BI-13. TISSUE TRANSGLUTAMINASE: A POTENTIAL ADJUVANT TARGET FOR PRIMARY BRAIN TUMOR
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Tissue transglutaminase, upregulated by TGFβ, is also highly expressed in primary brain tumors, including gliomas and meningiomas by expression profile microarray. Direct knockdown of transglutaminase induced arrest of cell proliferation and cell apoptosis in brain tumor cells. Higher expression of transglutaminase in meningioma tissue correlated to the WHO grading and recurrence. With competitive inhibition by cystamine to the transglutaminase, the cells presented with decreased AKT phosphorylation and increased c-Jun phosphorylation. The addition of cystamine also increase the expression of cleaved caspase-3 and TUNEL stainings. Furthermore, the S6 ribosome phosphorylation significantly increased, implied the blocking of mTOR pathway. In conclusion, transglutaminase, possibly linked to TGFβ, maybe a potential adjuvant therapeutic target by decrease of cell proliferation and induction of apoptosis in primary brain tumors.