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Effect of the ADAR1 signalling pathway on HCV replication.

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Abstract

The hepatitis C virus (HCV) is a member of the Flaviviridae family whose genome consists of a +RNA molecule. Although new direct-acting antivirals (DAAs) are highly effective in treating hepatitis C, tens of millions of people worldwide remain infected. A preventive vaccine against HCV has not yet been developed. In this report, we focus on the relationship between HCV and the double-stranded RNA editing enzyme adenosine deaminase 1 (ADAR1). As part of innate immunity, ADAR1 catalyses the conversion of adenosine to inosine, affecting both the stability of the edited dsRNA helix and the information encoded in the primary sequence of nucleotides. To assess the effect of ADAR1 on HCV replication, we prepared an ADAR1 knock-out cell line derived from Huh7.5 hepatocellular carcinoma cells. Results of pilot experiments with HCV replication in the Huh7.5 ADAR1 KO cell line will be presented.

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