RNA-Based Delivery of Prime Editors targeting MYO5B Deficiency

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Proper hepatocyte polarization is a key prerequisite for functional hepatobiliary transport and proteins localized at the canalicular membrane domain need to be transported by motor proteins. Amongst these, Myosin-5b (MYO5B) brought into focus causing liver-related diseases including cholestasis. As Myosin-5b and Rab11a are crucial for the formation of bile canaliculus at the apical membrane, defects in one of these proteins can alter the polarization and lead to major pathological consequences.

Thus, RAPIDMYO aims at the definition of a robust Prime Editing approach targeting the MYO5B-mediated progressive familial intrahepatic cholestasis (PFIC) as unmet clinical need. The final product of this funding period will result in a defined Prime-Editing mRNA / pegRNA combination for efficient and safe restoration of liver function.