changing ependymoma outcomes together

est. 2016

Dr. Kristian Pajtler - Recipient of the 2018-2019 CERN Foundation Scientific Ependymoma Fellowship

Funding from the CERN Foundation to Dr. Pajtler's laboratory at KiTZ Hopp Children's Cancer Center in Heidelberg, German helped to support the discoveries in the field of ependymoma research highlighted in seven manuscripts that were published in high-profile scientific journals. Much of Dr. Pajtler's work aimed to investigate the diversity of ependymoma as a basis for future improved diagnostic accuracy and target identification. An example of this achievement is the SP-EPN-MYCN discovery, which will be considered in the fifth edition of the WHO Classification of Central Nervous System Tumors. A collaborative effort led to a better understanding of a central but uncharacterized fusion gene partner in supratentorial ependymoma that based on this work was officially renamed into *ZFTA* (formerly *C11orf95*) by the Human Genome Nomenclature Committee. In consequence, most frequent ependymoma in the supratentorial compartment are now designated supratentorial ependymoma, *ZFTA* fusion-positive (formerly *RELA* fusion-positive). In addition, other research efforts supported more accurate identification for potential therapeutic targets for PFA and supratentorial ependymoma and provided rationale for further preclinical studies. For example, disrupting mechanisms associated with the EZH Inhibitory Protein (EZHIP) may serve as a novel targeted therapy for PFA tumors. Further refined and improved molecular classification of ependymoma may provide diagnostic and prognostic information beyond histology and facilitate patient stratification in future clinical trials. To learn more about these research efforts go to the publications listed below. The ependymoma scientific fellowship was fully funded by support from the community to the CERN Foundation, a program of the National Brain Tumor Society.

Publications:

Cross-species genomics reveals oncogenic dependencies in C11orf95 fusion-positive supratentorial ependymomas.
Cancer Discovery 2021

MYCN amplification drives an aggressive form of spinal ependymoma
Acta Neuropathol 2019

EZHIP/CXorf67 mimics K27M mutated oncohistones and functions as an intrinsic inhibitor of PRC2 function in aggressive posterior fossa ependymoma
Neuro Oncology 2019

Therapeutic targeting of ependymoma as informed by oncogenic enhancer profiling
Nature 2018

YAP1 subgroup supratentioral ependymoma requires TEAD and nuclear factor I-mediated transcriptional programmes for tumorigenesis
Nat Communication 2019

Molecular heterogeneity and CXorf67 alterations in posterior fossa group A (PFA) ependymomas.
Acta Neuropathol 2018

DNA methylation-based classification of ependymomas in adulthood:implications for diagnosis and treatment
Neuro Oncology 2018

KiTZ Hopp-Kindertumorzentrum Heidelberg

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