Metabolism Gene Expression by Macrophages Within the DIPG Tumor Microenvironment

LAYLA JAMIL DR. COURTNEY CRANE LABORATORY, SCRI 10 AUGUST 2018



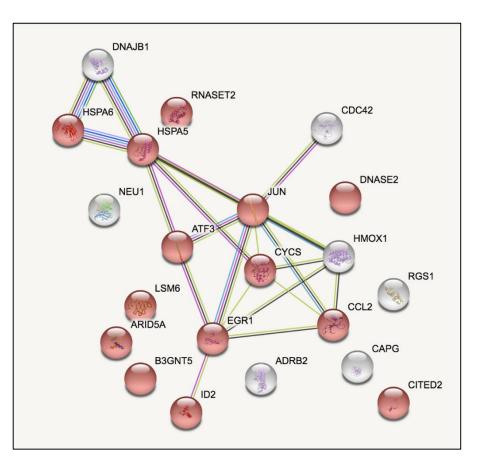
Target Genes

Ę

21 TAM genes related to survival in GBM

Enriched for metabolic processes

Are these genes important in DIPG TAMs?





Background on Diffuse Intrinsic Pontine Glioma

Location: Pons

Median age of diagnosis: 6-7 years old

Median survival: 11 months

Limited treatment options: radiation





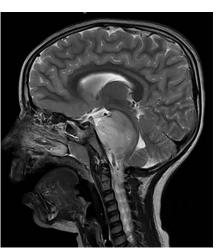
Background on Diffuse Intrinsic Pontine Glioma

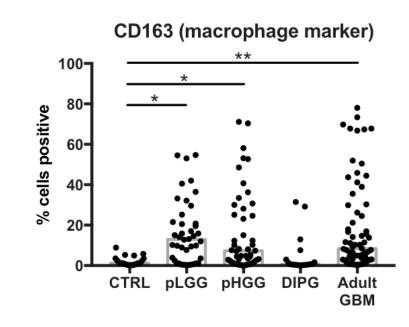
Location: Pons

Median age of diagnosis: 6-7 years old

Median survival: 11 months

Limited treatment options: radiation









Hypothesis

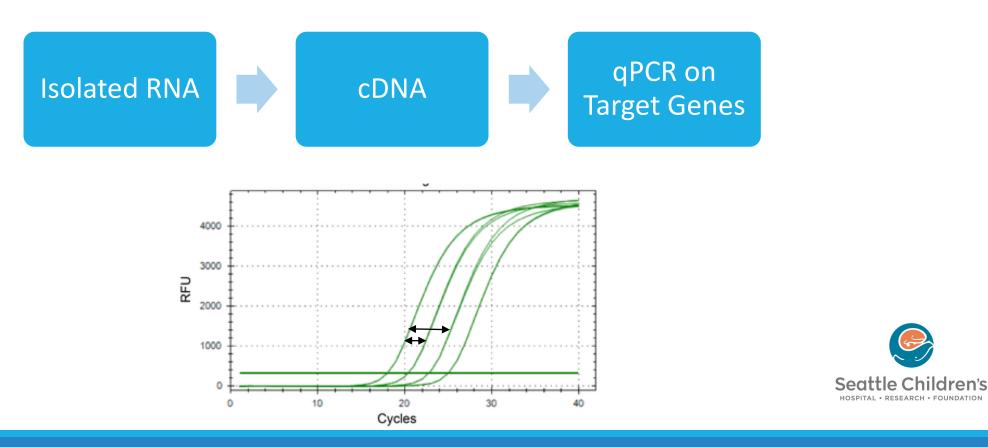
Similar to adult GBM, expression of metabolism related genes by tumor associated macrophages is associated with overall survival of patients with DIPG.



Methods

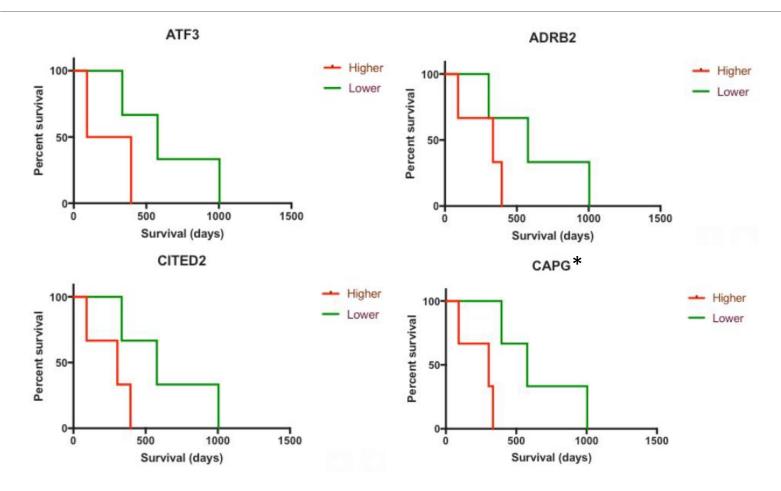
Ę

6 human samples: tumor and normal adjacent at time of autopsy



Results

F





Conclusion

Expression of these metabolism related genes by tumor associated macrophages may be associated with overall survival of patients with DIPG.

Future investigations:

- Confirm staining of metabolism genes in macrophages with multicolor IHC
- Larger cohort



Acknowledgements

UW Department of Neurological Surgery

Dr. Richard Ellenbogen Mrs. Sandra Ellenbogen Jim Pridgeon Dr. Christine MacDonald Ellie Thorstad UW Neurological Surgery Donors, Faculty, Staff, and Residents

Grants

NIH NINDS R25NS095377 - Summer Research Experience in Translational Neuroscience and Neurological Surgery Unravel Pediatric Cancer Pediatric Brain Tumor Research Fund Crane Lab **Courtney Crane, PhD** Nicole Lieberman, PhD Jennifer Gardell, PhD Katie Brempelis, PhD **Stephanie Balcaitis** Jacob Ruzevick, MD **Harrison Chinn** Amira Davis **Courtney Cowan** Kole DeGolier Shannon Kreuser Lisa Matsumoto **Michael Sikora** Max Hanson Thor Breitbarth

