

Patulin impairs motility of human glioblastoma cells

Manel Boussabbeh, Intidhar Ben Salem, Salwa Abid-Essefi, José Luis and Hassen Bacha
Monastir University, Tunisia

Glioblastoma, the most malignant subtype of glioma, is associated with very poor survival. The median survival rate for patients with glioblastoma, is less than one year, and the average life expectancy remains approximately 14–18 months, even with multi-modality therapy integrating surgery, radiation therapy, and chemotherapy. Glioblastomas are characterized by rapidly dividing cells, high degree of vascularity, invasion into normal brain tissue and an intense resistance to death-inducing. This study aimed to determine the effect of Patulin (Pat), a fungal mycotoxin of *Aspergillus* and *Penicillium*, on the mechanistic steps of carcinogenesis including migration, invasion and proliferation. By using Boyden chambers and time lapse videomicroscopy we found that Pat, with no cytotoxic concentration, significantly reduced U87 cells motility and affected cell directionality persistence in a dose-dependent manner towards fibronectin. We investigate a three dimensional invasion assay by using spheroid assay and we demonstrate that Pat abolishes the invasion of human glioblastoma cells. We also found that Pat inhibits cell proliferation for 72h of incubation. These findings reveal a novel pharmacological effect of Patulin against glioblastoma.

manelboussabbeh@gmail.com