Age-related Macular Degeneration (AMD) is a back of the eye disease – a common cause of vision loss in elderly people.

AMD treatment - regular intravitreal injections associated with serious side effects, such as retinal detachment, an increase in intraocular pressure, etc.

There is an unmet need for the development of a non-invasive treatment option for AMD.

The nanoparticles were optimized using factorial Placket Burman DOE

The zeta potential & % Encapsulation efficiency of PLGA & coated NPs was - 4.1 ± 1.4 mV & +44.1 ± 5.0 mV: 63.1% ± 6.4% & 34.4% ± 7.9%

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Fig 1: Particle size distribution of PLGA and chitosan coated PLGA NPs

Fig 2: Thermogravimetric analysis

Fig 3: Differential scanning calorimetry analysis

Fig 4: In-vitro drug release in PBS with 1% tween80

Fig 5: % cell viability of drug, blank and drug loaded NPs

▪ Successful optimization of surface modified PLGA NPs with 28% drug release in 32 hours, reaching a plateau suggesting the controlled release of the drug.

▪ Stable monodispersed NPs proved non-toxic on primary human corneal epithelial cell lines.