

Figure S1. Effect of UV treatment on cell morphology and function. Primary human hepatocytes cultured on 10 J/cm<sup>2</sup> UV-treated MDS atelocollagen exhibited an elongated shape and a diminished function, in line with the findings of cells grown on conventional 0.04 mg/cm<sup>2</sup> atelocollagen. (A-E) LIVE/DEAD staining of day 1 culture of PHHs. MDS atelocollagen (2 mg/cm<sup>2</sup>) was exposed to UV as follows: (A) untreated, (B) 0.1 J/cm<sup>2</sup>, (C) 1 J/cm<sup>2</sup>, and (D) 10 J/cm<sup>2</sup>. (E) Conventional 0.04 mg/cm<sup>2</sup> atelocollagen was treated with 1 J/cm<sup>2</sup> UV as a control. PHHs (1x10<sup>5</sup> cells/well) were cultured on collagen for 1 day. Live cells were stained with calcein AM (green), and dead cells were stained with ethidium homodimer (red). Nuclei were stained with Hoechst (blue). Scale bar: 100  $\mu$ m. (F) RT-qPCR analysis of day 3 PHHs. PHHs cultured on 2 mg/cm<sup>2</sup> MDS atelocollagen exposed to 10 J/cm<sup>2</sup> UV radiation exhibited decreased hepatic gene expression, in line with that observed in cells grown on 0.04 mg/cm<sup>2</sup> conventional collagen (control). N=4. PHHs, primary human hepatocytes; MDS, micro-dimpled surface; RT-qPCR, reverse transcription-quantitative polymerase chain reaction; UV, ultraviolet.

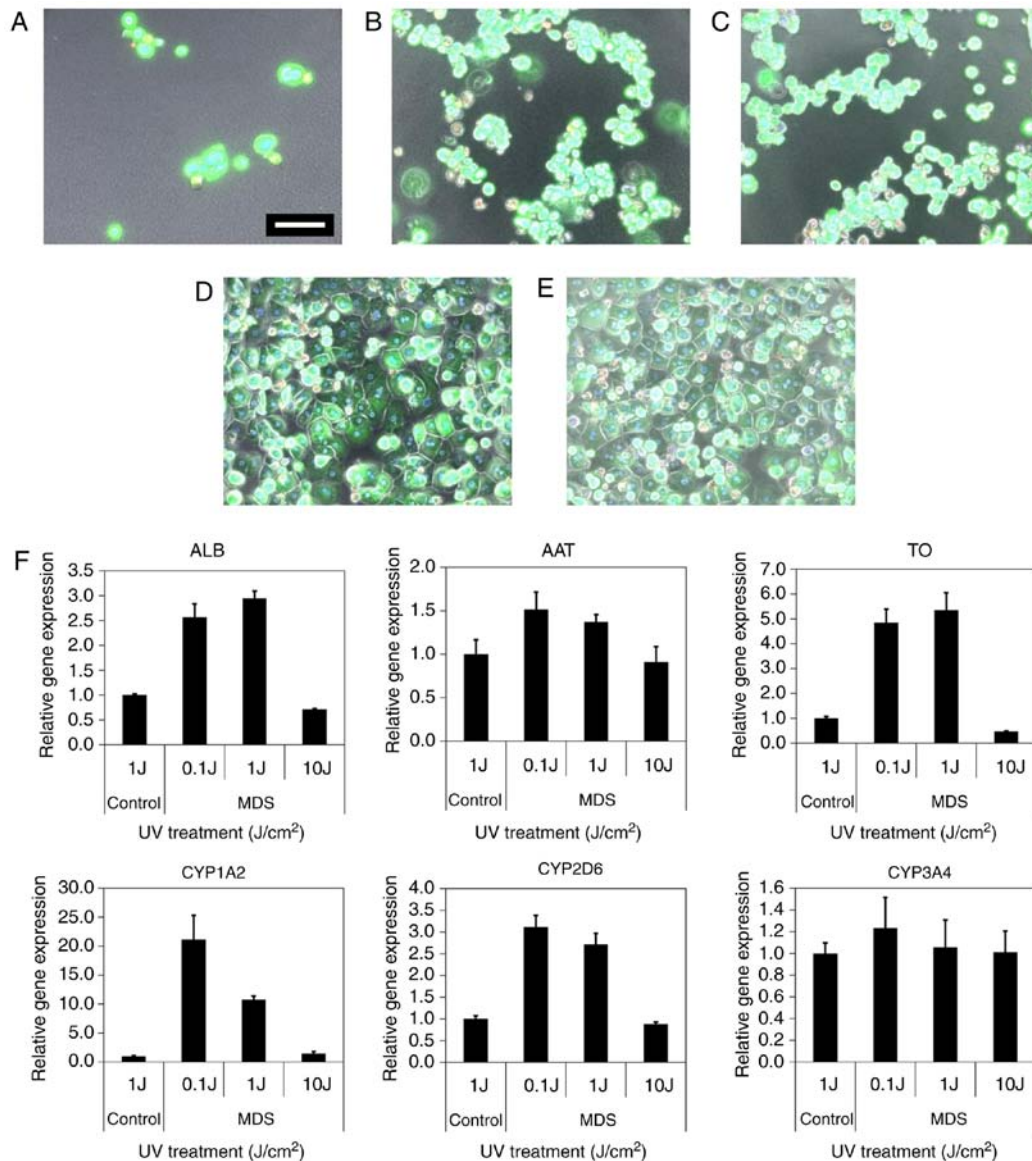


Table SI. Primers for quantitative RT-qPCR.

Gene name	Forward	Reverse
ALB	5'-CTTCCTGGGCATGTTTTTGT-3'	5'-TGGCATAGCATTTCATGAGGA-3'
AAT	5'-AGACCCTTTGAAGTCAAGCGACC-3'	5'-CCATTGCTGAAGACCTTAGTGATGC-3'
TO	5'-GGCAGCGAAGAAGACAAATC-3'	5'-TCGAACAGAATCCAACTCCC-3'
CYP1A2	5'-TGTTCAAGCACAGCAAGAAGG-3'	5'-TGCTCCAAAGATGTCATTGAC-3'
CYP2D6	5'-ATTCATGAGGTGCAGCGCTTTGGG-3'	5'-TCAGCACCGATGACAGGTTGGTGA-3'
CYP2C9	5'-GGACAGAGACGACAAGCACA-3'	5'-CATCTGTGTAGGGCATGTGG-3'
CYP2C19	5'-ACTTGGAGCTGGGACAGAGA-3'	5'-CATCTGTGTAGGGCATGTGG-3'
CYP3A4	5'-TGTGCCTGAGAACACCAGAG-3'	5'-GTGGTGGAATAGTCCCGTG-3'
GSTA4	5'-GGATGGTAACCACCTGCTG-3'	5'-TGCCAAAGAGATTGTGCTT-3'
UGT1A1	5'-TGACGCCTCGTTGTACATCAG-3'	5'-CCTCCCTTTGGAATGGCAC-3'
MRP2	5'-TGAGCAAGTTTGAAACGCACAT-3'	5'-AGCTCTTCTCCTGCCGTCTCT-3'
AhR	5'-TGTGCCGAGTCCCATATCCG-3'	5'-GCAGGCGTGCATTAGACTGG-3'
CAR	5'-TGATCAGCTGCAAGAGGAGA-3'	5'-AGGCCTAGCAACTTCGCATA-3'
HNF4 $\alpha$	5'-CCACGGGCAAACACTACGG-3'	5'-GGCAGGCTGCTGTCCTCAT-3'
PXR	5'-CCAGGACATACACCCTTTG-3'	5'-CTACCTGTGATGCCGAACAA-3'
ITG $\alpha$ 1	5'-CCAAACATGTCTTCCACCG-3'	5'-CTGCTGCTGGCTCCTCAC-3'
ITG $\alpha$ 2	5'-TCACTTGAAGGACCGGAAAA-3'	5'-CTGGTGTTAGCGCTCAGTCA-3'
ITG $\alpha$ 3	5'-GGTTGGTGTAGCCATCGG-3'	5'-CCTCTTCGGCTACTCGGTC-3'
ITG $\alpha$ 5	5'-AGGTAGACAGCACCACCCTG-3'	5'-CTCAGTGGAGTTTTACCGGC-3'
ITG $\alpha$ 6	5'-GTTGGCTCTCTGCAGTGGAA-3'	5'-CCTCTTCGGCTTCTCGCT-3'
ITG $\alpha$ V	5'-TCCAAACCACTGATGGGACT-3'	5'-GTGACTGGTCTTCTACCCGC-3'
ITG $\beta$ 1	5'-CCTACTTCTGCACGATGTGATG-3'	5'-CCTTTGCTACGGTTGGTTACATT-3'
ITG $\beta$ 3	5'-GTGACCTGAAGGAGAATCTGC-3'	5'-CCGGAGTGCAATCCTCTGG-3'
DDR1	5'-ATGGAGCAACCACAGCTTCTC-3'	5'-CTCAGCCGGTCAAACCTCAAAC-3'
GAPDH	5'-GCACCGTCAAGGCTGAGAAC-3'	5'-ATGGTGGTGAAGACGCCAGT-3'