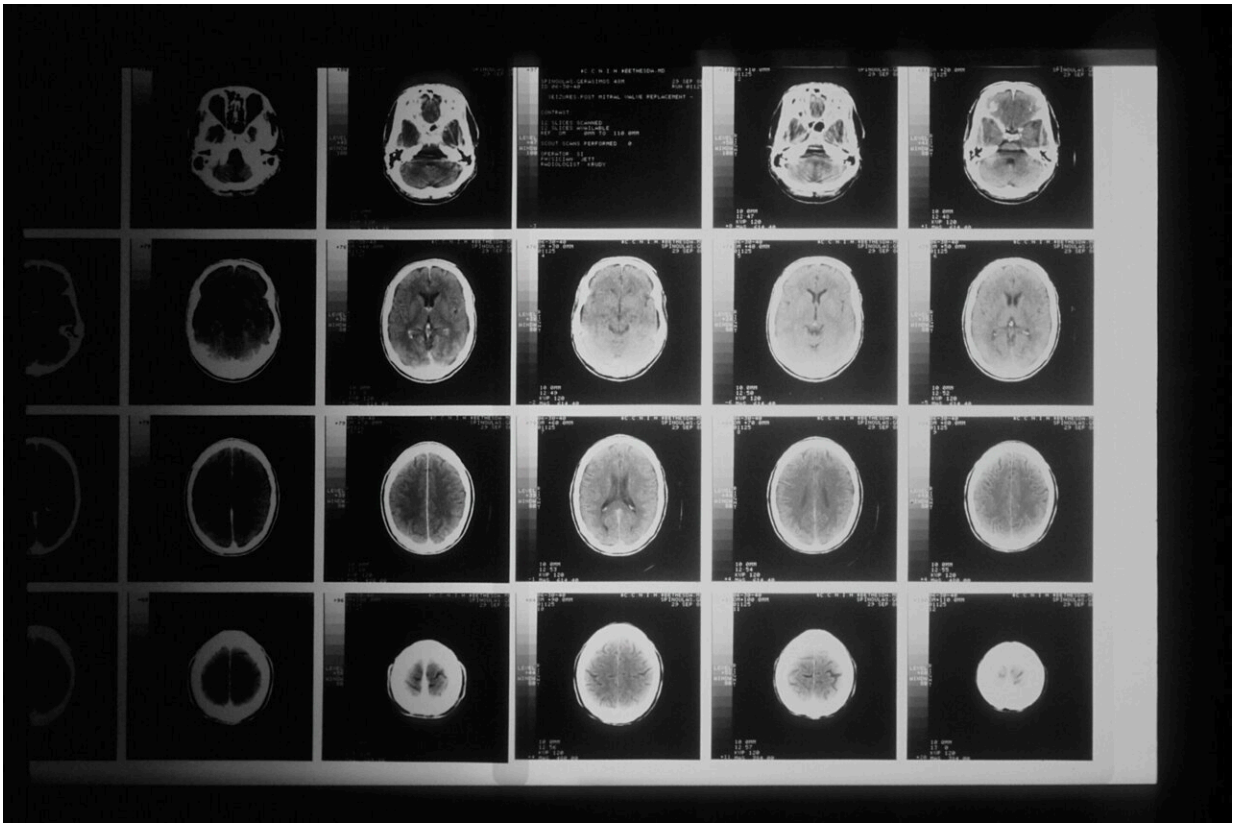


Origins of glioma brain cancer found to be in the epigenome

July 25 2023



Credit: Unsplash/CC0 Public Domain

While cancers often originate from mutations and other alterations of cells' DNA, researchers in the Bernstein Laboratory at Dana-Farber and the Broad Institute of MIT and Harvard have found that

gliomas—incurable brain tumors—can arise due to changes in the epigenome, the collection of compounds that are deposited on DNA and alter gene activity without changing the sequence of DNA itself. The researchers have published their findings in the journal *Cell*.

The researchers pinpointed two genes whose activity is epigenetically altered in human gliomas, including one cancer-causing oncogene and one cancer-preventing tumor suppressor gene.

In animal models, they showed that changes to the epigenome that activate the oncogene and silence the tumor suppressor work in sync to spur brain tumor formation. The findings underscore the potential of therapies that seek to impede gliomas by targeting the epigenome.

The discovery that glioma [brain tumors](#) can be driven by epigenetic changes—alterations in markings that control [gene activity](#)—suggests that new chemotherapy agents that target those changes may hold the key to stymying [tumor growth](#).

More information: Bradley E. Bernstein, Modeling epigenetic lesions that cause gliomas, *Cell* (2023). [DOI: 10.1016/j.cell.2023.06.022](https://doi.org/10.1016/j.cell.2023.06.022).
[www.cell.com/cell/fulltext/S0092-8674\(23\)00729-8](http://www.cell.com/cell/fulltext/S0092-8674(23)00729-8)

Provided by Dana-Farber Cancer Institute

Citation: Origins of glioma brain cancer found to be in the epigenome (2023, July 25) retrieved 27 April 2024 from <https://medicalxpress.com/news/2023-07-glioma-brain-cancer-epigenome.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.