Enhanced differentiation of human pre-osteoblasts on electrospun blend fiber mats of polydioxanone and anionic sulfated polysaccharides

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9 pages

8 Figures

Supporting Information

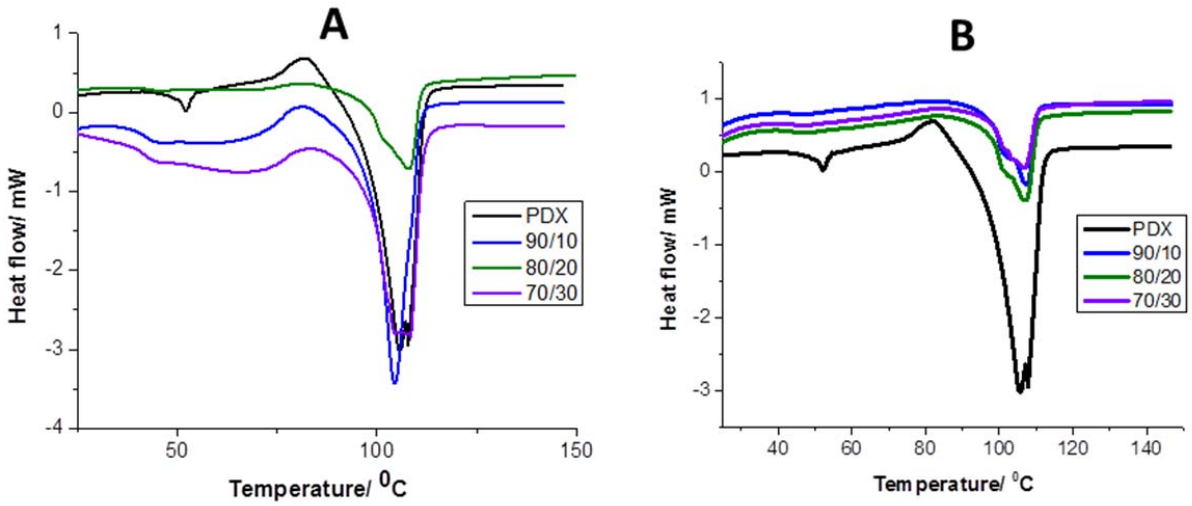

Figure S1. DSC curves of (A) PDX/KCG and (B) PDX/FUC blend fibers.

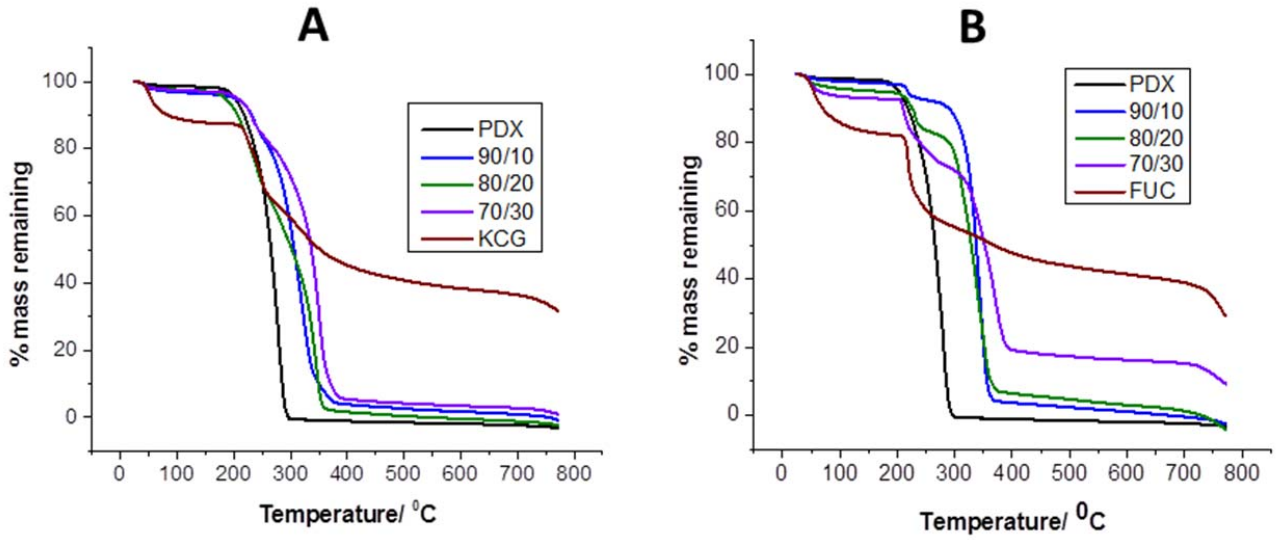

Figure S2. TGA curves of (A) PDX/KCG and (B) PDX/FUC blend fibers.

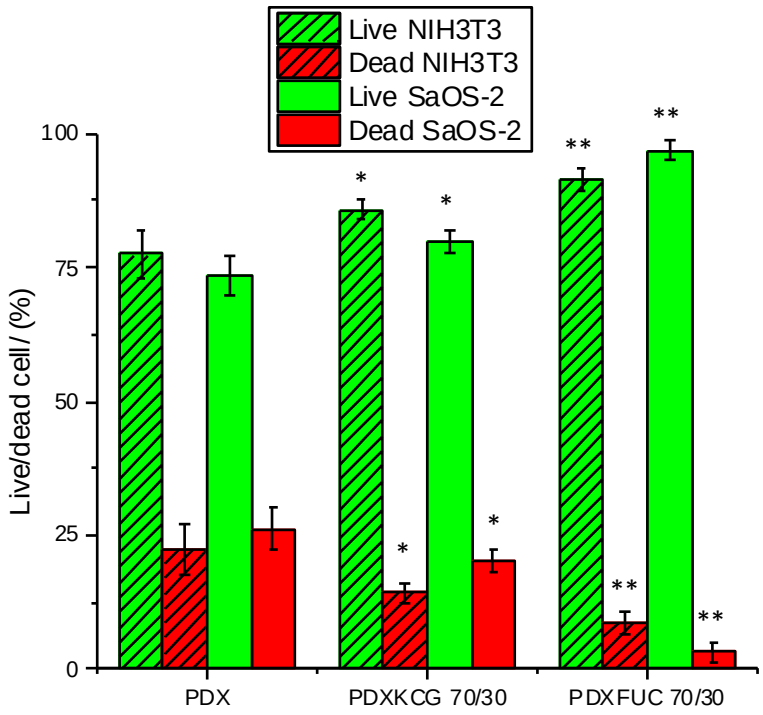

Figure S3. Graph depicting the fraction of live v/s dead NIH3T3 and SaOS-2 cells on PDX, PDX/KCG 70/30 and PDX/FUC 70/30 scaffolds after 24 hours. All cell viability values from the blend fibers were compared with pure PDX and were found to be significantly higher than pure PDX: * $p < 0.05$; ** $p < 0.0001$ and (ns) not significant.

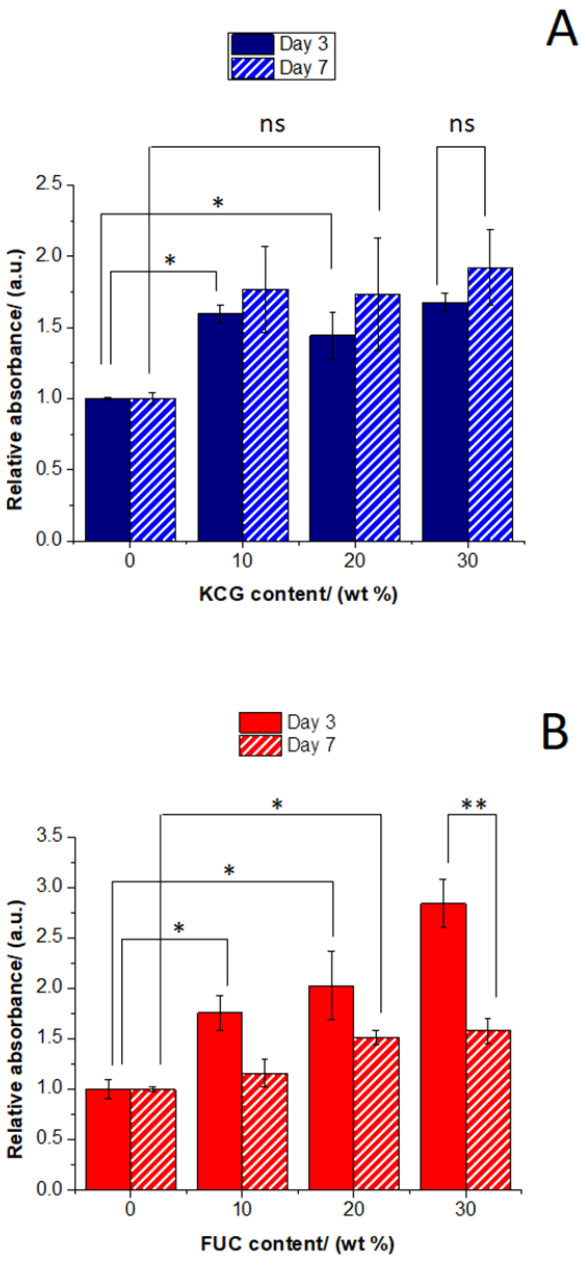

Figure S4. MTT assay results obtained in experiments of NIH3T3 cells on (A) PDX/KCG and (B) PDX/FUC fibers on days 3 and 7. All measured absorbance from the blend fibers were compared with pure PDX. Statistical analysis was conducted using a two-way ANOVA. Data from PDX/KCG and PDX/FUC mats were analyzed separately. Blend composition and time were considered as the two varying factors. * $p < 0.05$; ** $p < 0.0001$ and (ns) not significant.

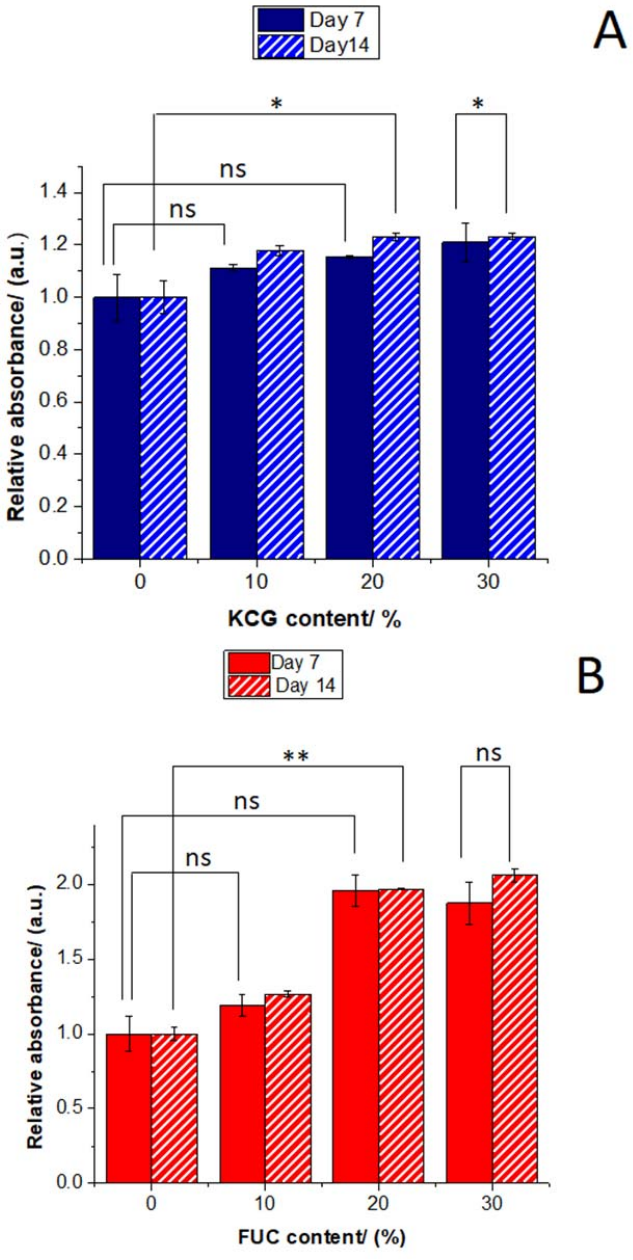

Figure S5. Absorbance of Alizarin-Red S staining of (A) PDX/KCG, (B) PDX/FUC after 14 days in differentiation experiments of SaOS-2 cells. All measured absorbance from the blend fibers were compared with the corresponding pure polyester. Statistical analysis was conducted

using a two-way ANOVA. Data from PDX/KCG and PDX/FUC mats were analyzed separately. Blend composition and time were considered as the two varying factors. * $p < 0.05$; ** $p < 0.0001$ and (ns) not significant..

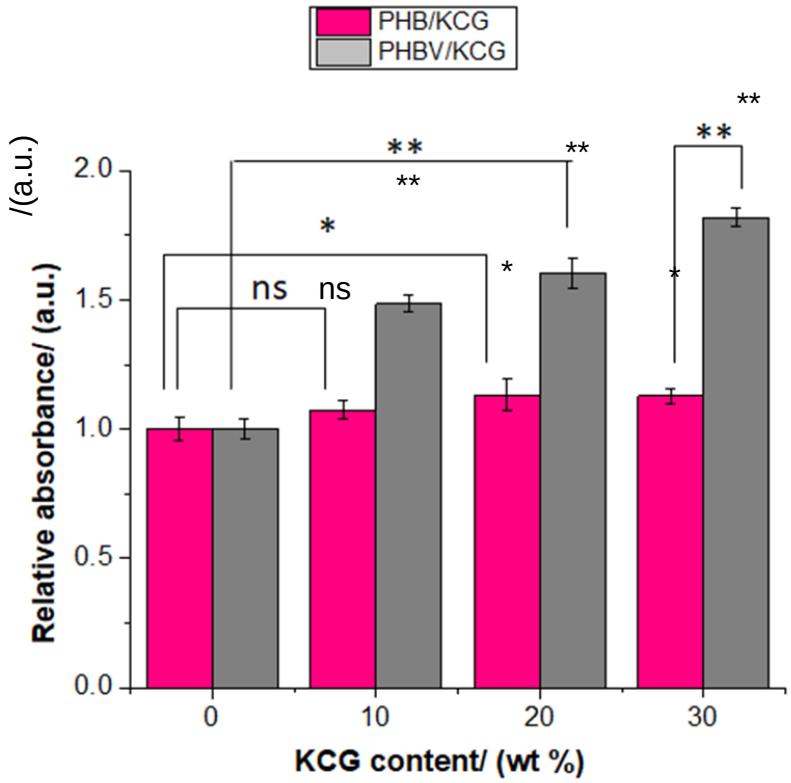

Figure S6. MTT assay results obtained in experiments of NIH3T3 cells on PHB/KCG and PHBV/KCG fibers on day 7 recalculated from reference 18. The absorbance of PHB and PHBV was set to 1 and the absorbance values of the corresponding blends were expressed relative to that of the homopolymer. All measured absorbance from the blend fibers were compared with the homopolymer. Statistical analysis was conducted using a two-way ANOVA. Blend composition and blend system were considered as the two varying factors. * $p < 0.05$; ** $p < 0.0001$ and (ns) not significant.

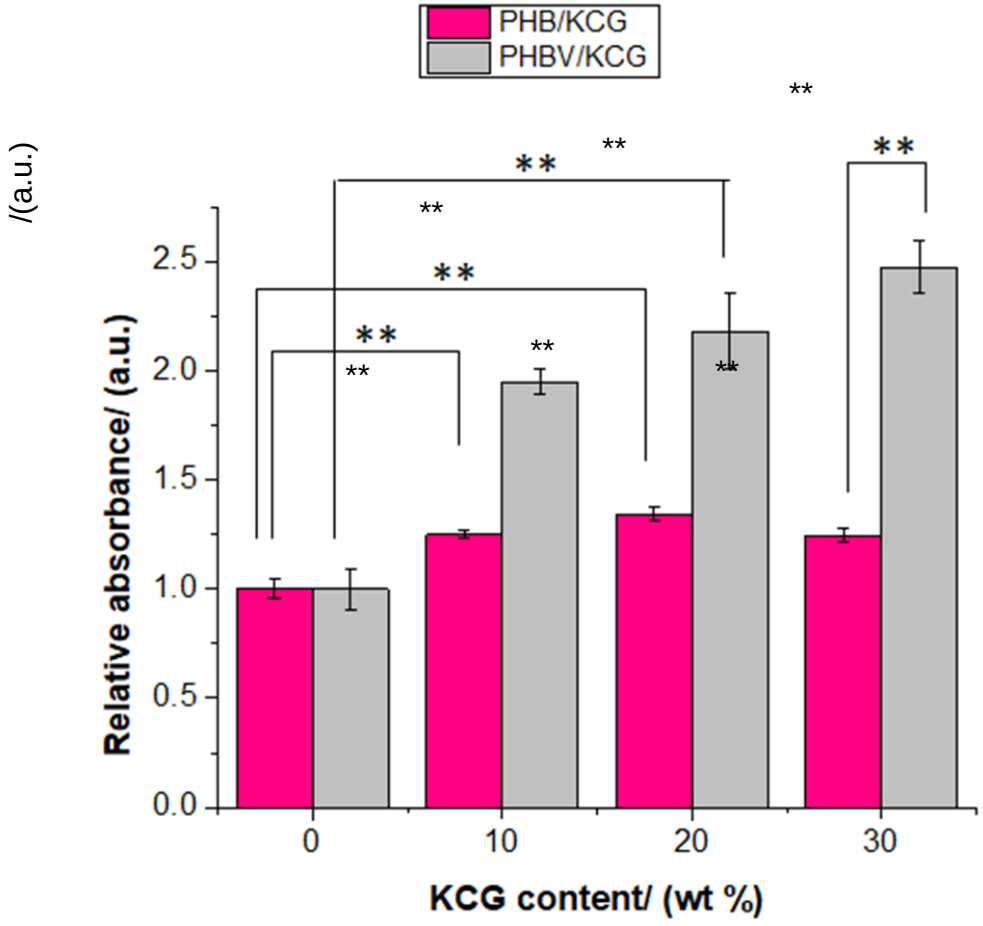

Figure S7. Relative absorbance values of Alizarin-Red S staining of PHB/KCG, and PHBV/KCG fibers on day 14 in differentiation experiments of SaOS-2 cells (recalculated from reference 18). The absorbance of the homopolymer was set to 1 and the absorbance values of the corresponding blends were expressed relative to that of the homopolymer. All measured

absorbance from the blend fibers were compared with the pure homopolymer. Statistical analysis was conducted using a two-way ANOVA. Blend composition and blend system were considered as the two varying factors. * $p < 0.05$; ** $p < 0.0001$ and (ns) not significant.

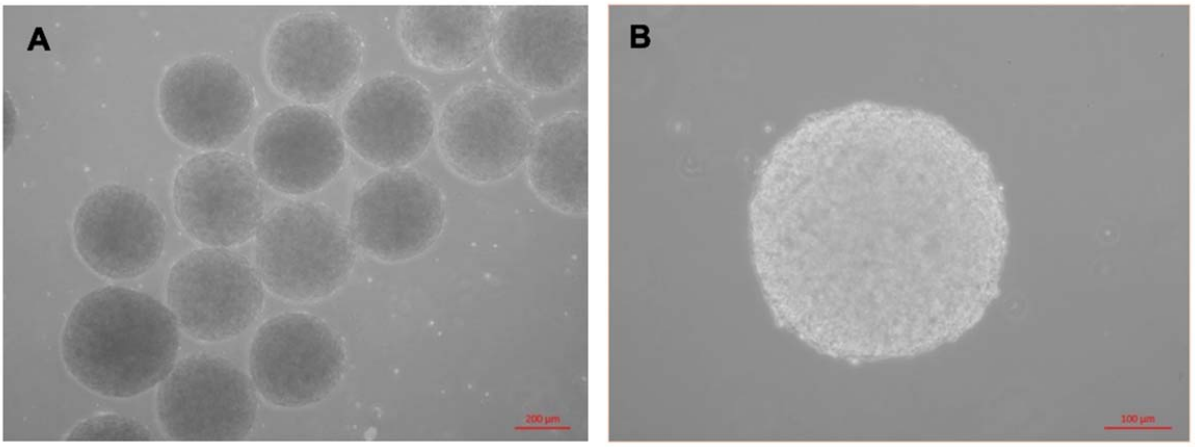

Figure S8. Optical microscopy images of (A) flushed EBs at low magnification and (B) single EB at higher magnification.