TGR5-DEPENDENT MODULATION OF MHC CLASS I EXPRESSION IN CHOLANGIOCYTE ORGANOIDS REVEALED BY TRANSCRIPTOMIC ANALYSIS

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Transcriptomic analysis of biliary organoids lacking TGR5 reveals significant downregulation of MHC class I genes, suggesting a potential immunomodulatory role for this bile acid receptor in cholangiocytes.

KEY POINTS

- Major histocompatibility complex class I genes including H2-Q1, H2-Q6, H2-Q10, H2-T5, H2-T7, and H2-T15 were significantly downregulated in TGR5-knockout organoids compared to wild-type controls under basal conditions.
- Organoid models were generated from wild-type, TGR5-knockout, S1PR2-knockout, double-knockout, and S1PR2-knockout mice overexpressing TGR5 to examine receptor-specific roles in cholangiocyte function.
- The authors suggest these findings may indicate a role for TGR5 in maintaining antigen presentation capacity in biliary epithelial cells and point toward a possible link between bile acid signaling and hepatic immune regulation.
- Further validation is needed to confirm the functional consequences of altered MHC-I expression and elucidate underlying mechanisms.
- This study would interest researchers investigating bile acid receptor biology, cholangiocyte function, and hepatic immunoregulation.

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