both lucifer yellow assay (p = 0.005) and transepithelial electrical resistance (p = 0.004). Western blot showed increased expression of tight junction proteins occludin in RI treated enteroids compared with controls (p = 0.009). Claudin-1 and 4 were increased in RI treated enteroids although this did not reach significance (p > 0.05).

CONCLUSION: RI treated enteroids showed significantly decreased permeability and increased tight junction protein expression compared with control enteroids. Therefore, RI might be a novel therapeutic or preventative strategy against NEC.

Schwann Cell Precursors in the Aganglionic Segment of Hirschsprung Disease Have a Capacity to Generate Neurons in the Gut
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INTRODUCTION: Cell therapy offers the potential to replace missing neurons in the distal bowel of Hirschsprung disease (HSCR) by transplanting neural progenitor cells to restore gut function. Schwann cell precursors (SCPs) have recently been shown to possess a capacity to generate neurons in the intestine. However, it is unknown whether SCPs can be isolated from the aganglionic segment of HSCR and whether they can be used for cell-based therapy.

METHODS: Aganglionic bowel was obtained from human HSCR and Endrb−/− mice. SCPs were isolated from the hypertrophic nerve bundles in the aganglionic segment. SCPs were transplanted into the aganglionic mouse colon ex vivo and in vivo. Immunohistochemistry was used to demonstrate engraftment, survival, and neuronal differentiation of SCPs after transplantation. Live cell imaging was used to determine neuronal calcium activity.

RESULTS: Hypertrophic nerve bundle-derived SCPs are capable of forming neurospheres in culture and possess neurogenic potential. In differentiation conditions, SCPs give rise to Tuj1 expressing neurons that exhibit spontaneous and electrically stimulated calcium activity. After transplantation into aganglionic mouse colon, SCPs engraft, migrate extensively, and differentiate into enteric neurons and glia.

CONCLUSION: SCPs from the aganglionic segment of HSCR demonstrate the capacity to regenerate functioning neurons in vitro. They can be transplanted into the aganglionic colon where they survive, migrate, and differentiate into appropriate phenotypes. SCPs, therefore, represent a potential autologous source of neural progenitor cells. Current studies are aimed at determining whether these cells restore colorectal function as a viable treatment for HSCR.

Serine-Threonine Kinase Receptor Associated Protein Confers Aggressive Phenotype in Neuroblastoma Via Regulation of Focal Adhesion Kinase Signaling
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INTRODUCTION: Serine-threonine kinase receptor associated protein (STRAP) is a scaffolding protein implicated in tumorigenicity, and we have demonstrated that the knockout (KO) of STRAP decreased while the overexpression (OE) of STRAP increased the neuroblastoma malignant phenotype. Focal adhesion kinase (FAK) prevents anoikis and supports neuroblastoma tumorigenesis. Because FAK activation in cancer has been found to be regulated by other scaffolding proteins, we hypothesized that STRAP can affect FAK activation in neuroblastoma.

METHODS: SK-N-AS neuroblastoma cell line was used. CRISPR-Cas9 technology was used to establish STRAP KO cells, and STRAP OE was accomplished with stable plasmid transfection. Wild-type (WT) and empty vector (EV) transfected cells served as controls for KO and OE cells, respectively. Immunoblotting detected protein expression. PamChip kinomic peptide microarray was used to determine the mean kinase statistics (KSTAT) and phosphorylation curves to evaluate the effects of STRAP OE on the kinome.

RESULTS: There was a decrease in phosphorylated FAK (Y397) in STRAP KO cells compared with WT, indicating that STRAP can function to regulate FAK phosphorylation. In kinome assays, FAK1 (KSTAT of -0.473) and FAK2 (KSTAT of -0.475) were increased in OE vs EV cells with downstream FAK targets also demonstrating higher phosphorylation activity in OE vs EV cells.

CONCLUSION: STRAP KO led to decreased FAK phosphorylation while STRAP OE resulted in increased kinomic activity of FAK and its downstream targets. These findings suggest a potential pathway that allows STRAP to confer a more malignant phenotype in neuroblastoma and warrants further investigation as a potential therapeutic target.

Spontaneous Portosystemic Shunt Ligation During Pediatric Liver Transplantation
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INTRODUCTION: The aim of this study was to describe the incidence and outcome of intraoperative ligation of spontaneous portosystemic shunts (SPSS) during pediatric liver transplants.

METHODS: Liver transplants performed at our pediatric hospital between January 1, 2017 and December 31, 2020 were retrospectively reviewed. Recipients were categorized as no SPSS present or