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## Synthesis of dual drug and peptide decorated magnetic nanoparticles to address lung cancer

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Lung cancer rate is still 12.8% of all cancers in the world, and cause of 17.8% of all cancer deaths. Cancer is the beginning uncontrolled cell division. For the emergence of cancer, tumor cells must gain other malignant properties as well as invasion and metastasis. For this purpose, cancer cells use matrix metalloproteinases to surpass the barrier that contains extracellular matrix elements. Pemetrexed is a common drug used in combination with cisplatin and it is known that it has side effects as the other anti-cancer agents. It has many side effects such as changes in blood cell counts, diarrhea, vomiting, pain, redness, swelling or sores in the mouth, nausea, decreased appetite, fatigue, skin rashes, hair loss, constipation, loss of sensation, kidney failure and liver test abnormalities. Pazopanib is a new generation anti-cancer drug and, many phase studies have been found in clinical trial for the treatment of lung cancer screening, especially in combination with numerous drugs. Pemetrexed is also one of the drugs that are investigated in the use combination with pazopanib. Therefore, pazopanib and pemetrexed have been selected under the project. Under this project, at the first step magnetite nanoparticles functionalized with active amine groups. At the same time, anticancer agents were covalently bonded to a specifically designed peptide which is a substrate of a selected matrix metalloproteinase. In the final stage, we attached peptide-drug conjugates to magnetic nanoparticles via amide bond.

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### Biography

Yeliz Yildirim has completed her PhD studies in 2009 from Ege University, Faculty of Science Physical Chemistry Department. She has been an Associate Professor since 2014 at Ege University, Faculty of Science Chemistry Department. At the same time, she also started to work in Ege University Pharmacokinetic Drug Development & Research Center (ARGEFAR) as a Researcher in Imaging Department Pre-phase unit.

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