

A genetic factor predicts prognosis in brain tumor patients

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PLoS ONE has just published a study which defines a gene locus on chromosome 1 that predicts prognosis of brain tumor patients and may even set the basis for the development of more efficient drugs to combat brain cancer.

Clinical and basic researchers from the University Hospital Basel, Switzerland, the Heinrich Heine University Düsseldorf, Germany, and the Emory University Atlanta, USA have defined the Notch2 gene as candidate gene for brain tumor development. The study was coordinated by Adrian Merlo, neurosurgeon at the University Hospital Basel.

The Notch2 locus highly predicts survival in subgroups of brain tumor patients. This gene is an important regulator of developmental processes. Taking advantage of a complex DNA duplication involving the Notch2 gene, the researchers developed a molecular assay that unambiguously distinguishes prognostically favorable brain tumor cases from cases that show rapid tumor progression.

In ongoing studies, the Basel researchers, supported by Ruth Chiquet from the Friedrich Miescher Institute, have found that Notch2 upregulates the tenascin-C gene which is well known to play a critical role in brain tumorigenesis. This new brain tumor pathway does not only offer precise diagnostic information, but also defines new targets for molecular intervention to develop drugs against this severe human disease.

Source: Public Library of Science

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