Title:	The Mechanism of Sde2 Mediated Splicing in S.pombe
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Abstract:	Ubiquitin and ubiquitin like proteins play an important role in regulating various cellular processes like protein degradation, DNA repair, gene transcription and progression through the cell cycle. Sde2 is a novel nuclear protein essential for the telomeric silencing and genome stability in Schizosaccharomyces pombe. Sde2 contains an N-terminal Ubiquitin fold and comes under the category of ubiquitin like proteins (UBLs). This protein is conserved across the kingdom Eukaryota and contains a conserved motif GGKGG which separates the C-term of the protein from the N-terminal ubiquitin fold. Sde2 undergoes processing at the motif GG^KGG with the help of deubiquitinating enzymes (DUBs) and leads to the formation of a C-terminal protein starting with KGG and a ubiquitin fold ending with GG amino acid residues. Sde2 has been shown to be associated with spliceosome but how it helps in the process of Splicing remains elusive. Studies from our lab, have found that the loss of Sde2 leads to the intron specific splicing defects in a set of around 28 genes. Sde2 seems to be a unique splicing factor that is required for the proper splicing of specific introns in specific genes. Based on these observations the protein Sde2 appears like a regulator of various unknown processes. In this study I have tried to answer some of the questions related to the mechanism of Sde2 mediated splicing and the biological relevance of an intron specific splicing. Here, I have found that the biological relevance of an intron specific splicing could be an alternative splicing. To access the Sde2 specific motif in its target genes, I have constructed a minigene reporter assay for RAP1 gene whose splicing depends on Sde2.
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