

Supporting Information

Dual-component Carrier with both Non-enzymatic and Enzymatic Antioxidant Activity towards ROS Depletion

*Maria York-Duran, Maria Godoy-Gallardo, Michelle Maria Theresia Jansman and Leticia Hosta-Rigau**

Dr. M. York-Duran, Dr. M. Godoy-Gallardo, M. M. T. Jansman, Prof. L. Hosta-Rigau.
Department of Health Technology (DTU Health Tech)
Technical University of Denmark
Produktionstorvet, Building 423, 2800, Lyngby, Denmark.
E-mail: leri@dtu.dk

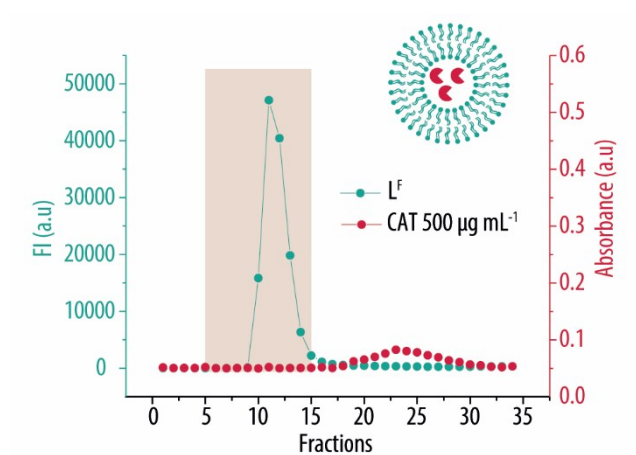


Figure S1. Elution profile of liposomes and the catalase (CAT) enzyme in size exclusion chromatography. Fluorescence readings (FI) of different fractions containing fluorescently labelled liposomes (L^F) and absorbance readings of several fractions containing CAT. Fractions 5 to 15 are collected for further experiments.

Determination of Encapsulation Efficiency (EE%)

The encapsulation efficiency was calculated as:-

$$EE\% = \frac{CAT_{encapsulated/associated}}{CAT_{added}} \times 100$$

Being the CAT encapsulated/associated the amount of enzyme determined by microBCA assay upon purification of L_{CAT}, we have estimated the amount of entrapped/associated enzyme with the liposomes to be $3.0 \pm 0.8\%$.

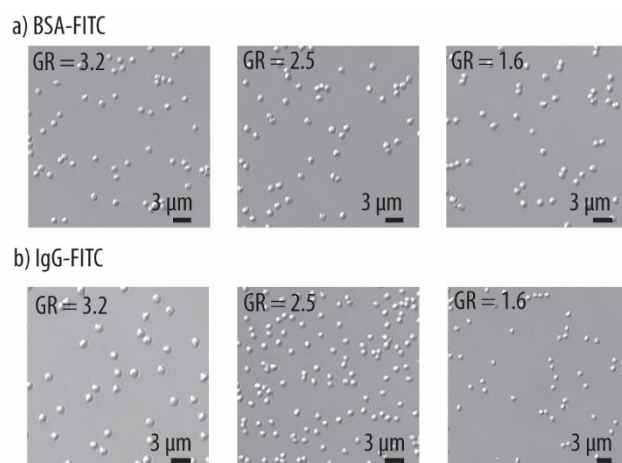


Figure S2. Differential interference contrast (DIC) images of the MG/L/PDA/PEG carriers at the different GRs after being incubated with BSA-FITC **(a)** or IgG-FITC **(b)** at the lowest studied concentration (0.075 mg mL^{-1}).

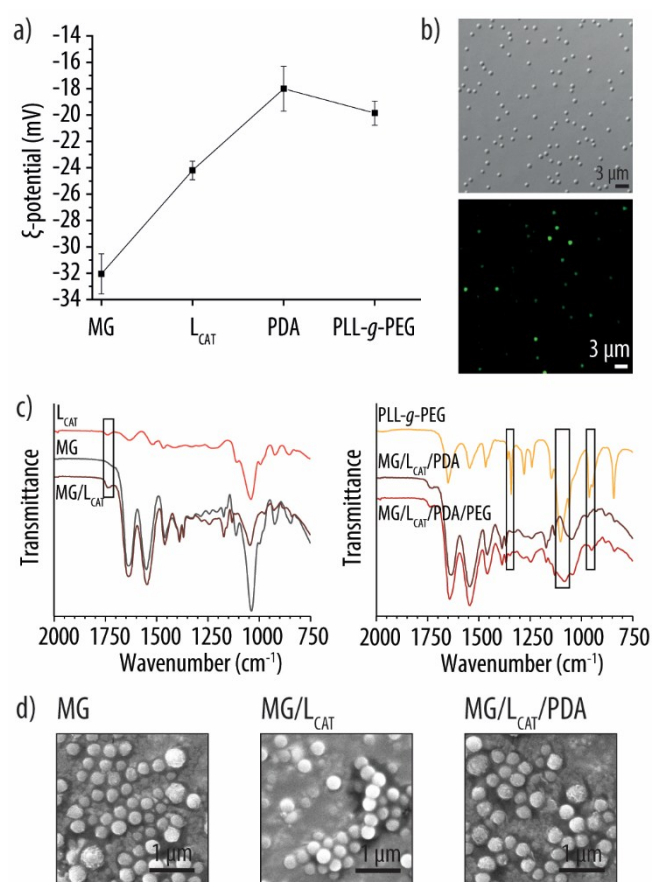


Figure S3. a) Zeta (ζ)-potential measurements of microgels (MGs) after the deposition of catalase (CAT)-loaded liposomes (L_{CAT}), a poly(dopamine) (PDA)-coating, and the co-polymer poly-*L*-lysine-*graft*-poly(ethylene glycol) (PLL-*g*-PEG). **b)** Differential interference contrast and fluorescence microscopy images of the dual-component carriers loaded with fluorescently labelled CAT-loaded liposomes. **c)** Fourier-transform infrared (FTIR) spectra of the assemblies following L_{CAT} deposition and after functionalization with PLL-*g*-PEG. **d)** Scanning electron microscopy images of the different coating steps.