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Regulation of splicing and circularisation of RNA in epithelial mesenchymal plasticity

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Abstract

Interconversions between epithelial and mesenchymal states, often referred to as epithelial mesenchymal transition (EMT) and its reverse MET, play important roles in embryonic development and are recapitulated in various adult pathologies including cancer progression. These conversions are regulated by complex transcriptional and post-transcriptional mechanisms including programs of alternative splicing which are orchestrated by specific splicing factors. This review will focus on the latest developments in our understanding of the splicing factors regulating epithelial mesenchymal plasticity associated with cancer progression and the induction of pluripotency, including potential roles for circular RNAs (circRNAs) which have been recently implicated in these processes.

Abbreviations: AS, alternative splicing; circular RNA, circRNA; EMT, epithelial mesenchymal transition; ES cell, embryonic stem cell, iPSC, induced pluripotent stem cell; MET, mesenchymal epithelial transition; RBP, RNA binding protein