Astrocyte Types

A1 astrocyte

A2 astrocyte

Using an intersectional fluorescence-activated cell sorting-based strategy, John Lin et al., identified five distinct astrocyte subpopulations present across three brain regions that show extensive molecular diversity. Application of this molecular insight toward function revealed that these populations differentially support synaptogenesis between neurons. They identified correlative populations in mouse and human glioma and found that the emergence of specific subpopulations during tumor progression corresponded with the onset of seizures and tumor invasion. In sum, they have identified subpopulations of astrocytes in the adult brain and their correlates in glioma that are endowed with diverse cellular, molecular and functional properties. These populations selectively contribute to synaptogenesis and tumor pathophysiology, providing a blueprint for understanding diverse astrocyte contributions to neurological disease ¹⁾.

1)

John Lin CC, Yu K, Hatcher A, Huang TW, Lee HK, Carlson J, Weston MC, Chen F, Zhang Y, Zhu W, Mohila CA, Ahmed N, Patel AJ, Arenkiel BR, Noebels JL, Creighton CJ, Deneen B. Identification of diverse astrocyte populations and their malignant analogs. Nat Neurosci. 2017 Feb 6. doi: 10.1038/nn.4493. [Epub ahead of print] PubMed PMID: 28166219.

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