

NANOMEDICINE APPROACH FOR SUSTAINED RELEASE DELIVERY OF AVASTIN: TREATMENT FOR PXE AND AMD

Gold nanoparticles possess unique properties including preferential binding to leaky blood vessels, ability to bind to a variety of ligands, with no evidence of cellular toxicity, making them an excellent platform for targeted sustained release of drugs. Avastin (Bevacizumab) is a humanized monoclonal antibody specifically targeting vascular endothelial growth factor (VEGF) that has found widespread use in inhibiting intraocular neovascularization manifested in macular degeneration and proliferative diabetic retinopathy. The conjugation of gold nanoparticles (AuNP) with Avastin (Av) yields AvAuNP nanoconjugates. Avastin conjugated gold nanoparticles (AvAuNP) can be used as therapeutic agents in the treatment of ophthalmic neovascular disorders, such as macular degeneration, PXE and proliferative diabetic retinopathy. AvAuNP nanoconjugate is a potential clinical therapeutic agent and has demonstrated excellent ability to deliver Avastin for sustained release of therapeutic dose within the eye. The design and development of AvAuNP conjugate would help in the initiation and completion of preclinical evaluations aimed at determining the ability to achieve long-term suppression of intraocular neovascularization in large animals.

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