Electronic Supplementary Material (ESI) for Journal of Materials Chemistry

† Electronic Supplementary Information (ESI) available: [details of any supplementary information available should be included here]. See DOI: 10.1039/b000000x/

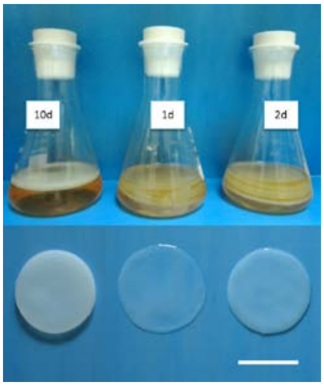

Fig. S1 The picture shows the difference between static fermentation of BC film and improved multilayer fermentation of BC film: *G. xylinus* was fermented for 10 days. Left: static fermentation of BC film (normal); middle: shake every day, multilayer fermentation of thin BC film and right: shake every 2 days, multilayer fermentation of thick BC film. The scale bar equals 5 cm.

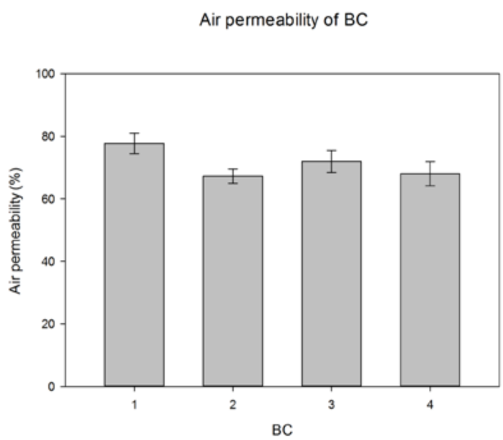

Fig. S2 The air permeability of different BC films was investigated for 24 hours at room temperature. The thicknesses were measured after frozen drying. BC1 = 0.067 mm, BC2 = 0.315 mm, BC3 = 0.058 mm, BC4 = 0.739 mm.

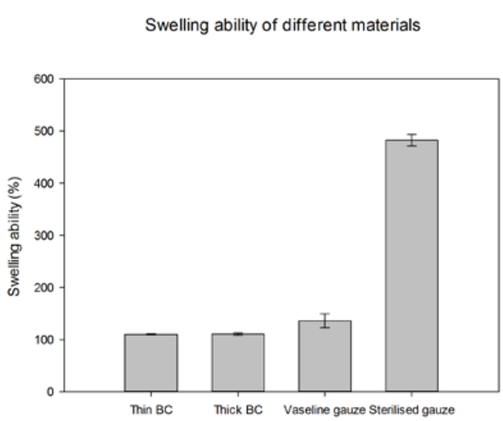

Fig. S3 The swelling ability of different materials was investigated in phosphate buffered saline for 24 hours at room temperature.

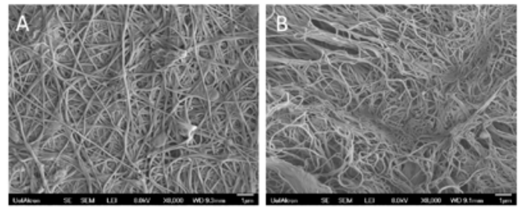

Fig. S4 SEM microphotographs of the thick BC film: (A) before the purification of NaOH; (B) after the purification of NaOH. The entire scale bars equal 1 µm.

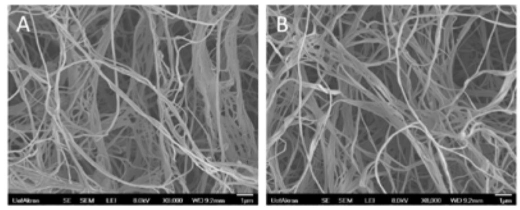

Fig. S5 SEM microphotographs of (A) the thick BC film and (B) the BC film (normal). Both the porous opposite sides were formed in the culture medium for 2 days (A) and 10 days (B). The scale bars equal 1 µm.

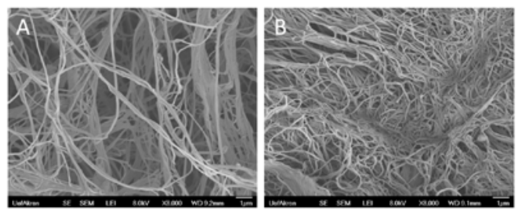

Fig. S6 SEM microphotographs of the thick BC film: (A) porous opposite side that was formed in the culture medium; (B) denser surface side that was formed at the interface between air and culture medium. The scale bars equal 1µm.

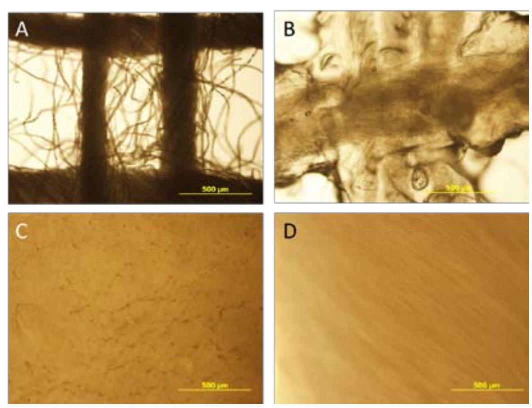

Fig. S7 Microphotographs of gauzes and BC films were observed by an Olympus polarizing microscope (BH–2, Olympus Inc., Japan): (A) the gauze shows a smoother structure than the Vaseline gauze; (B) the Vaseline gauze shows a larger fleece than the gauze; (C) compared to the gauzes, the thin BC film shows a compact surface; (D) the thin BC film shows a smooth and linear surface. The entire scale bars equal 500 µm.

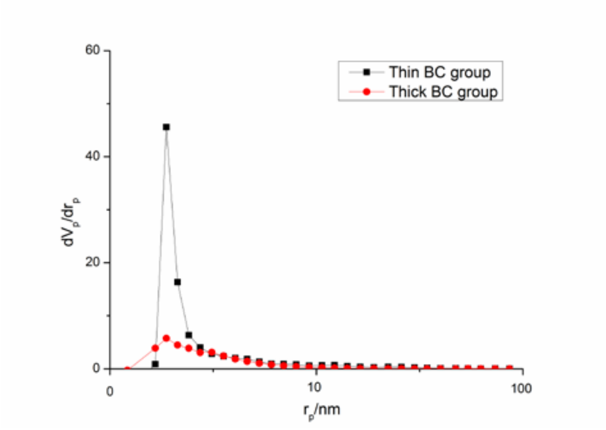

Fig. S8 Pore-size distribution for two kinds of BC from BJH analysis based on pore area.

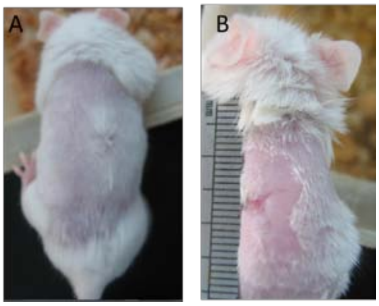

Fig. S9 (A) the thick BC group on day 17 showed bushy hair around the wound area; (B) the mouse skin group on day 17 showed sparse hair around the wound area.

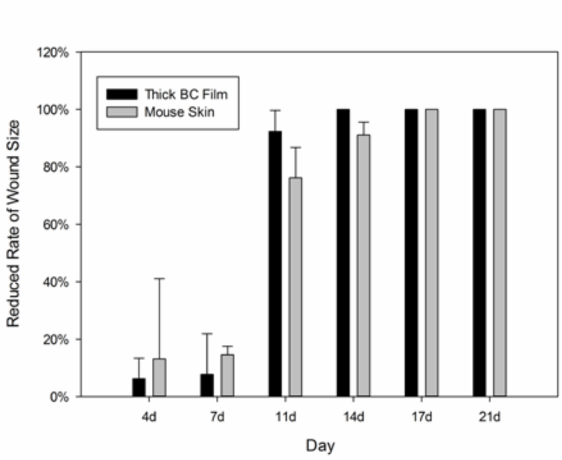

Fig. S10 The reduction rates of the thick BC group and the mouse skin group.

Table S1 Surface area $a_{s,BET}$, relative pressure p/p_0 and total pore volume (TPV) of BC

Samples	$a_{s,BET}$ (m^2/g)	p/p_0	TPV(N_2) (cm^3/g)	C	Average pore diameter (nm)
Thin BC	5.0068	0.985	0.030515	178.52	24.379
Thick BC	0.64654	0.990	0.011642	236	72.027

Table S2 The animal model was full-thickness skin injury in BALB/c mouse. Using one animal model, seven groups were investigated in the mouse surgery. Results are shown here.

Materials	Category	Immunorejection
Sterilised gauze	Commodity materials group	No active antigen, no immunorejection
Vaseline gauze	Commodity materials group	No active antigen, no immunorejection
Thin BC film	Experimental group	No active antigen, no immunorejection
Thick BC film	Experimental group	No active antigen, no immunorejection
Pig skin	Xeno–transplant group	The xeno–antigen caused immunorejection
Rat skin	Xeno–transplant group	The xeno–antigen caused immunorejection
Mouse skin	Allo–transplant group	The allo–antigen caused few immunorejection