عنوان مقاله:

Comparison of the Effect of Adipose Mesenchymal Stem Cells-Derived Secretome with and without Reovirus in CT۲۶ Cells

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خلاصه مقاله:

Colorectal cancer is the fourth leading cause of cancer-related deaths that has significantly increased over the past three decades. New therapeutic approaches, such as oncolytic viruses, have become very imperative recently to destroy cancer cells. The use of mesenchymal stem cells (MSCs) secretome that is produced in response to variant conditions involves different paracrine molecules secretion that has therapeutic potential in several chronic diseases. Mesenchymal stem cells and their derivatives are employed as regenerative medicine; nevertheless, there is ambiguity in the function of these cells in the control of malignancy. This study aimed to examine the apoptotic effect of secretomes derived from MSCs affected by encompassing oncolytic reoviruses. Mesenchymal stem cells were cultured after separation from abdominal adipose tissue of BALB/c mice. After three passages, the cells were infected by reovirus at the multiplicity of infection of ۱ plaque-forming unit per cell. Uninfected and infected secretomes with reovirus were collected separately. The colorectal cancer CT۲۶ cells were confronted with uninfected secretome, infected secretions, reovirus as a positive control, and Dulbecco's Modified Eagle Medium/High Glucose as negative control separately. Finally, apoptosis and necrosis were evaluated by flow cytometry. The infected secretome with reovirus was capable to induce apoptosis more than the uninfected secretome in CT۲۶. However, the supernatant of reovirus infected cells was more capable to induce cell death, in comparison to the infected secretome. Infected MSCs with oncolytic reovirus produced a type of condition media that enhanced apoptosis induction and could have a therapeutic effect on cancer cells. Nonetheless, tumoral cells confronted with the oncolytic reovirus showed more capability in inducing apoptosis in CT۲۶ cells. As a result, the use of oncolytic virus and infected secretome are more effective than uninfected secretome in inducing apoptosis.

کلمات کلیدی:

Oncolytic Reovirus, Secretome, Colorectal Cancer Cell, Apoptosis, Cancer Therapy