

Electronic supplementary information for “Preparation and characterisation of nanofibrous cellulose plate as a new solid support for microbial culture” by Shigeru Deguchi, Mikiko Tsudome, Yihong Shen, Satoshi Konishi, Kaoru Tsujii, Susumu Ito and Koki Horikoshi

Culture of mammalian cells

We also studied adhesion of a mammalian cell to the surface of the nanofibrous cellulose plate. Mouse fibroblast 3T3L1 cells were preincubated in Dulbecco's Modified Eagle's Medium (DMEM) supplemented with 10 vol % fetal bovine serum and 100 U/mL antibiotic antimycotic (ABAM). Small pieces of the nanofibrous cellulose plate were immersed in the culture (10^6 cells/mL), and the culture was incubated under 5 vol % CO₂ atmosphere at 37 °C for 4 days. The cellulose pieces were then taken out, and examined by an optical microscope for cell adhesion.

No significant adhesion or extension of the cells on the plate was observed (Fig. S1). This result agrees with the previous report that various mammalian cell lines show poor adhesion to the surface of the bacterial cellulose membrane.¹ However, the adhesion was promoted significantly by introducing cationic trimethyl ammonium β -hydroxy propyl groups and adsorbing collagen to the surface of the bacterial cellulose.¹ As the surface chemical properties of the nanofibrous cellulose plate should be the same as those of the bacterial cellulose membrane, the same chemical modification could be applied to improve the cell adhesion.



Fig. S1 A phase contrast optical micrograph showing a small piece of the nanofibrous cellulose plate coincubated with mouse fibroblast cells in DMEM for 4 days. No significant adhesion or extension of the cells on nanofibrous cellulose is seen. Scale bar represents 100 μ m.

References

1. K. Watanabe, Y. Eto, S. Takano, S. Nakamori, H. Shibai and S. Yamanaka, *Cytotechnol.*, 1993, **13**, 107-114.