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Development of nanoparticulate system for ovarian cancer therapy

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In the last two decades, a number of nanoparticle-based therapeutic agents have been developed for the treatment of cancer. These nanoscale agents may provide more effective and/or more convenient routes of administration, lower therapeutic toxicity, extend the product life cycle and ultimately reduce health care costs. Folate-targeted drug delivery has become an alternative therapy for the treatment of various cancers, especially ovarian cancer. Folate receptors are known to be responsible for cellular accumulation of folate and folate analogs with high binding affinity. The anthracycline antibiotic doxorubicin has a broad spectrum of antineoplastic action and a correspondingly widespread degree of clinical use. Magnetic nanoparticles are being of great interest due to their unique purposes. For magnetic targeting, magnetic nanoparticle introduced first in the body and then under the influence of external magnets, it is possible to guide nanoparticles to a particular targeted site. Red blood cells derived vesicles maintains the material biocompatibility and preserves the complex protein makeup of RBCs essential for their bio-functionalities. The aim of work is to develop biocompatible nanoparticulate system that can be controlled by the external magnetic field and can be targeted via folate ligand in order to reach ovarian cancer. Red blood cells were used for biocompatibility of glucose/gluconic acid coated and doxorubicin loaded magnetic nanoparticles. In addition, folate ligand was linked to the nanoparticulate system. That nanoparticulate system can be effective potential doxorubicin carrier for targeted ovarian cancer therapy.

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Biography

Guliz Ak has completed her Msc studies from Ege University, Faculty of Science Biochemistry Department and initiated her PhD studies in 2010 in the same department. She has been working as a Research Assistant in Ege University, Faculty of Science Biochemistry Department since 2010 and also as a Researcher in Ege University Pharmacokinetic Drug Development & Research Center (ARGEFAR) Biosimilar Products Department Proteomics Unit since 2013. She is a Funded Researcher in two projects about nanoparticular anticancer agent researches.

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