

Scientists create animal model for pediatric brain tumor

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Sanford Research scientists are published in *Nature Cell Biology* for their work developing a model to explore therapies for a pediatric brain tumor known as choroid plexus carcinoma.

Provided by Sanford-Burnham Medical Research Institute

Haotian Zhao, Ph.D., is the lead author on the study titled "Sonic Hedgehog promotes proliferation of Notch-dependent monociliated choroid plexus tumour cells." Zhao is an associate scientist in the Children's Health Research Center at Sanford Research.

Zhao and his team created an animal model that forms tumors in a part of the brain known as the choroid plexus. Using this model, which has increased levels of a key developmental protein called NOTCH, they discovered a new genetic pathway involved in the development of this portions of the brain. The cells of the choroid plexus are unusual because they contain multiple primary cilia, hair-like projections from the cell that are important for detecting changes in their environment, signaling through a protein called Sonic Hedgehog.

The study showed that the tumor cells only contain one cilium and have disrupted Sonic Hedgehog signaling, which drives tumor-cell growth. Because Sonic Hedgehog might be an indicator of tumor growth, targeting this protein could be clinically beneficial for [choroid plexus](#) carcinoma treatment.

Nature Cell Biology publishes papers from all areas of cell biology, especially those focusing on the molecular mechanisms responsible for fundamental cell biological processes.

More information: Li Li et al. Sonic Hedgehog promotes proliferation of Notch-dependent monociliated choroid plexus tumour cells, *Nature Cell Biology* (2016). DOI: [10.1038/ncb3327](https://doi.org/10.1038/ncb3327)

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