RNA Interference of the Caspase Inhibitors XIAP and Survivin Modulate Apoptosis in Glioma

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Background: Gliomas are the most common tumor on CNS with prognostic lower than one year. Modulation of the expression of proteins that regulate apoptosis may lead to a better understanding of gliomas resistance to chemotherapics and to potentially sensibilize these cells to drugs used on cancer treatment. **Objectives:** To sensitize gliomas to chemotherapic agents by silencing the caspase inhibitors XIAP and Survivin. **Methods and Results:** XIAP and Survivin were silenced in gliomas cell line U87 MG using stable RNA interference expression by lenvitiviral vector. Glioma with silenced XIAP presented 44% less viability when compared to control cells when treated with 1µM of Doxorubicin, and 57% to 1µM with Etoposide. Silenced cell presented reduced proliferation, although preliminary characterization did not show evident cell cycle alterations by flow cytrometry or increase in senescence, as analyzed by β-Gal Senescence Assay. **Conclusions:** Silencing of caspase inhibitors is a strategy for sensitizing cells to chemotherapic agents and at least some of the resistance of gliomas cells may be due to over-expression of these genes. Senescence result should be reconsidered and caspase assay performed to explain phenotypic alterations by silencing of XIAP and Survivin.

Key words: glioma, apoptosis, lentiviral vector
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