

Supplementary Material

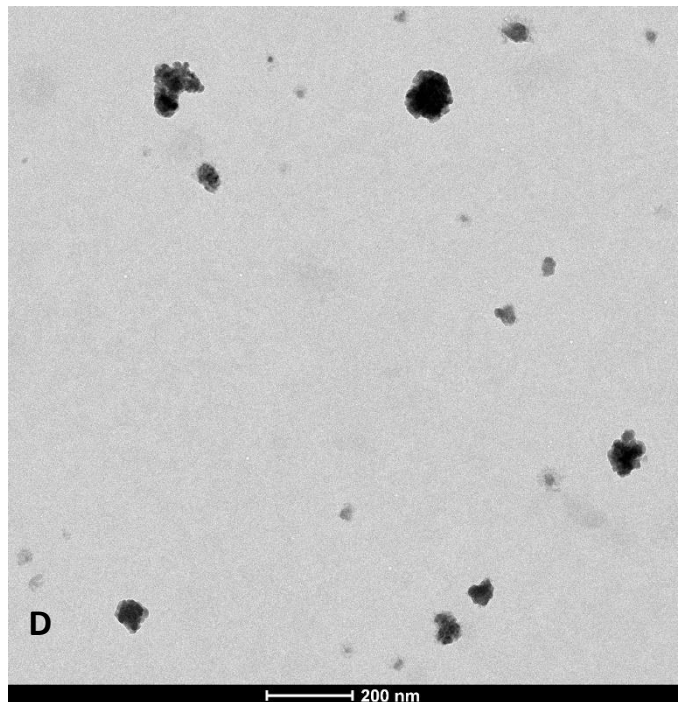
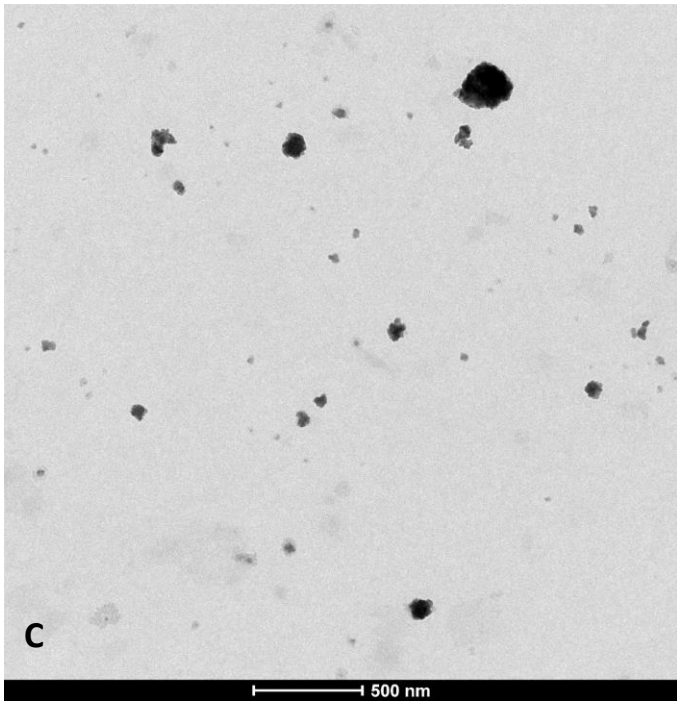
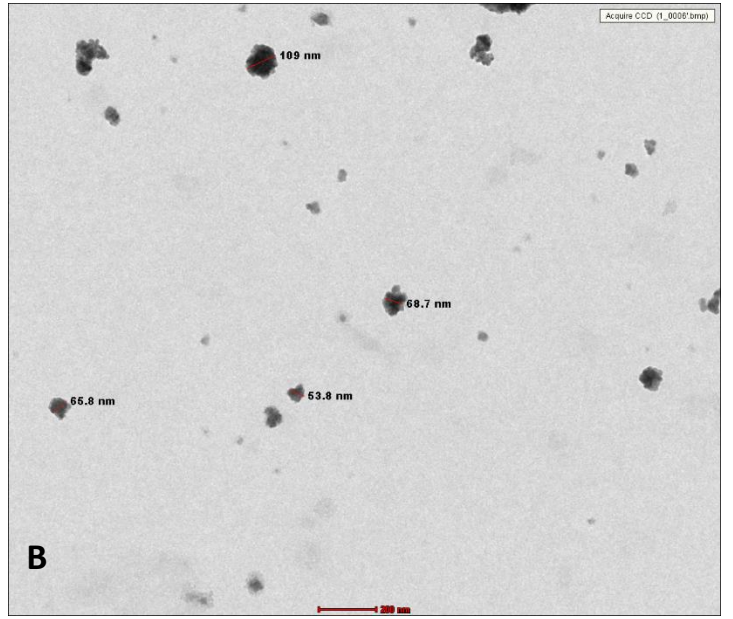
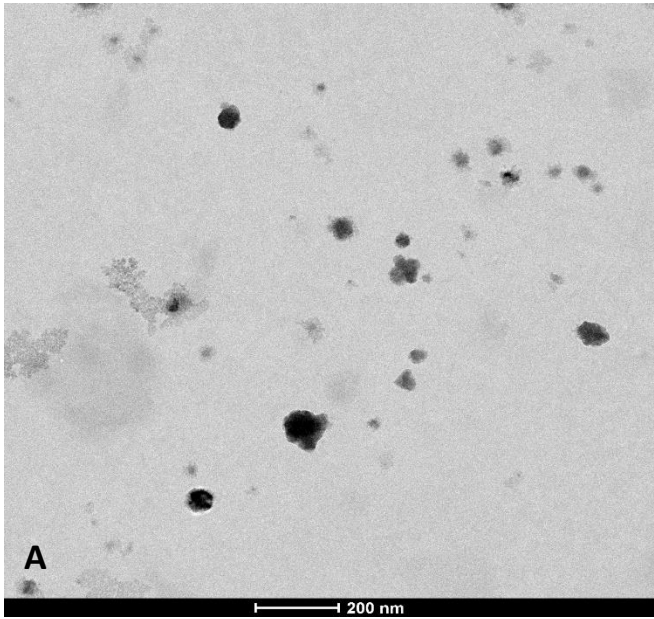
Biophysical characterization of lutein or beta carotene-loaded cationic liposomes

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In this Supplementary Information, three repeats of each TEM image were provided. In the following images, low magnification images are provided which show the morphology of a few particles, while the high magnification images focus on fewer particles (maximum three particles). Selection of the particles in the high-magnification images was based on the fact that these shapes appeared commonly in most of the captured images. The images provided below are from 3 independent samples for each formula.



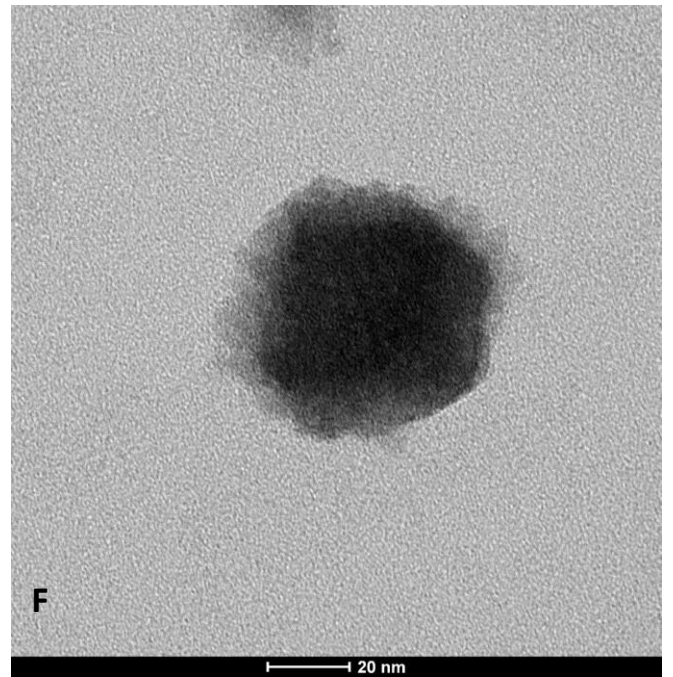
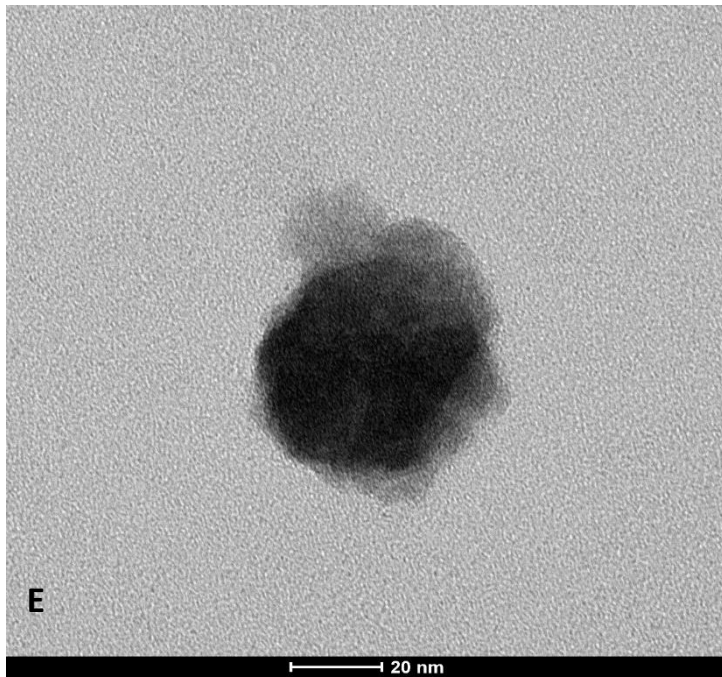
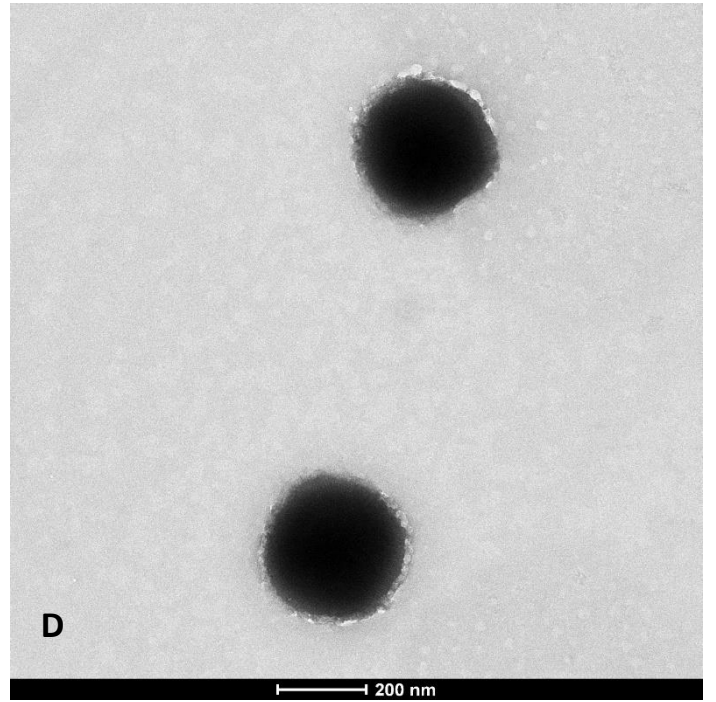
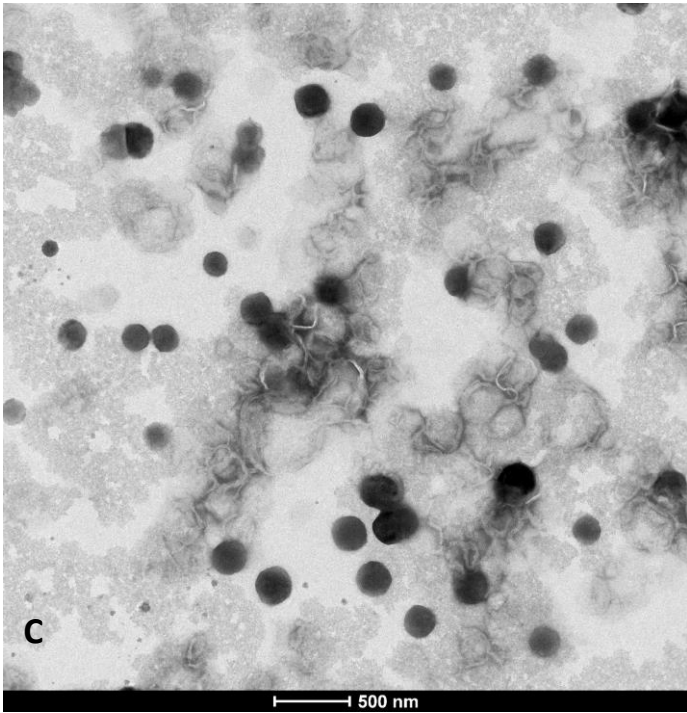
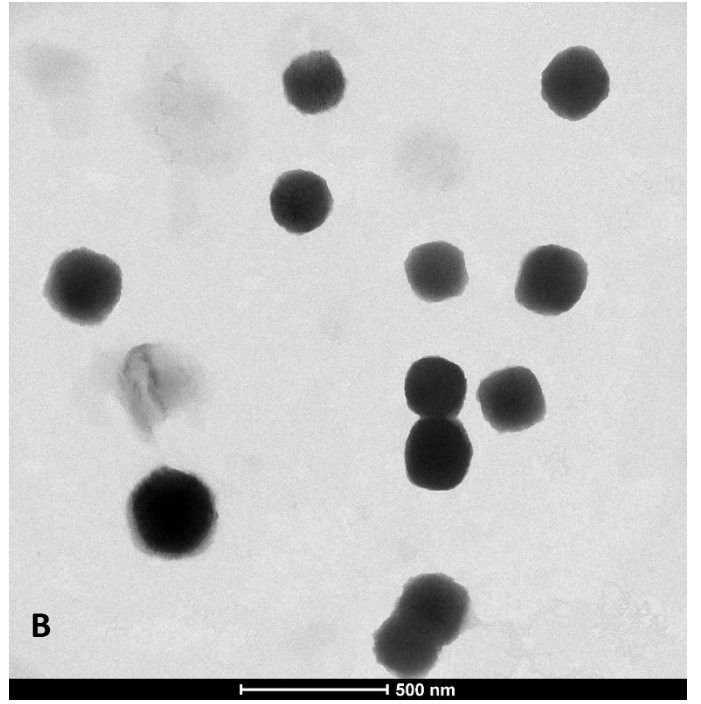
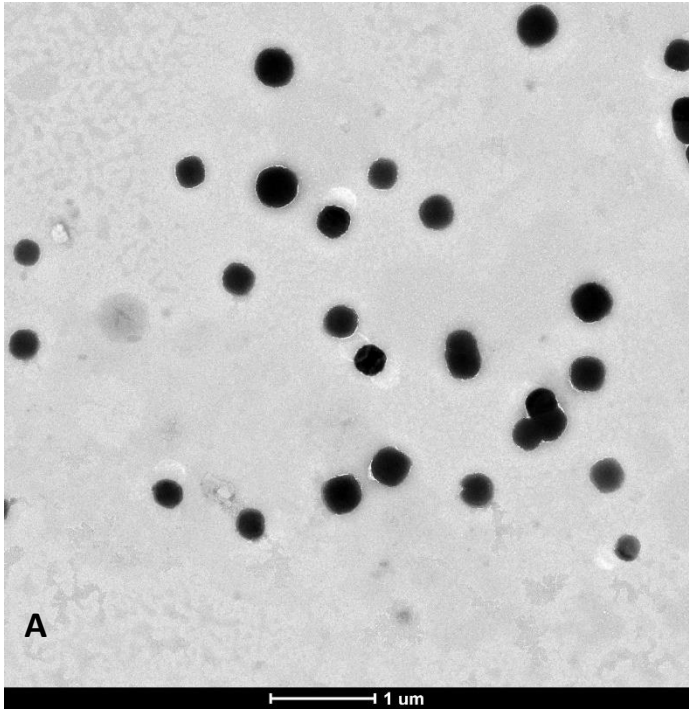


Fig 1 TEM images showing the size of neutral liposomes (NL) which is not imparted with a surface charge at low magnification in A-D and at high magnification E & F.



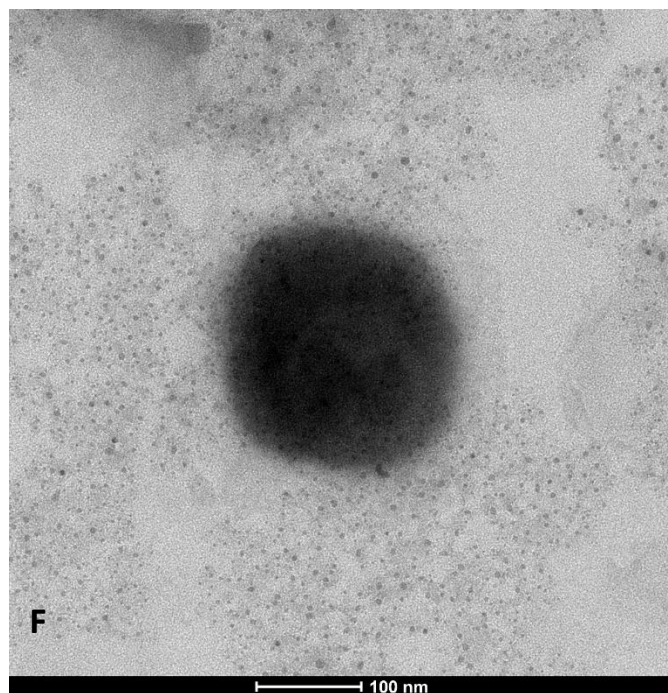
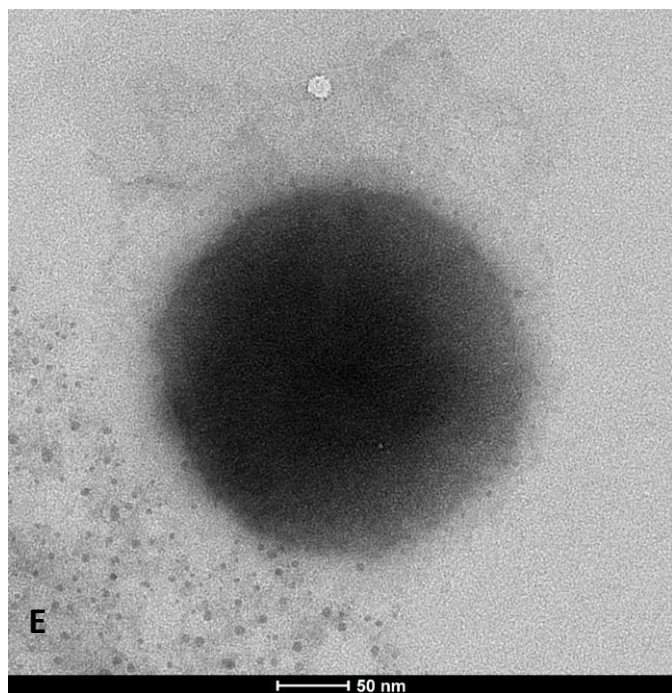
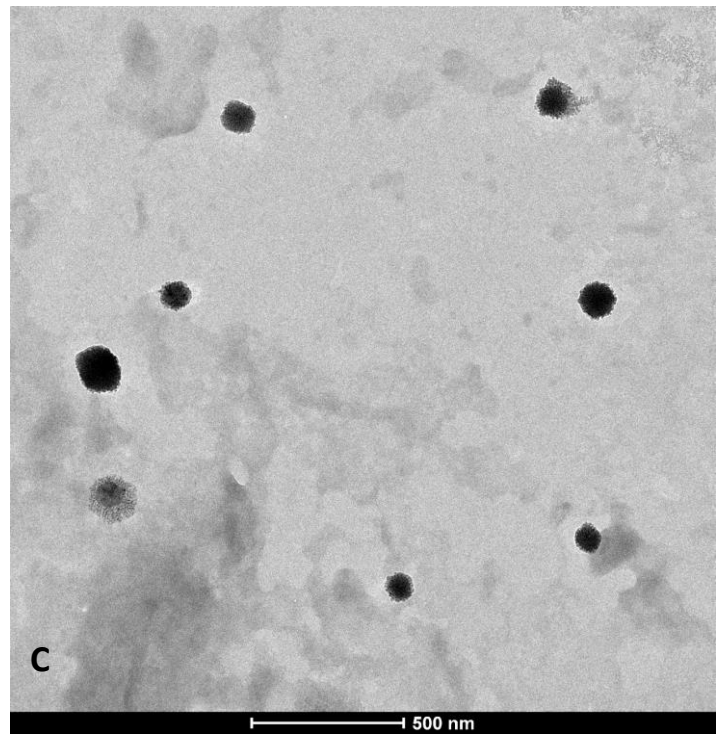
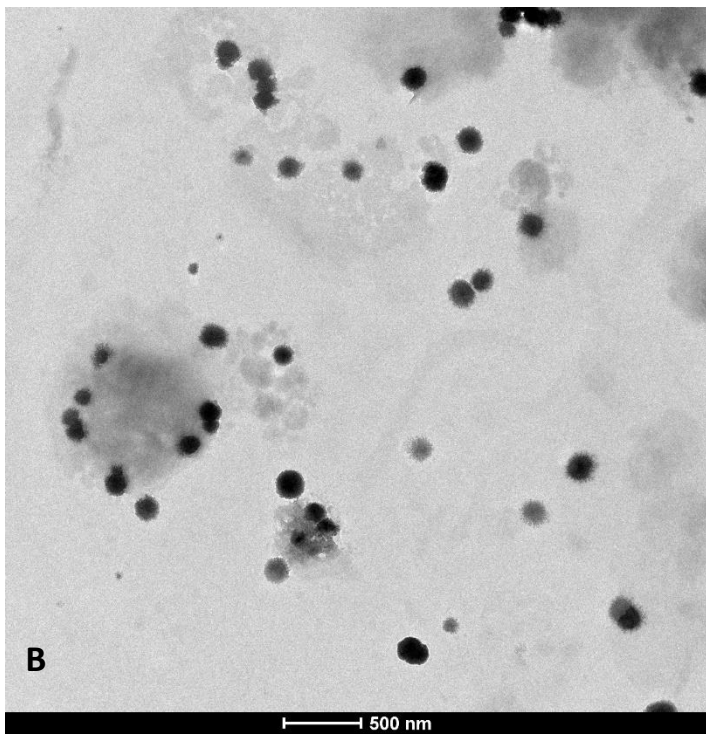
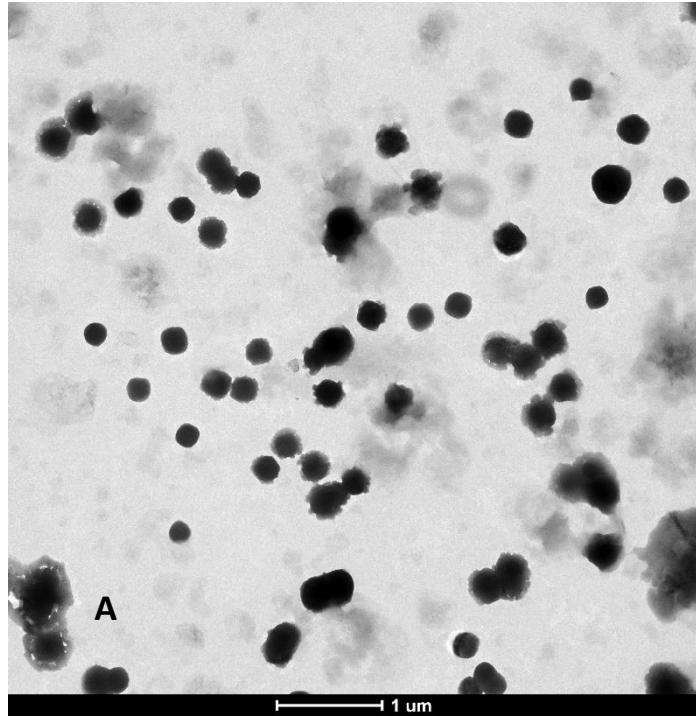


Fig 2 TEM images showing cationic liposomes (CL) which is imparted with the positive surface charge at low magnification in A-D and at high magnification E & F.



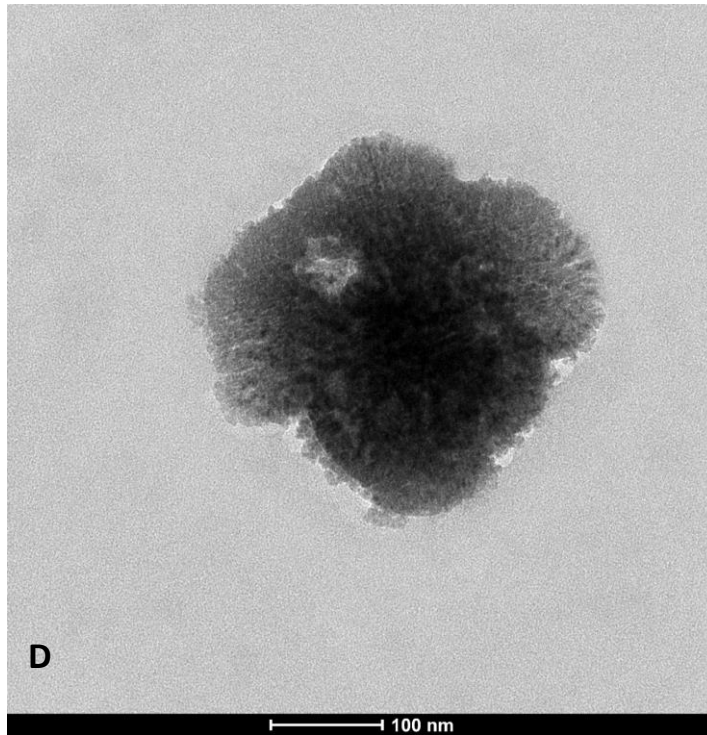
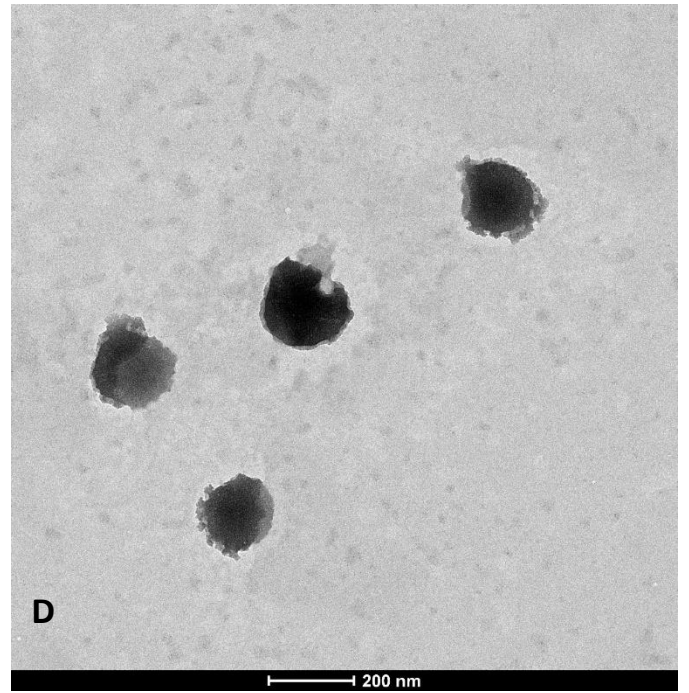
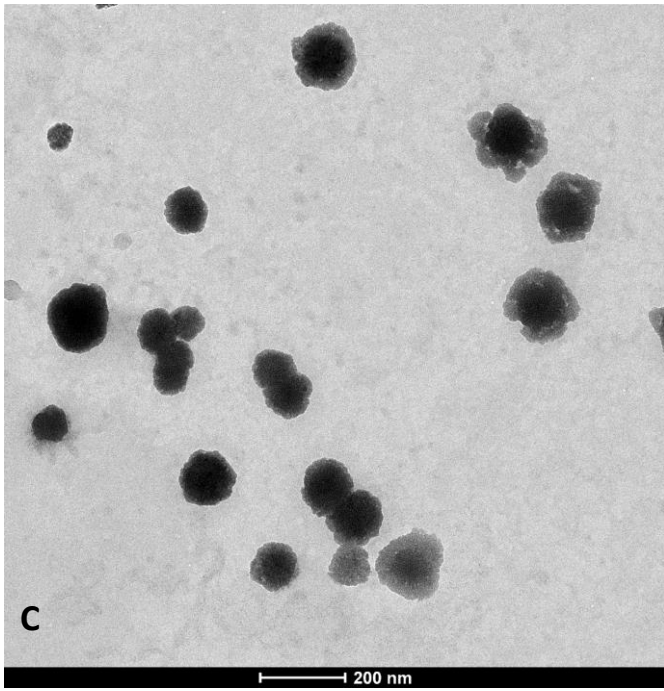
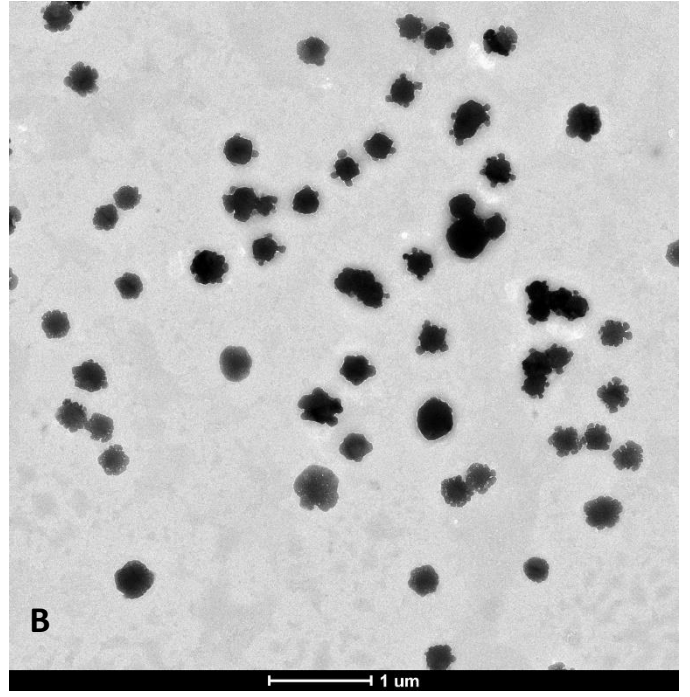
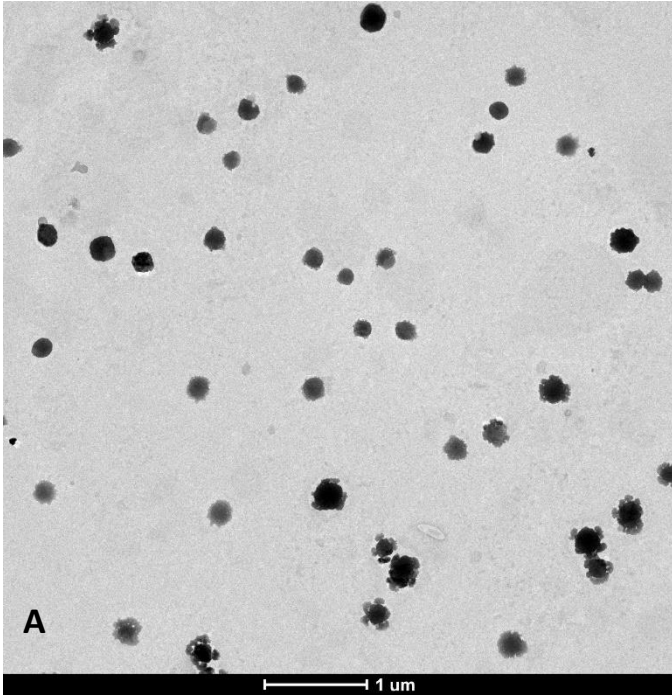


Fig 3 TEM images showing the size of cationic liposomes incorporated with lutein (CL-Lut) at low magnification in A-C and at high magnification in D.



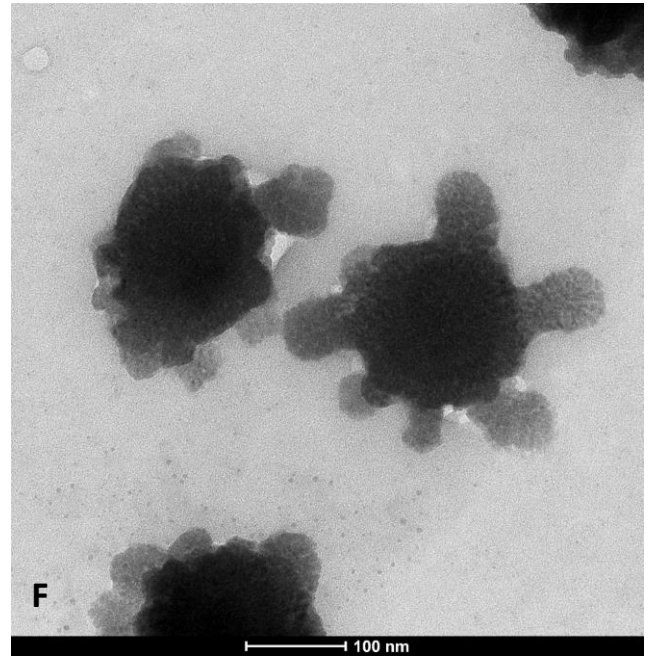
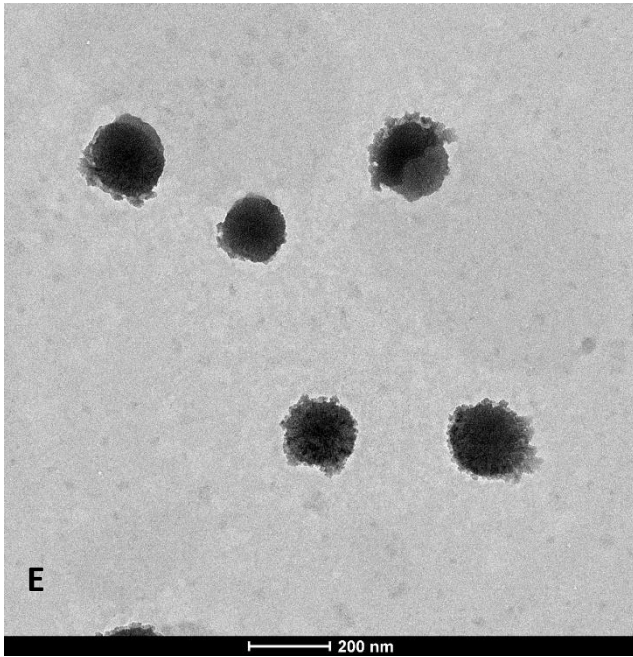


Fig 4 TEM images showing the size of cationic liposomes incorporated with beta-carotene (CL-Bc) at low magnification in A-E and at high magnification in F. Beta-carotene was observed at the boundary surface within the liposomal assembly surface, the molecule of beta-carotene tends to be buried in a lipid bilayer in random distribution without any preferred orientation.