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The source of IDH-mutant gliomas

Deep sequencing of human brain tissue identifies the probable cell of origin of IDH-mutant gliomas

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Abstract

Gliomas are among the deadliest brain tumors. The two most common types of gliomas, which differ in epidemiology, mechanisms of disease, and prognosis, are IDH-mutant gliomas, which carry mutations in isocitrate dehydrogenase (*IDH*) genes, and IDH– wild-type glioblastomas (GBMs). Whether the earliest genetic alterations driving these two glioma types in patients arise from the same or a different type of cell is an unresolved question. Neural stem cells (NSCs) within the subventricular zone of the brain of patients were shown to harbor the initial driver mutations of GBM (*1*). Do these cells also give rise to IDH-mutant gliomas? On page 150 of this issue, Park *et al.* (*2*) report that glial precursor cells, not NSCs, that bear only *IDH* mutations surround the tumor in patients with IDH-mutant gliomas. This finding indicates that the initial mutations that drive GBM and IDH-mutant gliomas may arise in distinct cellular progenitors.