عنوان مقاله:

In silico and in vitro studies of cytotoxic activity of different peptides derived from vesicular stomatitis virus G protein

محل انتشار:

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نویسندگان:

Fereshte Ghandehari - *Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Mandana Behbahani - *Department of Biotechnology, Faculty of Advanced Sciences and Technologies, University of Isfahan, Iran*

Abbasali Pourazar - *Department of Immunology, Isfahan University of Medical Science, Isfahan, Iran*

Zahra Noormohammadi - *Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran*

خلاصه مقاله:

Objective(s):This study aims at exploring cytotoxic activity of different peptides derived from VSVG protein against MCF-۷ and MDA-MB-۲۳۱ breast cancer cell lines and human embryonic kidney normal cell (HEK ۲۹۳). Materials and Methods: The ANTICP web server was used to predict anticancer peptides. The cytotoxic activity of peptides with high score (P۲۶, P۷) and low score (P۱۹) was examined by MTT and DNA fragmentation assays. Results: The results obtained from ANTICP web serverdemonstrated that ۴ out of ۴۸ peptides (P۲۶, P۷, P۱۰, and P۱۶) had anticancer activity. P۲۶ and P۷ peptides of these ۴ peptides were detected to have high cytotoxic activity against MCF-۷ cells with CC۵۰ values of ۹۸,۲۸۰ µg/ml and MDA-MB۲۳۱ cells with CC۵۰ ۱۰۰,۵۵۰ µg/ml, respectively. In addition, the results showedthat amino acid residues of these ۴ peptides were located near fusion domain. Conclusion: The results confirmed that P۲۶ and P۷ peptides might induce membrane damage and initiate apoptosis. The present study suggested that P۲۶ and P۷ peptides could be appropriate candidates for further studies as cytotoxic agents and modifications in the residue at positions ۷۰-۲۸۰ might potentially produce a more efficient VSVG protein in gene therapy.

کلمات کلیدی:

ANTICP, Apoptosis, Cytotoxic, Pseudo typing, VSVG protein