

Supplementary Information

Cholesterol Two-Dimensional Immiscible Domain in Lipid Bilayer Membrane Promotes Early Stage Calcification by Inducing Oriented Nucleation of Hydroxyapatite

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Figure S1. Supplementary SEM pictures of LBM1 (a, b), LBM2 (c, d), LBM3 (e, f) and LBM4 (g, h) after incubation for 1 day (left two columns) and 5days (right two columns). Two photographs in parallel were given for each sample, named 1 and 2 respectively. The scale bar is 100nm.

Figure S2. SEM (A), EDX mapping (B-C), TEM (E) and SEAD (F) of LBM4 after 12 hours of incubation, G is the abundance distribution of calcium (Ca), phosphorus (P) and oxygen (O) calculated from EDX mapping

Figure S3. Supplementary TEM pictures of LBM2 (A, B) after incubation for 5 hours and LBM3(C, D) after incubation for 12hours.

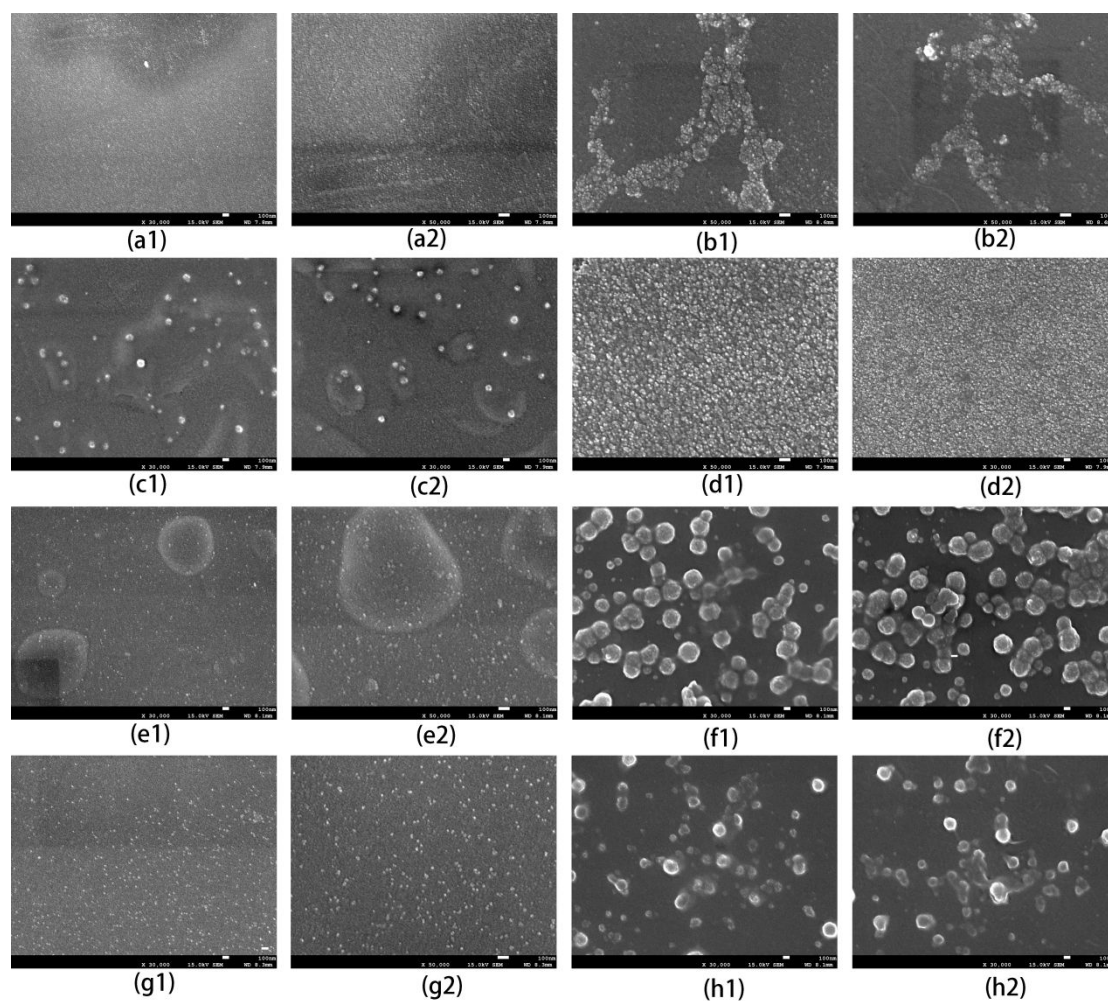


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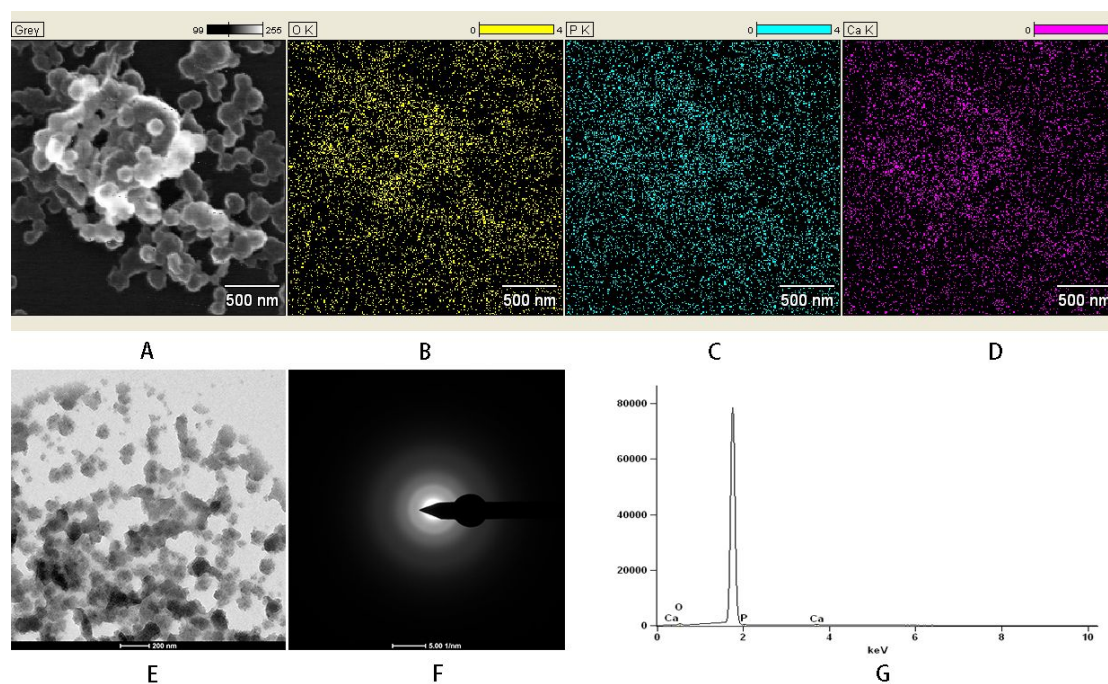


Figure S2. SEM (A), EDX mapping (B-C), TEM (E) and SEAD (F) of LBM4 after 12 hours of incubation, G is the abundance distribution of calcium (Ca), phosphorus (P) and oxygen (O) calculated from EDX mapping. From the above pictures, it was found that there was no oriented deposition of calcium phosphate in LBM4. The calcium phosphate was clustered and polycrystalline diffraction ring appeared. The calcium-phosphorus ratio was about 1.5, indicating that the sediments were hydroxyapatite. The increase of P might be due to the fact that phospholipids also contained phosphorus. The distribution of P is more uniform than Ca, which can be seen from figureS1 C.

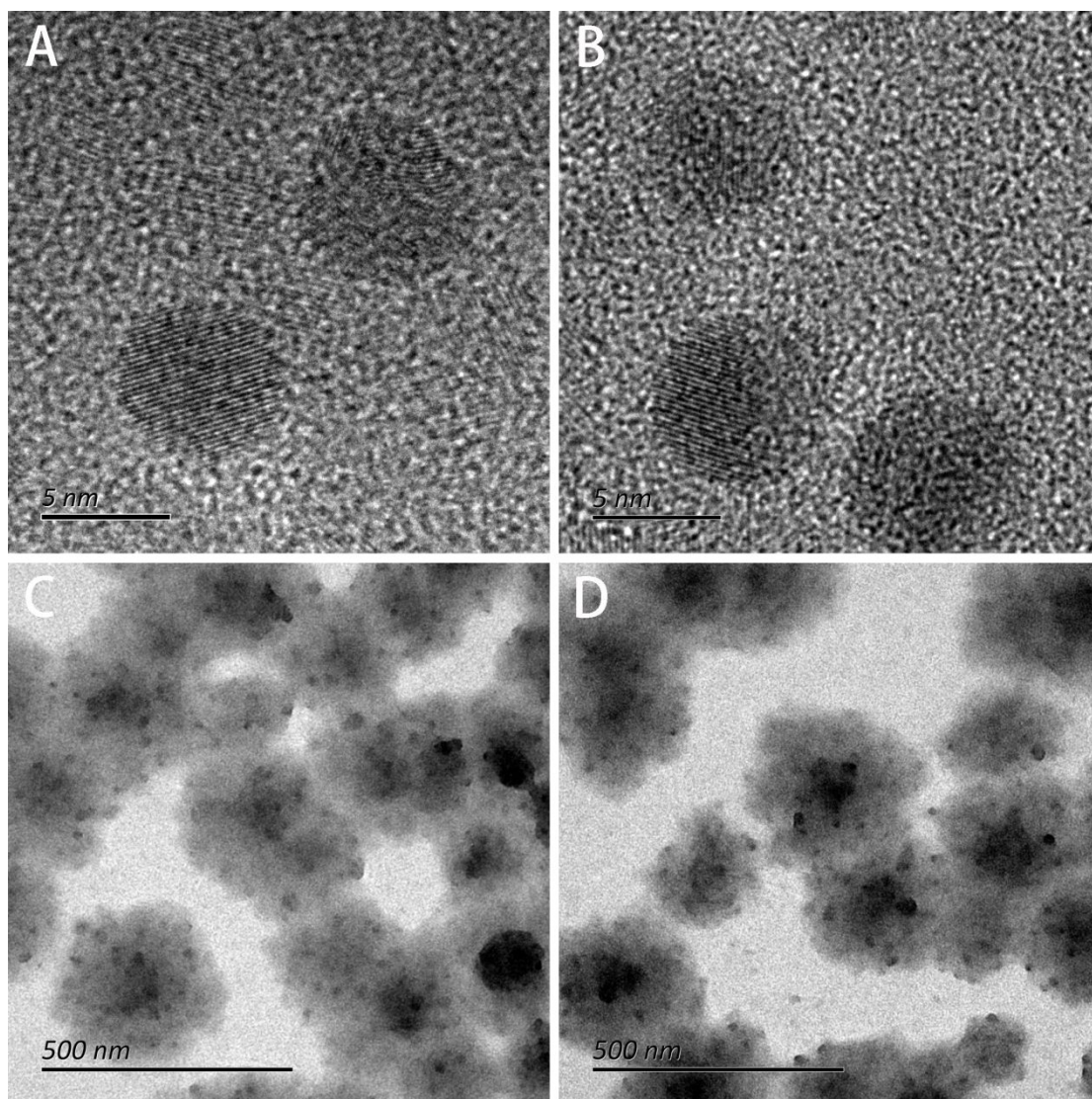


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