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Nanotechnology in medicine-Nanomedicine

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Nanotechnology for drug delivery involves the approaches of nanoparticles to deliver drugs, other therapeutic substances to specific types of cells. Nano-sized devices are a lot smaller than human cells but similar size to biomolecules such as proteins and enzymes. They have the ability to penetrate even the blood brain barrier which is impervious to most therapeutic agents; this is due to their small size. This review focuses on types of nanocarriers for drug delivery and their respective drugs which include Lipid-Based Nanoparticles: Doxil, Inflexal V, ImmTher, DaunoXome, CPX-1, LE-SN38, MCC465, anti-HER2; Polymeric Micelles: Genexol-PM, NK911, SP1049C, NK105, NC6004; Polymer-Based Nanoparticles: Zoladex, Lupron Depot, Oncaspar, PEG intron, Zinostatin (Stimamler), PK1; Protein-Based Nanoparticles: Abraxane, Ontak, Zevalin, Bexxar, ABI-008 (nab-docetaxel), ABI-009 (nab-rapamycin); Microparticles and Nanoparticles: AI-850, IL-2 XL; Nanoemulsions: NB-001, MagForce Nanotechnologies AB. This paper also discusses some nanotechnology-based drugs that are commercially available or in human clinical trials which include Abraxane, Doxorubicin Liposomal (Doxil), Onivyde, C-dots (Cornell dots), Loteprednol etabonate, KPI-121 and nanotechnology in medicine application in various area such as drug delivery, therapy techniques, diagnostic techniques, anti-microbial techniques and cell repair.

Biography

Swaroop Rani N Gupta has completed her PhD in Chemistry from Nagpur University, Maharashtra, India in 1993. She is an Associate Professor in the Department of Chemistry, Brijlal Biyani Science College, India. She has published more than 20 papers in reputed international journals.

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