عنوان مقاله:

Synthesis and In Vitro Anticancer Evaluations of Deferasirox Iron Chelator

محل انتشار:

اولین سمپوزیوم بین المللی سرطان نسترن (سال: 1394)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Samie Salehi - *Department of Chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

Amir. Sh Saljooghi - *Department of Chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

Seyed Mojtaba Mashmoul Moghadam - *Department of Chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

Fatemeh Delavar - *Department of Chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

خلاصه مقاله:

Many types of cancer cells reprogrammed iron metabolism in ways that result in net ironinflux. They upregulate proteins that are involved in iron uptake, such as transferrin receptor 1(TFR1), STEAP proteins and lipocalin 2 (LCN2), and decrease the expression of iron effluxproteins, such as ferroportin. Iron chelators are natural or synthetic small molecules that bindiron with a high affinity. The avidity of cancer cells for iron has led to the question of whetheriron chelators could be used in cancer therapy. The aim of present study was to examine newrole of Deferasirox as an important class of iron chelators as anticancer agents due to itsability to chelate with Iron. Deferasirox was prepared according to a known procedure bySteinhauser. Moreever, the cytotoxic activity of Deferasirox have been investigated by MTTassay, using cis-platin as comparative standard against human breast cancer cells (MCF-7),human cervix epithelial carcinoma (HeLa), human colon cancer cell line (HT-29), humanleukemia cell line (K-562), bladder cancer cell line (T-24), non-small cell lung carcinoma (A-549), mouse neuroblastoma cell line (Neuro-2a) and mouse fibroblast L-929 cell lines. Theresults demonstrate that Deferasirox induce apoptosis in cancer cell lines. Deferasiroxexhibits the highest selectivity against human breast cancer cells (MCF-7) and human coloncancer cell line (HT-29). Deferasirox showed a high population of apoptotic cell (69.3%), 1.2times higher than cis-platin (58.1%) at the same concentration and can induce apoptosis inHT-29 cancer cells lines. It is important to notice that Deferasirox has no effect on the L-929cell line which show Iron chelators could be consider as new target in cancer therapy incomparison with cis-platin.

کلمات کلیدی:

Iron Chelating Therapy, Deferasirox, Anticancer Activity, MTT Assay, Apoptosis,MCF-7