Epigallocatechin-3-gallate (EGCG) downregulates PEA15 and thereby augments TRAIL-mediated apoptosis in malignant glioma.

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EGCG is a flavonoid that exhibited therapeutic activity in cancer. In this study three glioblastoma cell lines (U87, A172 and U251) were treated with EGCG, tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) or the combination of both. Treatment with subtoxic doses of EGCG in combination with TRAIL induces rapid apoptosis in TRAIL-resistant glioma cells, suggesting that this combined treatment may offer an attractive strategy for treating gliomas. EGCG treatment down-regulated phosphoprotein-enriched in astrocytes (PEA15) through an Akt (PKB)-dependent mechanism. In addition, over-expression of PEA15 attenuated cytotoxicity induced by the combination of EGCG and TRAIL. In summary, PEA15 is a key regulator in TRAIL-EGCG-mediated cell death in malignant glioma.

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