№9：Mouse iPS cell behavior on sandblasted polystyrene with varying particle sizes

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Purpose：The purpose of this study was to investigate the effect of varying topographies on proliferation and osteogenic differentiation of miPS cells.
Materials and methods：Polystyrene substrates were sandblasted by 25μm, 50μm and 150μm ϕ Aluminum oxide particles. Non sand blasted substrates were used as controls. Embryoid bodies formed from miPS cells were seeded on the substrates using DMEM with 10% FBS and knock Out serum, and then using α-MEM with 10% FBS. Cell proliferation, SEM, Cyto-fluorescence (CF), quantitative RT-PCR (qRT-PCR) analysis using primers of *runx-2* and *Collagen type I* were performed.
Results：Control group resulted in the highest cell proliferation. CF and SEM showed that roughness guided the cells into an elongated form. qRT-PCR revealed higher *runx-2* expression at day 16 on 25μm blasted surface. *Collagen type I* expression at day 8 was the highest on the 50μm surface.
Conclusions：Surface topography had an effect on proliferation, cell shape and early osteogenic gene expression of miPS cells.

№10：Mouse iPS cells differentiation into odontoblast-like cells in a presence of dentin

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Purpose：The purpose of this study was to investigate the effect of dentin property on the differentiation of mouse iPS cells into odontoblast-like cells.
Materials and methods：Dentin discs (17× 6 mm) were prepared from bovine incisor and then treated by 17% EDTA for 10min followed by ultrasonication. Embryoid bodies (EB) formed from mouse iPS cells were transfered to DMEM containing retinoic acid and BMP 4. EB were then seeded on the dentin discs for experimental group or collagen type 1 -treated cell discs for control group. The evaluation has been made on outgrowth cells on day 11. The quantitative RT-PCR analysis using primers of *Sox 10, bsp, ocn, dspp* and *dmp 1* was performed.
Results：*Sox 10, ocn, dspp* and *dmp 1* were expressed higher in experimental group on day 11. However, *bsp* expression was higher in control group than in experimental group.
Conclusion：This study demonstrated that 17% EDTA - treated dentin has a positive effect on mouse iPS cells differentiation into odontoblast-like cells. It showed more odontoblast - related markers.