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Title: Emerging Roles of Ubiquitin-like Proteins in Pre-mRNA Splicing

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Abstract:

Ubiquitin-like proteins (UBLs) belong to the protein family whose members share a globular betagrasp fold structure. The archetypal member, ubiquitin, is known for its function in proteasomemediated protein degradation. UBLs have been shown to play several crucial roles besides protein turnover, including DNA damage response, cell cycle control, cellular signaling, protein trafficking, and innate immunity activation. In the past few years, accumulating evidence illustrates that four UBLs, namely, ubiquitin, SUMO, Hub1, and Sde2, are involved in eukaryotic pre-mRNA splicing. They modify the spliceosomes and promote splicing by adding new surfaces for intermolecular interactions, thereby refining the outcome of gene expression. In this review article, we highlight recent discoveries with an emphasis on the emerging roles of UBLs in splicing regulation.

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