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Ribosomal RNA processing 1 homolog B (RRP1B) is involved in influenza virus transcription

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As viral proteins usually hijack or collaborate with the cellular proteins for executing their functions, it becomes important to identify host factors indispensable for influenza virus replication. Previously, we have conducted a novel genome-wide pooled shRNA screen to search for host factors important for influenza A virus (IAV) replication and have acquired some candidate genes. Here, we first confirmed that ribosomal RNA processing 1 homolog B (RRP1B), one of the candidates, is crucial for IAV replication. Moreover, mini-replicon assay as well as primer-extension assays showed that silencing RRP1B hampered viral RNA-dependent RNA polymerase (RdRp) activity. Furthermore, we showed that RRP1B binds to PB1 and PB2 of the RdRp as well as cellular mRNA. Silencing RRP1B reduced IAV mRNA levels in the presence of cycloheximide and inhibited RdRp complex binding to capped mRNA. Taken together, our study indicates that RRP1B is an important component of the IAV transcription complex and reveal new insights into the mechanism of IAV virus-host interaction.

Biography

Wen-Chi Su is an Assistant Professor, Graduate Institute of Clinical Medical Science and is also working as an Assistant Researcher at Research Center for Emerging Viruses, China Medical University Hospital.

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