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Investigation of some physical properties magnetic graphite nanoparticle for potential application as drug delivery systems

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Nanostructured carbon magnetic materials have attracted the interest of the scientific community, not only of their physical properties, but mainly because of their potential applications in high-tech devices. These carbon based materials could be used in nanotechnology, sensors, detectors, actuators, among others, for applications in medicine magnetic imaging or even applications in telecommunications, electronics, biosensors, magnetic materials separation and mainly as drug delivery systems, since they act directly on the desired cells with the use of an external magnetic field [1]. Some applications of bionanotechnology have led to growing concerns due to lack knowledge over the extent of adverse effects generated from the usage of nanoparticles. Therefore, it is necessary to perform extensive research for these materials [2]. Recent studies examining the toxicity of nanomaterials in cell cultures and animals have shown that size, surface area, surface chemistry, solubility and possibly shape all has a important role in determining the potential for engineered nanomaterials may cause damage [3] or demonstrate high affinity cationic sites on cell surface promoting interaction [4].
The main goal of the present work is the characterization of magnetic graphite nanoparticle by Zeta potential technique (Zetasizer-Malnern), whereby the dispersion, particle size (120-180 nm) and superficial charge (±40 mV) were determined in different solubilizers and the structure morphology were evaluated by atomic force microscopy and electron scanning microscopy techniques.
Keywords: carbon magnetic, drug delivery systems, characterization, nanoparticle.

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