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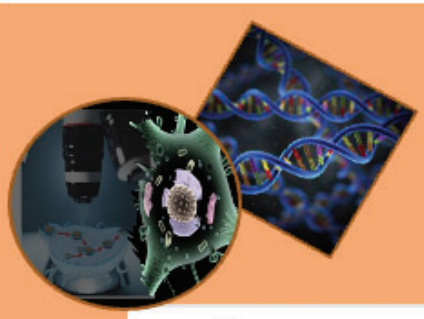
LYSOSOME
from structure to genomics
from function to disease

360° LYSOSOME: from structure to genomics, from function to disease- Update



4-9 October 2022

KUŞADASI, İZMİR

PP-9 CYTOTOXIC EFFECTS OF ST JOHN'S WORT OIL ON GLIOBLASTOMA CELLS BY INDUCING OXIDATIVE STRESS, AUTOPHAGY AND APOPTOSIS

M. Mete[I], U. Ünsal[II], **F. Çöllü[III, I]**, Aydemir[IV], E. Kocamaz[V], M. Barutcuoğlu[I], B. Gurcu[III], I. Tuğlu[V]

[I] Celal Bayar University, School of Medicine, Neurosurgery department, Manisa, Turkey, [II] Manisa City Hospital, Neurosurgery, Manisa, Turkey, [III] Celal Bayar University, Faculty of Science and Letters, Biology Dept. Zoology sect., Manisa, Turkey, [IV] Omer Halisdemir University, School of Medicine, Histology and Embryology Sect., NIGDE, Turkey, VCelal Bayar University, Faculty of Medicine, Department of Histology and Embryology, Manisa, Turkey

St. John's Wort Oil (JWO) is stated to possess sedative property and has been used traditionally for the treatment of excitability, neuralgia and depression. JWO has been shown to have anticancer activity via apoptosis in glioblastoma cells. However, information on whether JWO is effective on the autophagy mechanism in glioblastoma is still not known. Therefore, the present study was the first to investigate the autophagy mechanism T98 glioma cells. The T98 human glioblastoma multiforme cells were divided in three groups. Group 1: T98 glioma cells with no treated (Control group). Group 2: T98 glioma cells treated with 3 µl/ml JWO. Group 3: T98 glioma cells treated with 6 µl/ml JWO. The effects of JWO on cell viability, oxidative stress, autophagy and apoptosis at IC50 dose were studied. The proliferation of glioma cells was inhibited in 5.296 µl/ml dose. JWO induced apoptosis in T98 glioma cells compared to control group and the differences were statistically significant ($p<0.001$). Apoptosis was determined via TUNEL method and results were checked by flow cytometry. We also investigated the effects of JWO on autophagy in T98 glioma cells by immunostaining LC3II and MDC fluorescent stainings. The differences between JWO treated and nontreated group were statistically significant ($p<0.001$). The immunofluorescence staining results of LC3II was confirmed by Western blotting analysis. JWO seems to be an effective treatment agent for glioblastoma. Not only does it induce apoptosis via oxidative stress but also affects the autophagy. The use of JWO in combination with other treatment options may increase the efficacy of treatment.