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Researchers identify potential target for treatment of aggressive brain cancer

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Researchers from the Cancer Science Institute of Singapore (CSI Singapore) at the National University of Singapore have discovered that the BCL6 protein could potentially be used as a marker to predict clinical outcomes of patients suffering from Glioblastoma Multiforme (GBM), the most malignant cancer of the brain.

Specifically, the study, led by Professor H. Phillip Koeffler, Senior Principal Investigator at CSI Singapore, found that GBM patients with lower levels of the BCL6 protein have a higher survival rate than those with high BCL6 expression. The study also suggests BCL6 as a possible target for GBM treatment – controlling the levels and activities of the BCL6 protein could potentially contribute to treatment of the disease.

GBM is aggressively cancerous as the cells reproduce rapidly and spread extensively in the brain, and is also highly resistant to conventional therapy. This makes treatment exceptionally tough and challenging. GBM patients usually survive less than 15 months after diagnosis. This novel study explored the role of the BCL6 gene in GBM, as well as the relationship between BCL6 and another GBM-promoting gene, AXL. The team found that BCL6 and its partner NCoR work together to enhance AXL expression and contribute to the development of GBM.

"Our study established BCL6 as a potential prognostic marker to predict overall survival of GBM patients. We also found that by specifically interfering with BCL6 function to disrupt the BCL6-NCoR interaction, the fatal characteristics of GBM cells are constrained, thus restricting

them from multiplying and spreading. Moving forward, we are looking into developing novel small-molecule inhibitors to restrain BCL6 activity, which could potentially be a promising strategy for GBM treatment," said Prof Koeffler.

The findings of the study were published in the journal *Proceedings of the National Academy of Sciences*.

More information: Liang Xu et al. BCL6 promotes glioma and serves as a therapeutic target, *Proceedings of the National Academy of Sciences* (2017). DOI: 10.1073/pnas.1609758114

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