

## Special Issue

# Molecular Mechanisms on Transcription Regulation by RNA Polymerase II (Pol II)

### Message from the Guest Editor

Recent studies highlight the involvement of non-membrane intracellular structures or liquid droplets, such as RNA granules, heterochromatin, and other nuclear speckles in various cellular functions. The formation of liquid droplets is driven by liquid-liquid phase separation (LLPS) through the aggregation of proteins that contain intrinsically disordered regions (IDRs). Increasing evidence has shown that LLPS plays a critical role in transcription regulation by RNA polymerase II, including the regulation of super-enhancer, transcription elongation, splicing, and other co-transcriptional processes; however, detailed mechanisms and the biological significance have not yet been elucidated. In this Special Issue, we focus on the findings of novel mechanisms of transcription regulation by RNA Polymerase II and provide an overview of the future of this field, which will add novel insights into many cellular functions. We also welcome molecular research on RNA Polymerase II (Pol II)-related fields.

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### Guest Editor

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## International Journal of Molecular Sciences

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