

DECIPHERING HOST RANGE RESTRICTIONS OF HUMAN HEPATITIS VIRUSES

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More than 500 million people are infected with one or more of the five known human hepatitis viruses – A, B, C, delta and E. HAV and HEV both cause acute, self-limiting infections while HCV, HBV, and HDV (in the presence of HBV co-infection) predominantly cause chronic infections which frequently lead to severe liver disease. A major limitation in treating and preventing these burdensome and frequently fatal diseases is our limited understanding of the host-virus interactions governing hepatitis infections. Although these five viruses belong to distinct viral families and genera, they all possess both a limited tissue tropism – the liver – and host range – humans and non-human primates. Our work focuses on deciphering the molecular basis for their narrow host range and to translate this knowledge into the construction of animal models suitable for studying human hepatitis virus infections at the organismal levels as well as for preclinical testing of novel intervention approaches.