New Drug Synthetics Alkaloids-like to Treatment on Glioblastoma Cells

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INTRODUCTION: Glioblastoma are the most malignant tumors of the CNS. In USA the researchers reviewed 38,453 cases of malignant brain tumors that were reported from 1973 to 2010. Unfortunately no statistically significant improvement in survival rates was noted for patients after the 1980's. In this study we evaluated the effect of 26 synthetic alkaloids-like, on viability of human (GL-15, U251) and murine (C6) glioblastoma cell lines, and normal glial cells (astrocyte/microglia primary culture) to select drug with potential pharmacological. MATERIAL AND METHODS: Effect the cell viability and dose-response was available by MTT after 72 h, morphogenic change by immunocytochemistry and Western blot to GFAP, analyze by flow cytometry apoptotic effect using Annexin V/FITC-propidium iodide (PI) after 72 h and analysis the cell cycle by (PI) after 24 h. RESULT AND DISCUSSION: Between 26 alkaloid-like tested at 100 µM, we meet one promising drug. The RLB87 showed a dose dependent, about teen times more cytotoxic effect than a temozolamide (control positive) and selective effect to normal cell. The RLB87 presented an EC-50 value of 67.4, 99.1 and 52.9 µM in GL-15, C6 and U251, respectively. No toxic effect was observed with doses of 10-300 µM RLB87 on normal glial cells and no gliosis effect by immunocytochemistry and western blot to GFAP. Moreover, we observed, by flow cytometry using Annexin V/FITC-propidium iodide (PI) that more than 50% of cells exposed at 100 µM of RLB-87 died by apoptosis after 72 h. In the analyze cell cycle observed that cells were arrest at G1/G0 phase after 24 h treatment. CONCLUSION: The RLB87 is cytotoxic, apoptotic, arrest at G1/G0 phase cell cycle and selective effects. These finds are promising in terms of antitumor potential the synthetic alkaloid-like RLB87 to therapeutic the Glioblastoma disease.

Word Keys: Glioblastoma, Alkaloids-likes and Chemotherapy

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