

Magnetic aerogels for potential targeted anticancer drug delivery and MRI contrast agent

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Abstract: In recent years, magnetic nanomaterials have been designed for cancer treatment applications, which can adjust the pharmacokinetics and pharmacodynamics of drugs, thereby improving treatment effect. Herein, a new strategy by using porous nanomagnetic Fe₃O₄ aerogel for anti-cancer drug delivery was reported. Doxorubicin were loaded into Fe₃O₄ aerogel, after that the magnetic drug-loaded particles were coated with albumin to form a targeted drug delivery platform. The new targeted anti-tumor drug platform has integrated MRI imaging and cancer therapy functions. It can be delivered to the tumor by the action of an external magnetic field. Most importantly, due to its controlled release, it can effectively increase bioavailability and reduce the side effects of anticancer drugs, which brings hope to cancer patients.

Keyword: aerogel; Fe₃O₄; anti-cancer; MRI imaging; drug delivery.

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