



## ARTICLE LINKS:

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Current Opinion in Neurology. 20(6):712-718, December 2007.

*de Groot, John F; Gilbert, Mark R***Abstract:**

Purpose of review: The purpose of this review is to provide an update on the identification of novel molecular targets in neurooncology and their translation into clinical practice.

Recent findings: Basic research is providing novel insights into the complex molecular pathways involved in the pathogenesis of malignant glioma transformation and progression. By unraveling the intricate signaling cascades responsible for sustained proliferation, angiogenesis, invasion and resistance to apoptosis in glioma, we are now confronted with an ever-expanding list of molecular targets. Clinical studies using single targeted therapies have been disappointing, therefore providing the impetus for novel combination drug trials. The potential for combination regimens brings the challenge of testing an exponentially growing number of treatments. Success will depend on an integration of novel treatment regimens and innovative trial designs combined with careful patient selection based on the results of molecular profiling of tumor tissue.

Summary: Technologic advances in oncogenomics, proteomics and functional genomic screens (such as synthetic lethality) are providing mechanisms to rapidly identify the critical targets whose inactivation will lead to a substantive tumor growth arrest. Tumor tissue biomarkers that identify those tumors most likely to respond to a specific inhibitor are needed as a mechanism toward tailoring therapy to the individual patient with malignant glioma.

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