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Cell targeting small peptides as smart ligands for targeted drug delivery

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Targeting ligands are used in drug delivery to decrease the side effects and increase the bio-availability of drugs. Small peptides with high affinity for special receptors have attracted more attention as a new class of ligands to deliver specifically therapeutic and diagnostic agents. They are typically identified by using phage display and chemical synthetic peptide library methods. In comparison with other conventional ligands such as antibodies, these ligands have several advantages including easy synthesis, smaller physical sizes, lower immunogenicity and cytotoxicity and their simple and better conjugation to nano-carriers and therapeutic or diagnostic agents. In our research, we have used small peptides as a targeting ligand to deliver therapeutic agents to activated platelets and cancerous cells. In our previous study, we used nanoliposomes modified with a motif of RGD peptide to deliver eptifibatide (as an anti-platelet drug) to activated platelets. The *in vitro* and *in vivo* results showed that encapsulation of eptifibatide into RGD-modified nanoliposomes significantly improved platelet aggregation inhibitory activity of drugs compared to free drugs. In our next study, we will be using small peptides as targeting ligands for drug targeting to cancerous cells.

Biography

Hassan Bardania has completed his PhD from Tarbiat Modares University, Iran. He has published more than 10 papers in reputed journals.

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