

Supplementary Information

Superior gene transfection efficiency in triple negative breast cancer by RAFT mediated amino acid based cationic diblock copolymers

Rima Saha^a, Satyajit Haldar^b, Subhashree Subhasmita Pradhan^a, Kuladip Jana^b, Kishor Sarkar^{*a}

^aGene Therapy and Tissue Engineering Lab, Department of Polymer Science and Technology University of Calcutta, 92, A.P.C. Road, Kolkata - 700009, India .

^bDivision of Molecular Medicine, Bose Institute, EN-80, Sector V, Salt Lake City, Kolkata-700091, India.

* Corresponding Author

Email: kspoly@caluniv.ac.in

Ph. no- +91-33-2350-1397 (Ext-285)

Orcid ID- orcid.org/0000-0002-1451-426X

Website- www.kishorgttl.com

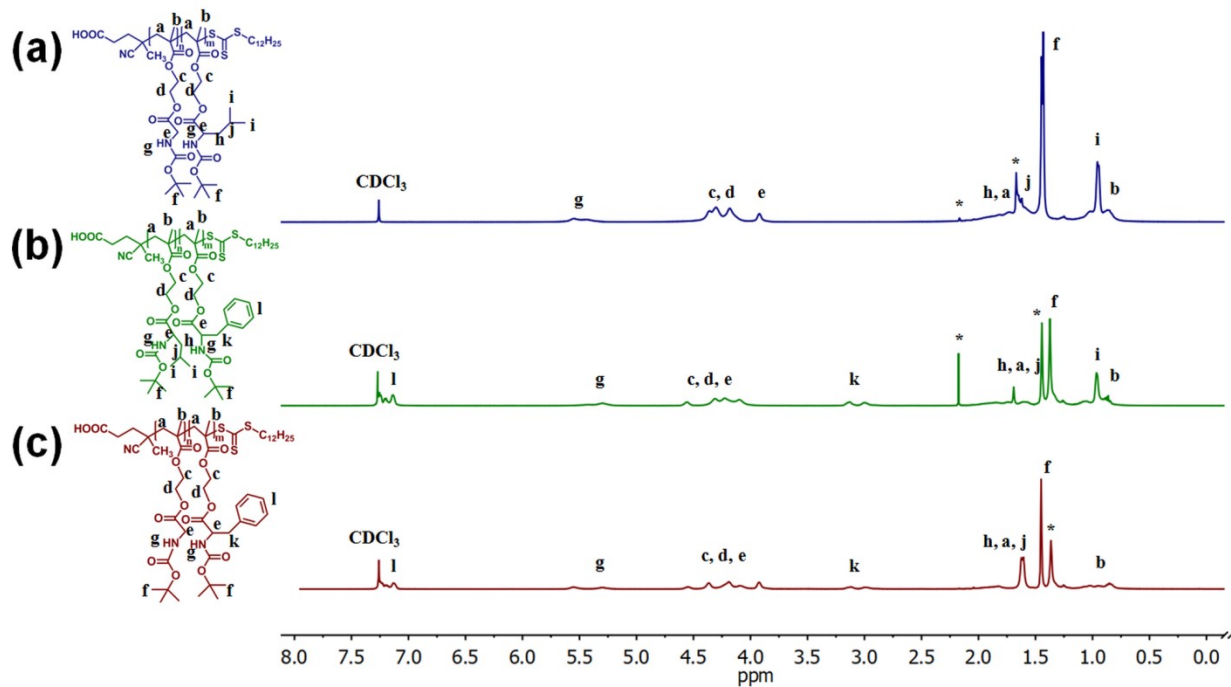


Figure S1. ^1H NMR spectra of -Boc protected di-block copolymers i.e; P(BHG)_n-b-P(BHL)_m (a), P(BHL)_n-b-P(BHP)_m (b), P(BHG)_n-b-P(BHP)_m (c).

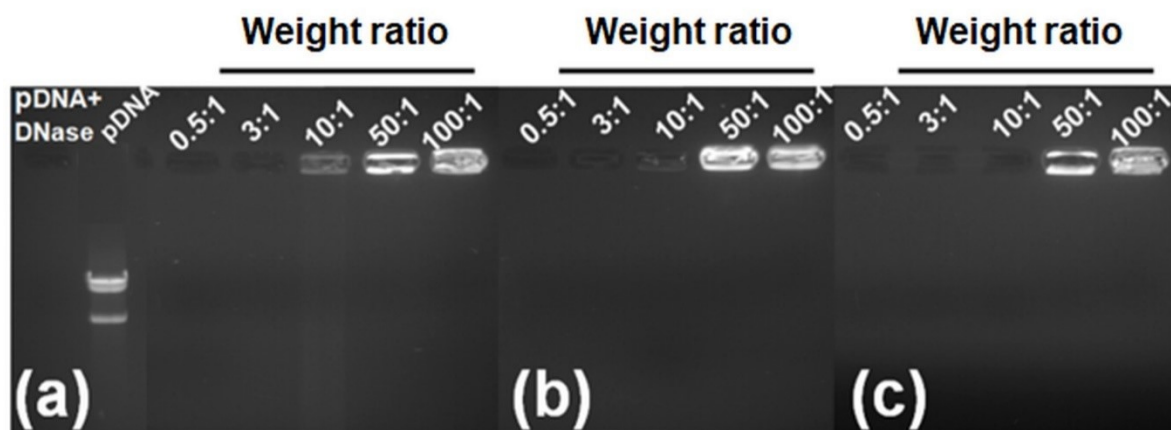


Figure S2. DNase-1 assay of P(HGN)_n-b-P(HLN)_m/pDNA complex **(a)**, P(HLN)_n-b-P(HPN)_m/pDNA complex **(b)** and P(HGN)_n-b-P(HPN)_m/pDNA complex **(c)**.

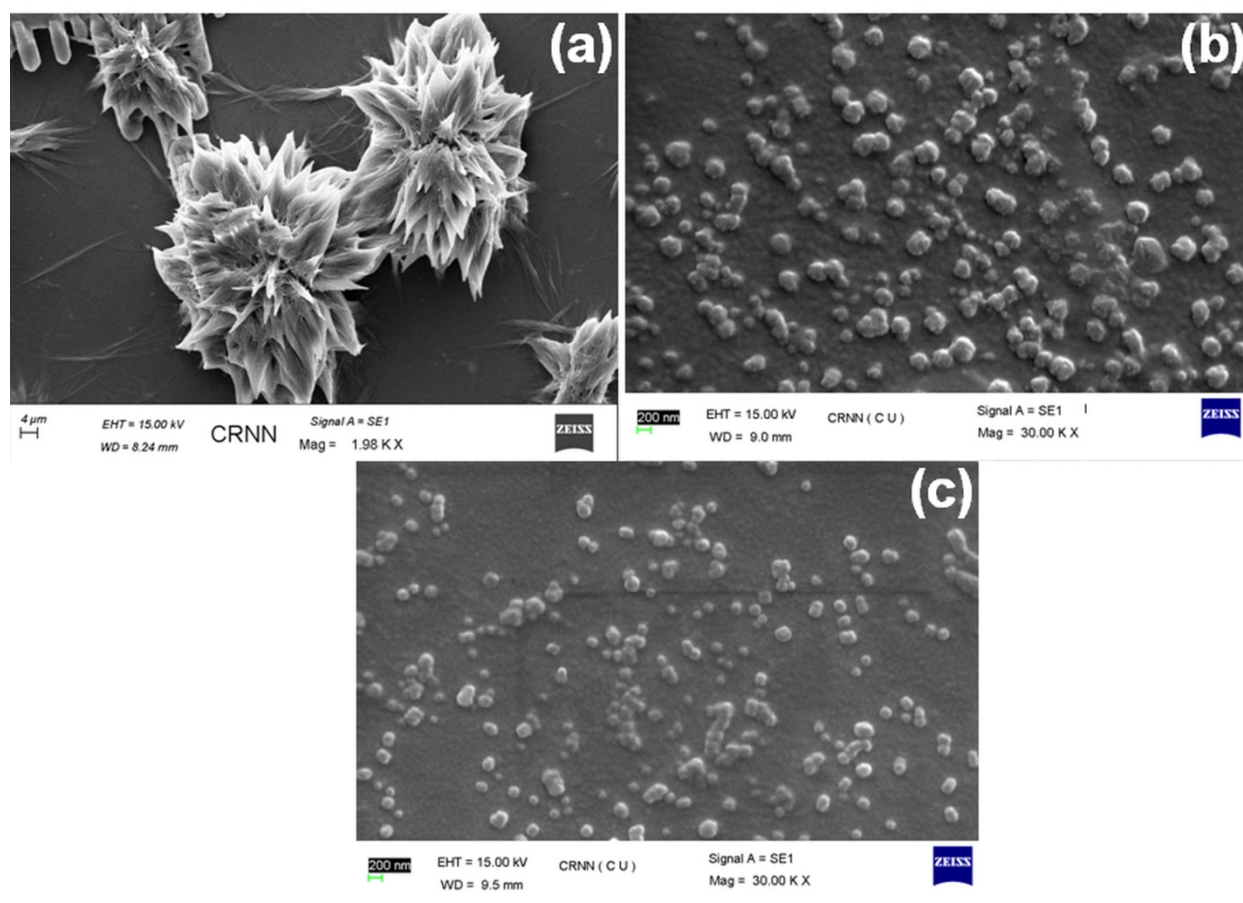


Figure S3. Characterization of polyplex: SEM micrographs of P(HGN)_n-b-P(HLN)_m/pDNA complex **(a)**, P(HLN)_n-b-P(HPN)_m/pDNA complex **(b)**, P(HGN)_n-b-P(HPN)_m/pDNA complex **(c)** at a weight ratio of 100:1.

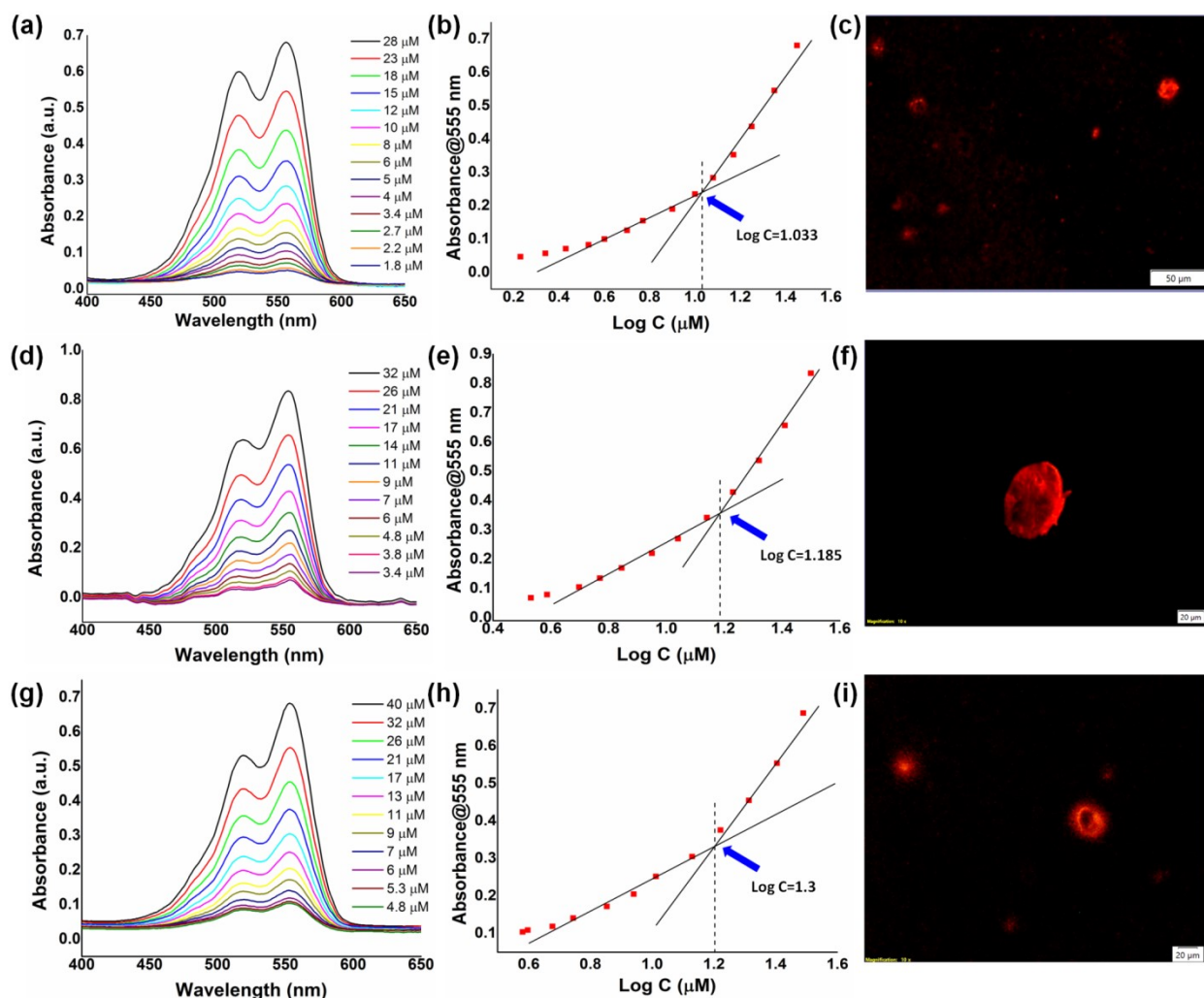


Figure S4. UV-Vis spectra of P(HGN)_n-b-P(HLN)_m (a), P(HLN)_n-b-P(HPN)_m (d) and P(HGN)_n-b-P(HPN)_m (g) with varying concentration; CMC determination plot: absorbance vs. concentration curve of P(HGN)_n-b-P(HLN)_m (b), P(HLN)_n-b-P(HPN)_m (e) and P(HGN)_n-b-P(HPN)_m (h) at $\lambda_{\max}$ =555 nm; fluorescence microscopic images of the micelles formed by dye encapsulated polymers P(HGN)_n-b-P(HLN)_m (c), P(HLN)_n-b-P(HPN)_m (f) and P(HGN)_n-b-P(HPN)_m (i) at CMC.

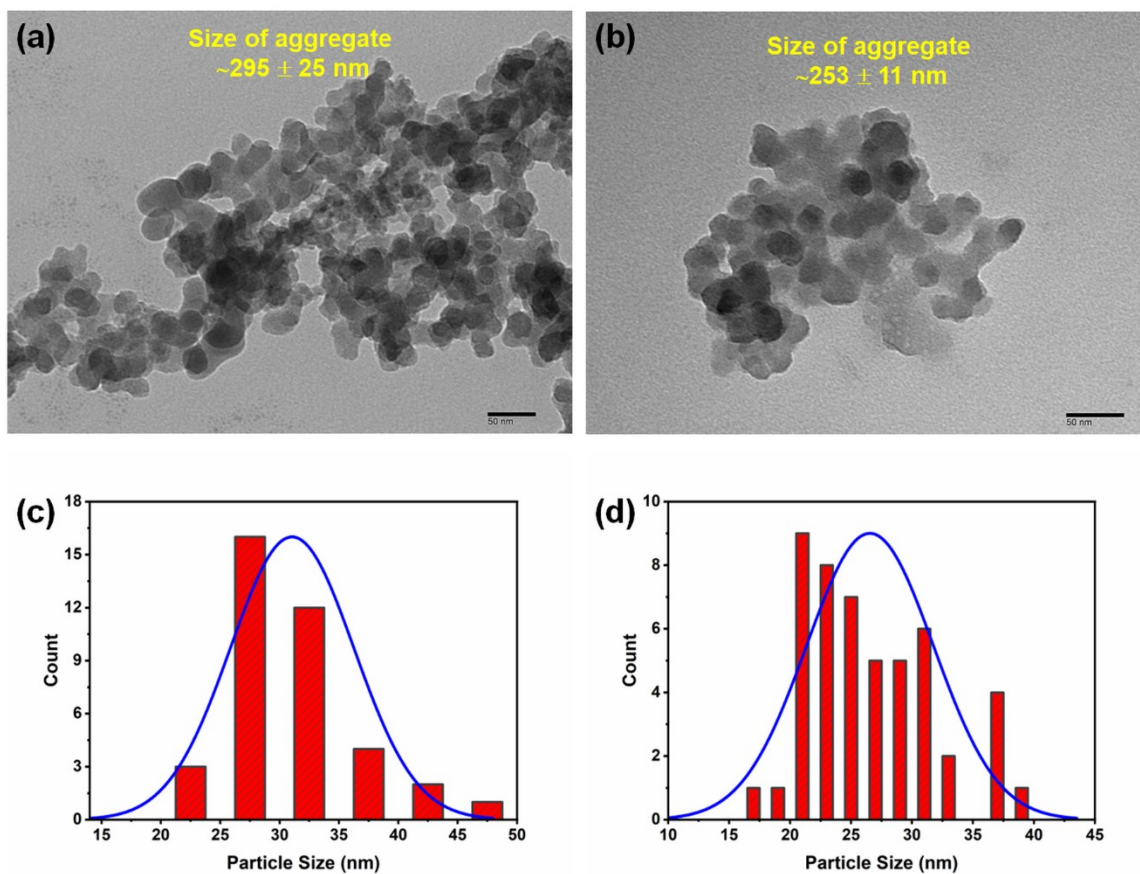


Figure S5. TEM micrographs of P(HLN)_n-b-P(HPN)_m (a) and P(HGN)_n-P(HPN)_m (b) micelle in aqueous media and corresponding particle size distributions of P(HLN)_n-b-P(HPN)_m (c) and P(HGN)_n-P(HPN)_m (d).