Supporting Information

Multifunctional Nano-Biointerfaces: Cytocompatible Antimicrobial Nanocarriers from Stabilizer-free Cubosomes

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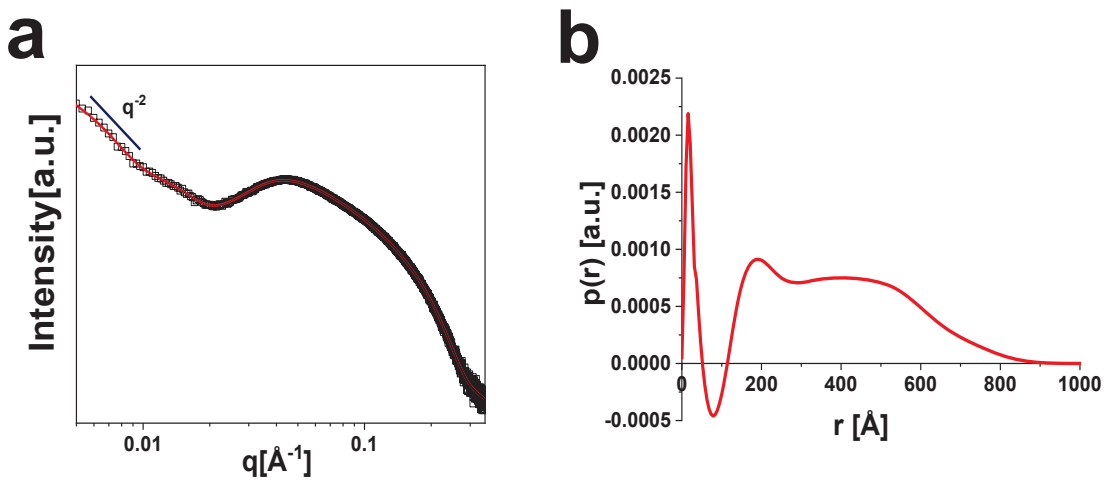

Figure S1. (a) Experimental SAXS patterns (symbols) and the fit calculated with the indirect Fourier transformation method (red curve) for the stabilizer-free GMO/LL-37 self-assemblies at a weight ratio of 50/50. (b) The corresponding pair distance distribution function, *p(r)*. Note that the maximum dimension in *p(r)* at *p(r)* = 0 does not reflect the overall vesicle dimensions. As the maximum dimensions of the vesicles are above the resolution limit of our SAXS set-up the *p(r)* was mathematically forced to 0 at 100 nm.

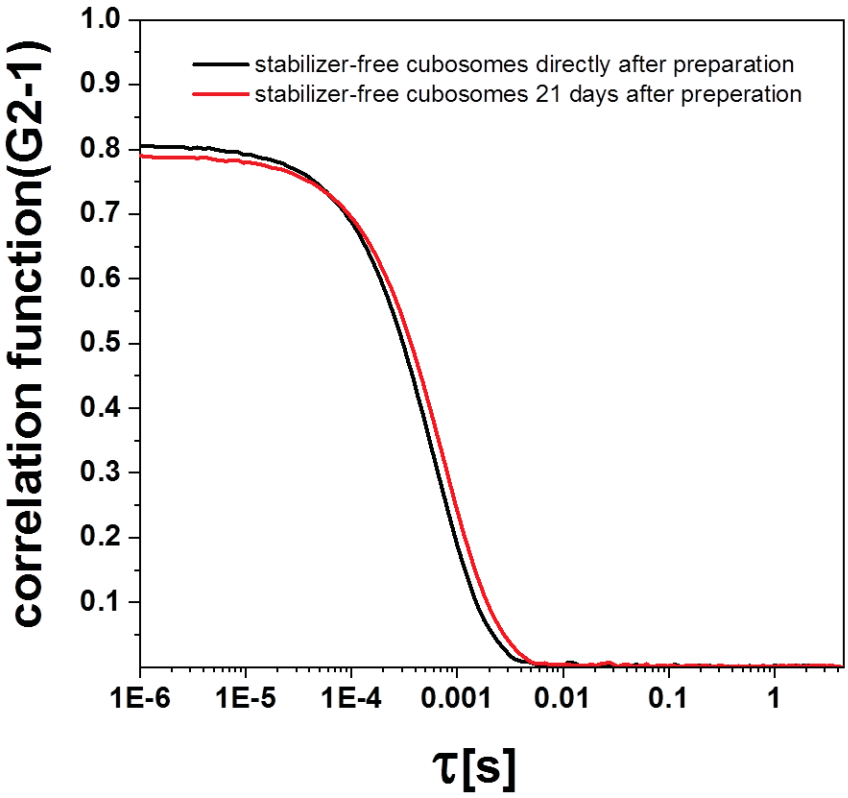

Figure **S2.** Dynamic light scattering (DLS) measurements of stabilizer-free GMO cubosomes directly and 21 days after preparation. The DLS correlation functions of the particles represent rather monomodal particles with only a single relaxation time. The shift of the decay in the correlation function to longer relaxation times results from the increase in the particle size after 21 days; the slight change in the slope is from the relatively small changes in PDI after 21 days.

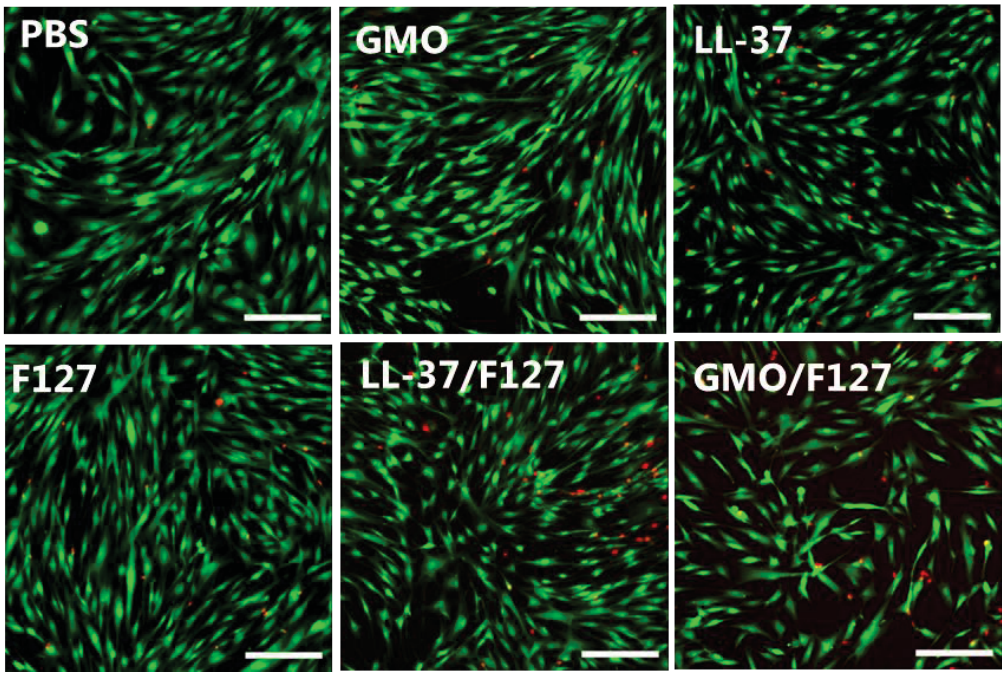

Figure S3. Cytotoxicity of HDF cells treated with the control groups. The Live/Dead assay shows live cells in green (calcein-AM staining) and dead cells in red (ethidium homodimer staining).

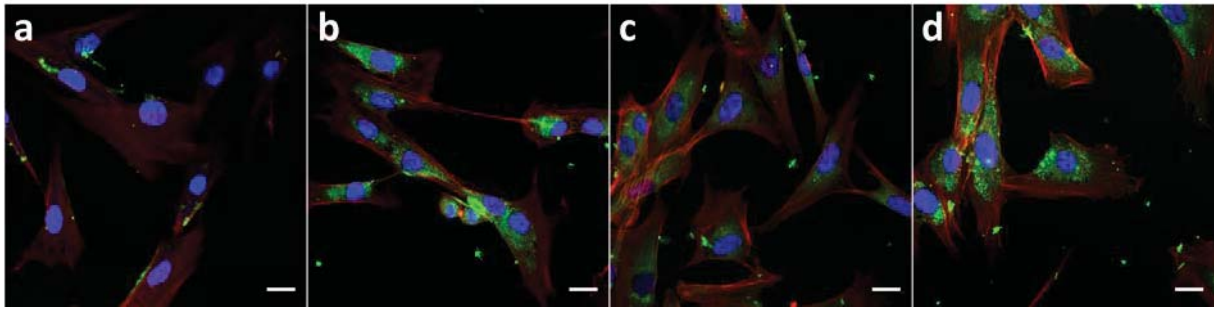

Figure S4. Uptake of FAM-labelled LL-37 from different formulations into HDF cells. The cells were treated with (a) LL-37, (b) GMO/LL-37, (c) LL-37/F127 and (d) GMO/LL-37/F127. The FAM-labelled LL-37 is shown in green, cell nuclei and actin filaments were stained with DAPI (blue) and phalloidin (red). Scale bar; 20 µm.

Table S1. Minimum inhibition concentration (MIC) for the five different bacteria strains in this study.

Strains	GMO/LL-37	GMO/LL-37/F127
Gram positive		
Staphylococcus aureus DSMZ 20231	No antibacterial activity (up to 250µg/ml LL-37)	No antibacterial activity (up to 250µg/ml of LL-37)
Staphylococcus epidermis ATCC 4961	No antibacterial activity (up to 250µg/ml LL-37)	No antibacterial activity (up to 250µg/ml of LL-37)
Bacillus Subtilis ATCC 6633 OD0.108	No antibacterial activity (up to 64µg/ml LL-37)	No antibacterial activity (up to 64µg/ml of LL-37)
Gram negative		
Escherichia coli DSMZ 30083	Antibacterial effect MIC ≤ 40 µg/ml	Antibacterial effect MIC ≤ 80 µg/ml
Pseudomonas aeruginosa CIP A22 DSMZ 25123	Antibacterial effect MIC ≤ 32 µg/ml	Antibacterial effect MIC ≤ 64 µg/ml