INTRODUCTION
Well-differentiated pancreatic neuroendocrine tumors (PNETs) are a group of aggressive, heterogeneous cancers with highly variable clinical course and increasing incidence rate. Patients often present late with unresectable liver metastases. Five-year survival rates for patients with pancreatic neuroendocrine liver metastases (pNLMs) are poor. These pNLMs are often treated with liver-directed therapies including ischema-based transarterial embolization (TAE), or radioembolization (TARE). Preliminary data has shown poor response to TAE in DAXX-mutated PNETs. The purpose of this study was to evaluate the effect of loss of DAXX protein expression on radiosensitivity and ischemia sensitivity of BON1 cells.

AIMS
• Determine the effect of loss of DAXX protein in Bon-1 cells on radiosensitivity
• Assess the effect of loss of DAXX protein in Bon-1 cells on ischemic sensitivity

MATERIALS AND METHODS
Cell types: Bon-1 wild type and CRISPR/Cas9-generated DAXX knockout, C16 cells.

RESULTS

Bon-1 vs C16 Clonogenic Assay Line Plot

3 days post-ischemia, Bon-1 wildtype had only 29.3% viability compared to C16 with 78.2% viability.

Bon-1 vs C16 % Viability Ischemia 7 Days

% Cell viability – trypan blue count
% Cell viability – cell titer glo (ATP activity - luminescence)
% Annexin V/Propidium Iodide Flow Cytometry
% Caspase-3 Apoptosis Assay

All experiments were performed in triplicate and results analyzed at a 95% confidence interval.

REFERENCES

ACKNOWLEDGEMENTS
Thank you to Jim Russell from MSKCC Medical Physics for his training and help in navigating the radiation assays. Thank you to the MSKCC Flow Cytometry Core Facility for their training and assistance in flow cytometry experimental design. Funding for this work has been provided by Dr. Puzzuoli’s T32 MBG grant from the MSKCC Department of Radiology, NANETS, and SIR.