عنوان مقاله:

Investigating the effects of rubiadin on apoptosis induction and autophagy inhibition in HT۲۹ cells

محل انتشار:

اولین کنگره ملی تازه های همگرایی علوم پایه و علوم پزشکی (سال: 1401)

تعداد صفحات اصل مقاله: 2

نویسندگان:

Sama Alizadeh Amirabad - *Department of Cellular and Molecular Biology, Faculty of Advanced Sciences and Technology ,Tehran Medical Sciences, Islamic Azad University, Tehran, Iran*

Mahsa Ahmadi - *Department of Cellular and Molecular Biology, Faculty of Advanced Sciences and Technology ,Tehran Medical Sciences, Islamic Azad University, Tehran, Iran*

Mohadeseh Omranzadeh - *Department of Pharmacology and Toxicology, Faculty of Pharmacy and Pharmaceutical Sciences, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran*

Masoumeh Heshmati - *Department of Biology, Islamshahr Branch, Islamic Azad University, Islamshahr, Iran*

Zahra Mousavi
Nasrin Sartipnia

خلاصه مقاله:

Background: Investigating the effect of rubiadin on cytotoxicity, apoptosis induction, ROS level and cell cycle arrest as well as its effects on the autophagy pathway by examining changes in the expression levels of P۶۲, BECLIN۱, LC۳BI/II, ATG۵ and mTOR proteins in HT۲۹ cells.Materials and Methods: The effect of rubiadin toxicity on HT۲۹ cells in the concentration range (۰.۰۱-۵۰ µg/ml) and ۴۸h was investigated by MTT Assay. Then, the amount of ROS, cell cycle arrest, apoptosis through flow cytometry and changes in the expression of the desired proteins were checked by western blot.Results: IC۵۰ was reported at a concentration of ۱۸ µg/ml. Significant increase of intracellular ROS (p-value for concentrations of ۱۰, ۱۸, ۲۵ µg/ml was <۰.۰۰۰۱) and apoptosis (۱۰, ۱۸, ۲۵ µg/ml) as well as significant increase of P۶۲, BECLIN۱, LC۳BI/II , ATG۵ and mTOR proteins (۱۸ µg/ml) were observed in the group treated with rubiadin compared to the control group.Conclusion: Rubiadin is able to induce cytotoxicity, apoptosis and intracellular ROS on HT۲۹ cells. The increase of P۶۲ means the inhibition of autophagy, and its increase has the ability to activate the mTOR pathway, which also inhibits autophagy.Although autophagy and apoptosis are distinct processes, but there are pathways that can regulate both of them, the increase of P۶۲, BECLIN۱, LC۳BI/II and ATG۵ can help to promote apoptosis.

کلمات کلیدی:

Cancer, Rubiadin, Cytotoxicity, Apoptosis, ROS, Autophagy, HT۲۹