

## Synthesis of water soluble PEGylated magnetic complexes using mPEG-fatty acid for biomedical applications

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We report the successful fabrication of the various types of water-soluble PEGylated magnetic complexes (PMCs) for magnetism related biomedical applications. Various types of PMCs were synthesized and teated to accomplish phase transfer from organic to aqueous phase using monomethoxy polyethylene glycol (mPEG)-fatty acid amphiphilic block copolymers (PFs) through conjugation of the hydroxyl group of mPEG with the carboxyl group of fatty acids. Fatty acids are known as low toxic and essential components in human body systems, including the immune system and in blood pressure regulation. As fatty acids, moreover we used hexanoic acid, lauric acid, stearic acid and oleic acid which were widely employed for hydrophobic ligands.