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## **Supporting Information**

**Figure S1.** The cross-section SEM images of RCS (a1, b1), RCS/G2 (a2, b2), RCS/G8 (a3, b3) and RCS/G15 (a4, b4), the bar for a1-a4:100 µm and the bar for b1-b4: 2µm.



**Figure S2.** The photographs of RCS (a-c) and RCS/G (d-f) sponges before and after immersed in PBS solution and the bar is 1cm.



**Figure S3.** The gelatin migration ratio accounting for RCS/G2 sponge after immersed in PBS (pH 7.4) at 37°C for different days.



Figure S4. The result of MTT test for RCS and RCS/G sponges.



**Figure S5.** The fluorescent images of RCS (a), RCS/G2 (b), RCS/G8(c) and RCS/G15 (d) sponges seeded with fibroblasts for 3 days.



**Figure S6.** The photograph of New Zealand rabbit with the weight 2.25 and 2.50 kg used in animal test (a). Four skin wounds ( $20mm \times 20mm$ ) were made on dorsum of each rabbit and arranged symmetrically (b). The wounds for rabbits were treated with RCS, RCS/G2 and bFGF-RCS/G2 sponges with gauze as control (c), and then fixed with a polyurethane film coated a binder material polyacrylic acid by surgical suture (d). The bar is 2cm.