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Pardeep K Gupta

University of the Sciences in Philadelphia, USA

Design of growth-hormone binding peptide and its use as a vehicle for nanoparticle-based delivery of growth-hormone

A novel peptide that mimics the binding properties of growth hormone binding protein (GHBP) was designed and synthesized. This peptide, termed growth hormone binding peptide (GHBpep) contains the functional epitopes of GHBP that allow it to bind to GH. This peptide was studied for its binding to GH in solution to characterize its binding affinity and thermodynamics of the binding process. These studies show that GHBpep binds to GH in a 1:1 ratio. GHBpep was covalently linked to bio-functionalized biodegradable PLGA nanoparticles. Reversible binding of GH to immobilized GHBpep was studied using equilibrium binding studies. The results of these studies indicate that GH can be loaded onto functionalized biodegradable nanoparticles in a reversible manner, and can be used as a delivery system for GH.

Biography

Pardeep K Gupta is the Burroughs Wellcome Professor at Philadelphia College of Pharmacy, University of the Sciences in Philadelphia. He earned his PhD degree in Pharmaceutics from University of Wisconsin. He has published numerous scientific papers in the area of drug delivery. His work at the university has resulted in filing of two patent applications in the area of drug delivery. He served on the editorial board of *Remington-The Science and Practice of Pharmacy* and has authored chapters in several books.

p.gupta@usciences.edu

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