proteins (UBLs) are a family of related proteins that controls an enormous range of physiological processes. Hub1 is an unconventional member of the UBL family. It binds the substrates non-covalently in an ATP-independent manner and has no conjugation machinery associated with it. It is also unique because it lacks the characteristic di-glycine (GG) motif, C-terminal extension or processing enzymes which recognize it. Hub1 has been implicated in many functions. One of the well characterized functions of Hub1 is in RNA splicing and it has been studied in S. cerevisiae, S. pombe, and humans. It has been shown that Hub1 interacts with the tri-snRNP component Snu66 and gets recruited to the spliceosome. In this study, we focus on the role of Hub1 in splicing in S. pombe. In S. pombe the absence of Hub1 causes severe splicing defect. One of the targets whose splicing is affected is the U6 snRNA. It was found that providing U6 cDNA rescued the growth defect seen in the temperature sensitive mutant hub1-1 to some extent. But no visible splicing defect rescue was seen. In the second part of the study, the role of Hub1 in post splicing events was explored. Hub1 showed a genetic interaction with the debranching enzyme Dbr1 and the double mutant had an increased accumulation of lariat when comparing the single mutants. The result suggest that Hub1 can also play a role in post splicing events