عنوان مقاله:

Autologous Targeted Exosomes as a Drug Delivery System

محل انتشار:

دومین کنگره بین المللی پزشکی شخصی (سال: 1396)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Introduction: Exosomes are small (30 to 100 nm) membrane-bound particles that are released from many cell types. Like liposomes, they can be used as therapeutic drugs and it can be targeted to specific tissue by membrane modifications. Exosome from Mesenchymal Stem Cells (MSCs) have some advantages, MSCs have easy accessible source, and transplantation have been shown to be safe in numerous clinical trials. Materials & methods: Exosomes which produce by transduced MSCs were purified by exosinp® kit. Doxorubicin was loaded in exosomes by electroporation. Her2+ cell line was treated by dox (doxorubicin) loading exosomes. Binding of targeted exosomes to HER2+ cells relative to HER2- cells were assessed by flow cytometry. Cytotoxicity of loaded exosome were measured by MTT.Results: We produced Exosomes containing targeted protein on their surface, binding of labeled exosomes were quantified by flow cytometry, which was bound to HER2+ cells 56% and 1.6% to HER2- cells. Cytotoxicity of exosomes-loaded and free dox were compared by MTT assay and there was no significant differences in their results. Conclusion: our results represented that, exosomes derived from engineering cells can be used as a targeted delivery systems, since they can preferentially enter HER2+ cell lines relative to HER2- cells. Furthermore, there is no significant differences in toxicity of exo-DOX and free DOX neither in BT-474 nor MDA-MB231 which indicated that encapsulation has no effect on DOX cytotoxicity but can reduce side-effect of it by decreasing in .systemic absorption

کلمات کلیدی:

Targeted exosomes, Drug Delivery, Mesenchymal Stem Cells, Her2+, Doxorubicin