

**Lay Summary:**

Glioblastomas (GBMs) are the most frequent primary brain cancer, accounting for 40% of all human CNS tumors. The clinical management of gliomas are complicated by the ability, indeed the propensity, of transformed cells to migrate away from the solid mass tumor. The result of this tissue invasion is the rapid spreading of disease and the near certainty of recurrence following surgical removal of the initial tumor. Cell migration is a complex cellular phenomenon involving multiple signaling pathways that result in altered gene expression and enhanced cell motility. In transformed cells multiple pathways are often involved but the cause of aberrant signaling can vary from case to case. Blocking general protein synthesis has long been recognized as a means of inhibiting tumor growth; however, this approach is rife with complications as the global reduction of protein synthesis has severe consequences for all cells, healthy and otherwise. The current proposal is centered on our finding that a specific mechanism for protein synthesis is present in astrocytes, but in only 2 other cell types in the body. In addition, our analysis of potential targets regulated by this mechanism has yielded a list of proteins involved in cell migration and cell division, many of which are known to be up-regulated in GBM. By inhibiting this pathway, we should be able to ratchet-down multiple signaling pathways that are hyper-stimulated in GBM. This could lead to greater containment of the tumor and a lowering of the recurrence rate.