

Supplementary Information

Biosynthetic Calcium Doped Biosilica with Multiple Hemostatic Performances for Hemorrhage Control

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Supplementary figures (Fig. S1-S5)

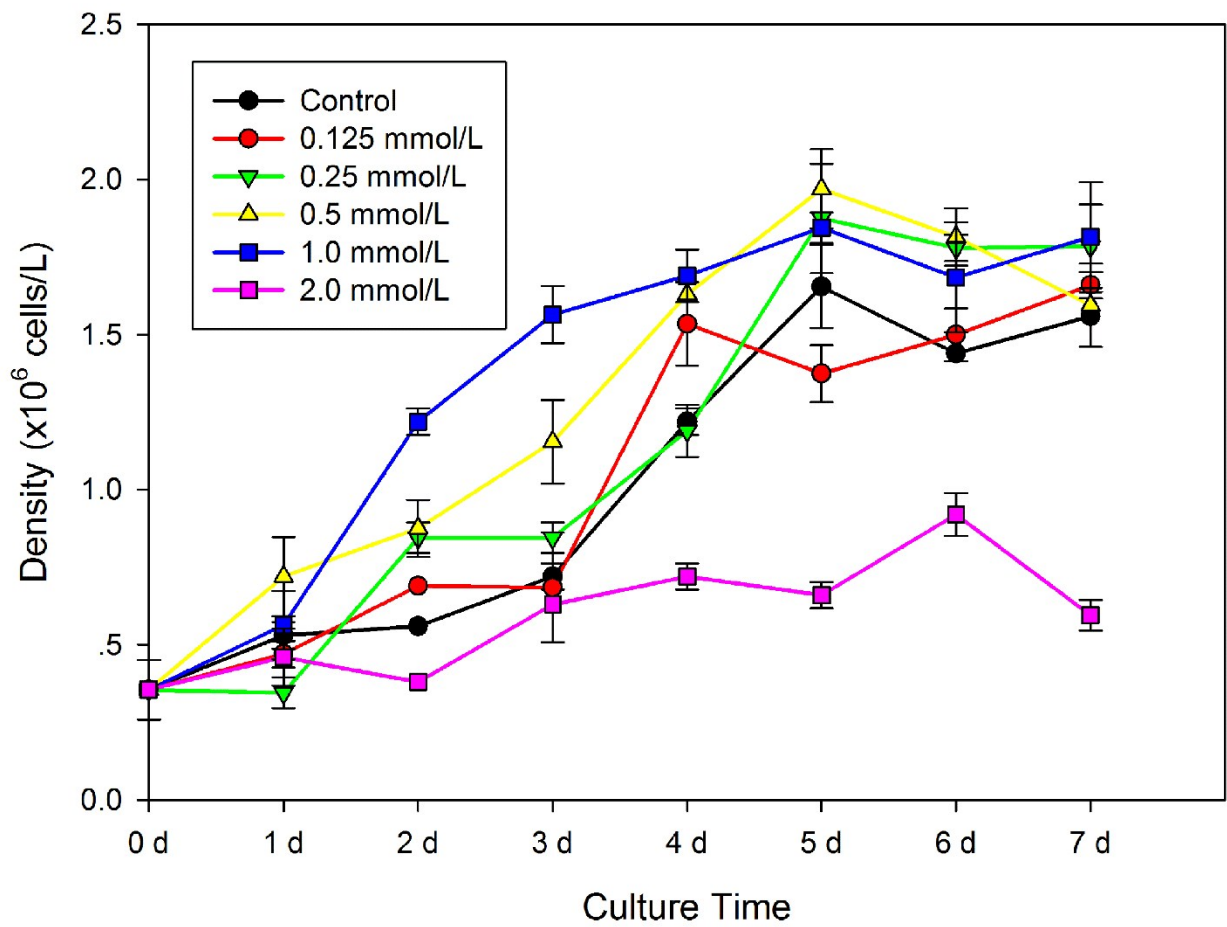


Fig. S1 Growth curve of *Coscinodiscus* sp. under different concentration of CaCl_2 solution. ($n = 3$)

Growth was not affected when calcium chloride concentration below 1 mmol/L, it was inhibited at 2 mmol/L.

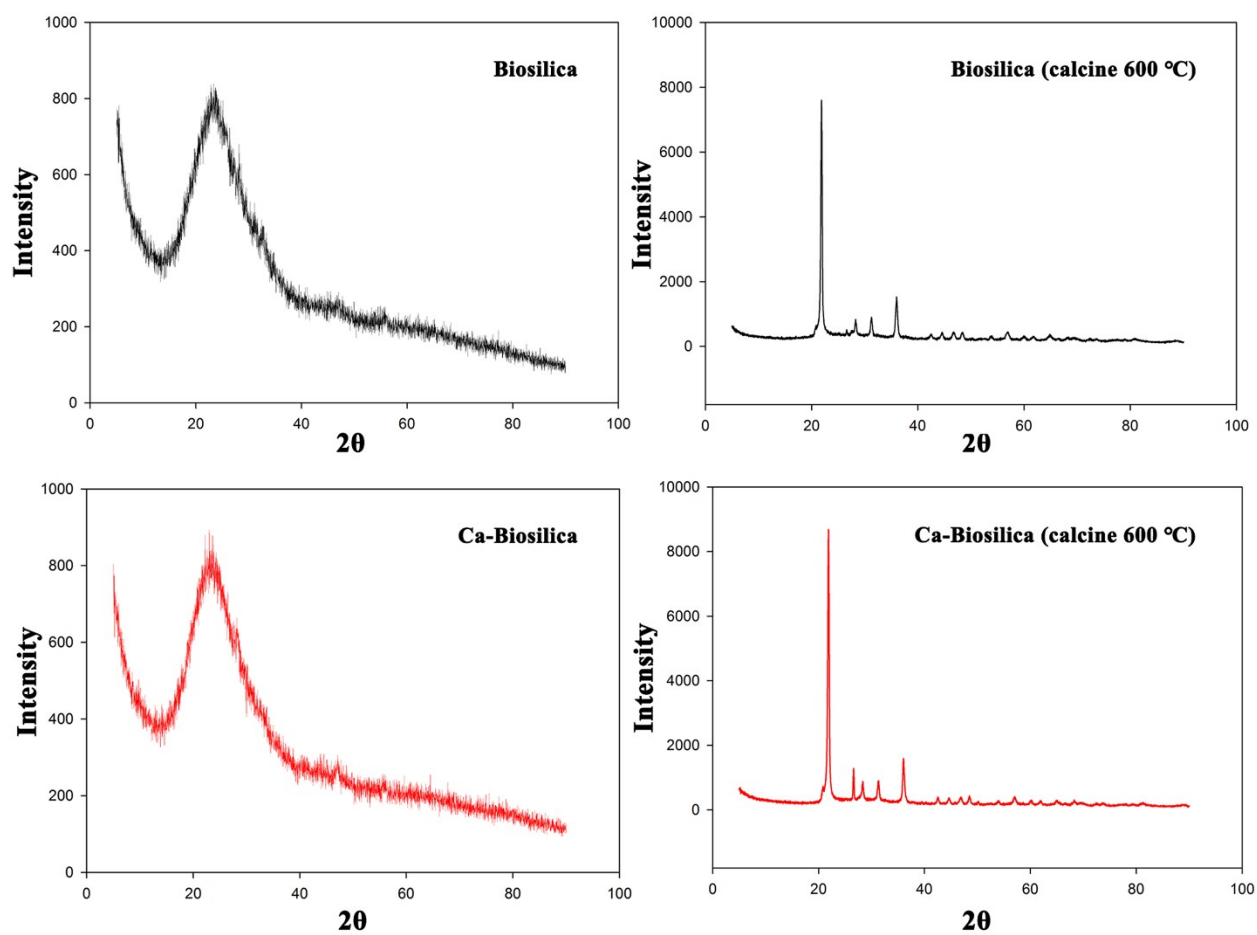


Fig. S2 X-ray powder diffraction spectra of Biosilica and Ca-biosilica before and after calcine treatment. The main component before calcination was amorphous silica, but showed crystalline structure after calcination.

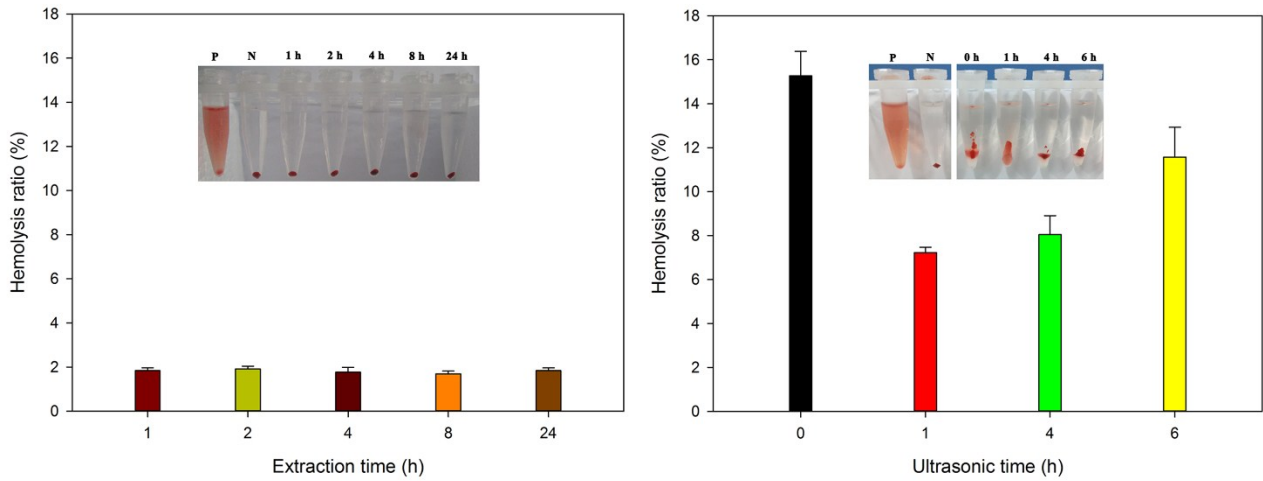


Fig. S3 Hemolysis ratio of Biosilica: (A) supernatant after different extraction time; (B) sample solution after different ultrasonic treatment time. ($n = 5$) Hemolysis ratio of extract liquid was less than 3%, but after bubbles that may be contained inside the Biosilica were removed by sonication, hemolysis ratio still above 7%. This demonstrated that the hemolysis ratio of Biosilica was irrelevant to soluble substance and pore construct.

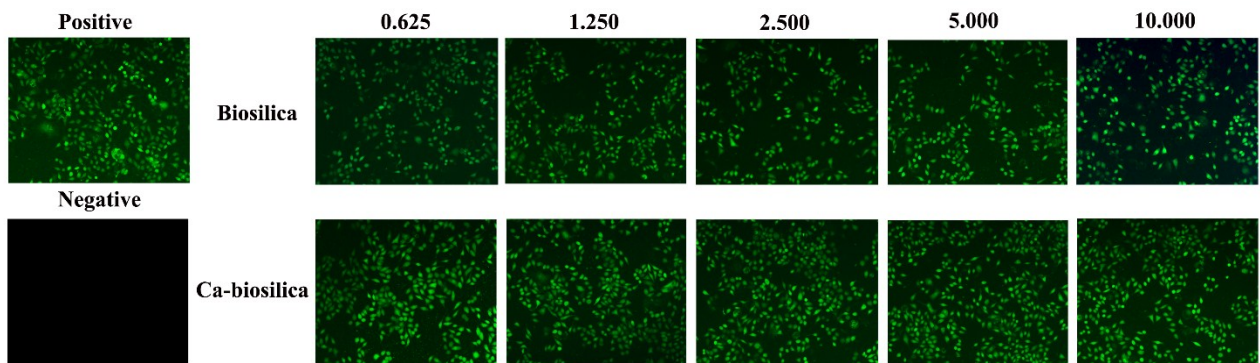


Fig. S4 CLSM images of MEFs treated with Biosilica and Ca-biosilica at different concentrations for 24 h incubation, the results were basically consistent with the results of cell viability.

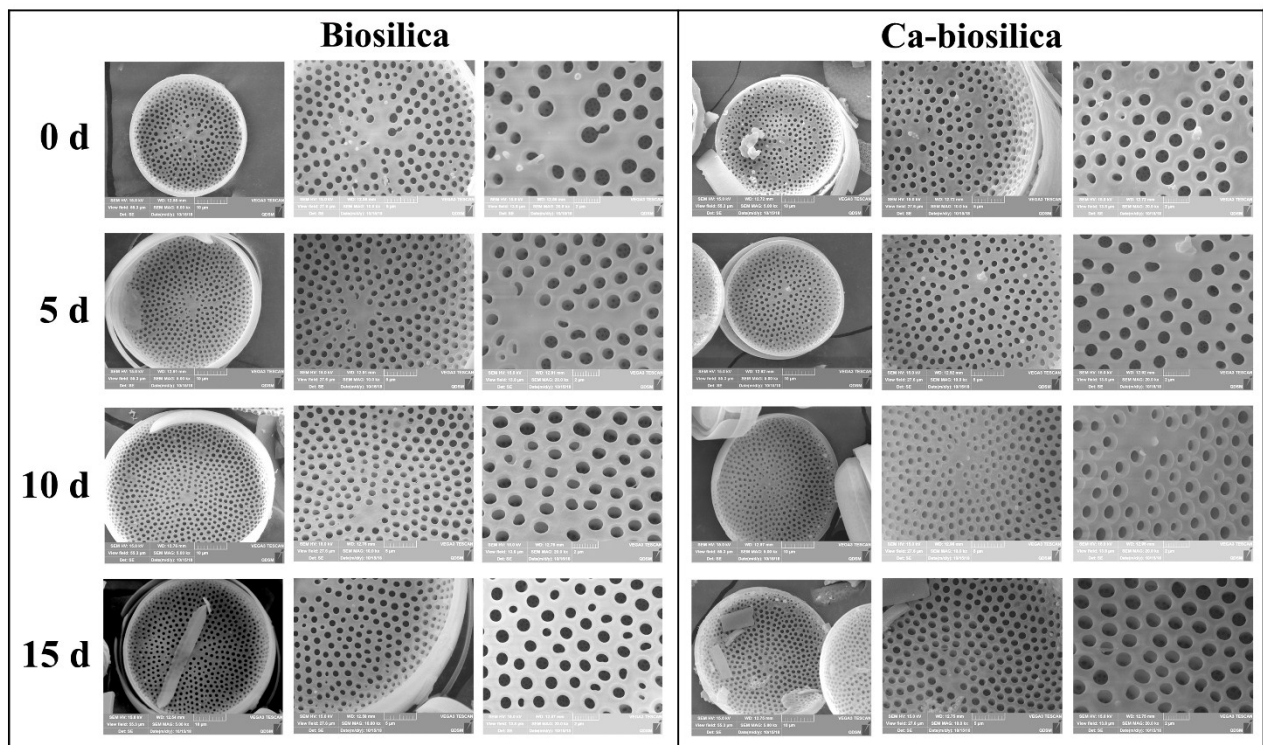


Fig. S5 *In vitro* degradation behavior in PBS at pH 7.4, SEM images of Biosilica and Ca-biosilica at 0 day, 5 days, 10 days and 15 days, respectively. Each experiment group was conducted at three different magnifications, no changes were observed on the microstructure of the Biosilica and Ca-biosilica, all the pores maintained their original structural integrity.