

Oddai Gharib, Alnairouz Katrib, and Gerald Hankins, Department of Biology, West Virginia State University, Institute, WV 25112. In Vitro Effects of Mushroom Extracts on Brain Tumor Cells

Glioblastomas are tumors that arise from astrocytes, which are supportive cells of the brain. The cells of these tumors rapidly invade normal brain making these tumors highly malignant. Treatment is difficult and glioblastomas are usually fatal. Meningiomas arise from the meninges that surround the central nervous system. Although most meningiomas are benign they can still be dangerous. Further, there is no effective chemotherapy for meningiomas. Researchers are interested on how natural products, including extracts of particular species of mushrooms, can affect the number of viable tumor cells. The research objective was to evaluate the effects of *Boletus edulis* mushroom, a native West Virginia species, on the proliferation/survival of glioblastoma and meningioma cells, focusing on the number of viable cells. The mushroom extract was obtained by extracting ground mushroom with methanol and water. The extract was separated from insoluble solids by filtration. Then, the solvents were removed by rotary evaporation and the extract dissolved at different concentrations in cell culture media to treat the cancer cells. Results with CH157MN meningioma cells were variable and inconclusive. Interestingly, after treating the A172 glioblastoma cells with both low and high concentrations of *Boletus edulis* mushroom extract; the number of cells increased with increasing concentration of treatment. This indicates that the extract may contain specific compounds responsible for increasing the cell proliferation or inhibiting apoptosis. If further experiments support these observations, the extracts or compounds from them may be of potential use in preventing apoptosis in conditions such as stroke or traumatic brain injury.