Supplementary Figures

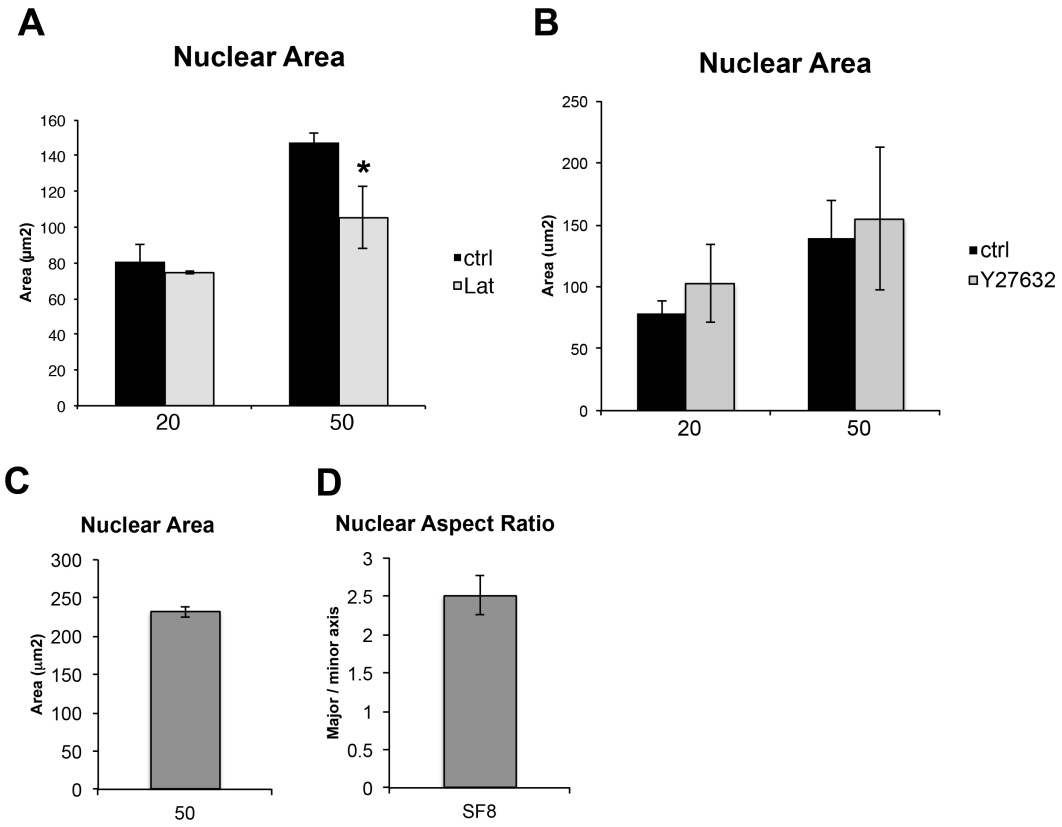

Figure S1: Quantification of nuclear morphology of human keratinocytes and HeLa cells on micro-patterned substrates. (A) Quantification of nuclear area of primary human keratinocytes on 20 μm and 50 μm islands following treatment with 1 μM Latrunculin A or (B) 10 μM Y27632. Data represent mean ± SEM (N=3 experiments). *P<0.05 compared to carrier control (0.1% DMSO). (C) Quantification of nuclear cross-sectional area of HeLa cells on 50 μm islands and (D) aspect ration on SF8 islands. Data represent mean ± SEM (N=3 experiments).

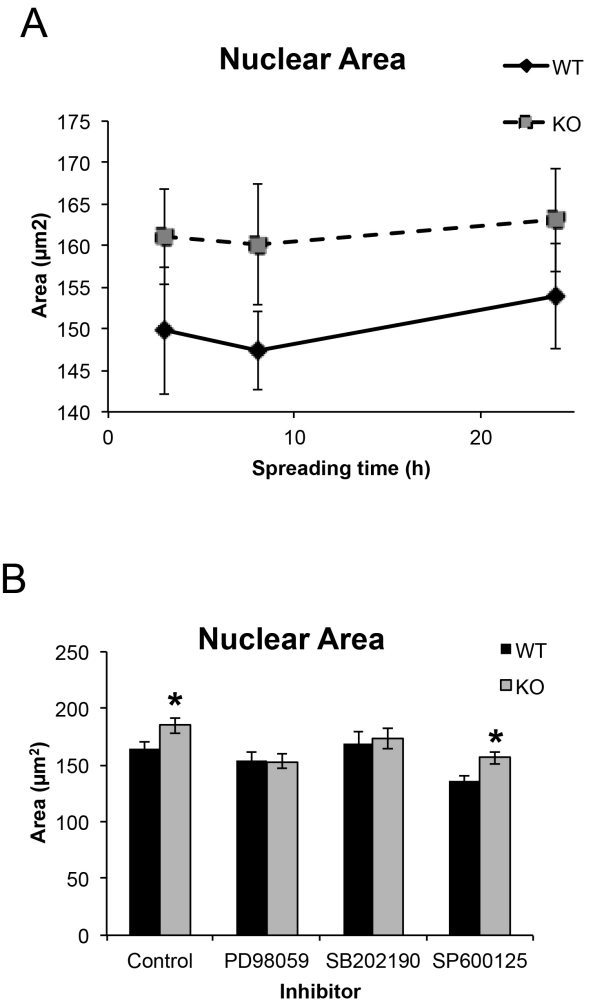

Figure S2: Stability and MAPK dependence of Plec-induced nuclear deformation: (A) WT and Plec KO keratinocytes were seeded on 50 μm substrates, and nuclear morphology was analysed at 4, 8, and 24 hours after seeding. Quantification of nuclear cross-sectional area in DAPI stained cells was performed using ImageJ. Data represent mean ± SEM (n=30 cells). (B) Nuclear cross-sectional area was quantified in WT and KO cells culture on 50 μm islands for 4 hours in the absence (0.1% DMSO) or presence of MAPK inhibitors, 10 μM PD98059 (Erk1/2), 2 μM SB202190 (p38), and 10 μM SP600125 (Jnk). *P<0.05 compared to WT. Data represent mean ± SEM (n=30 cells).

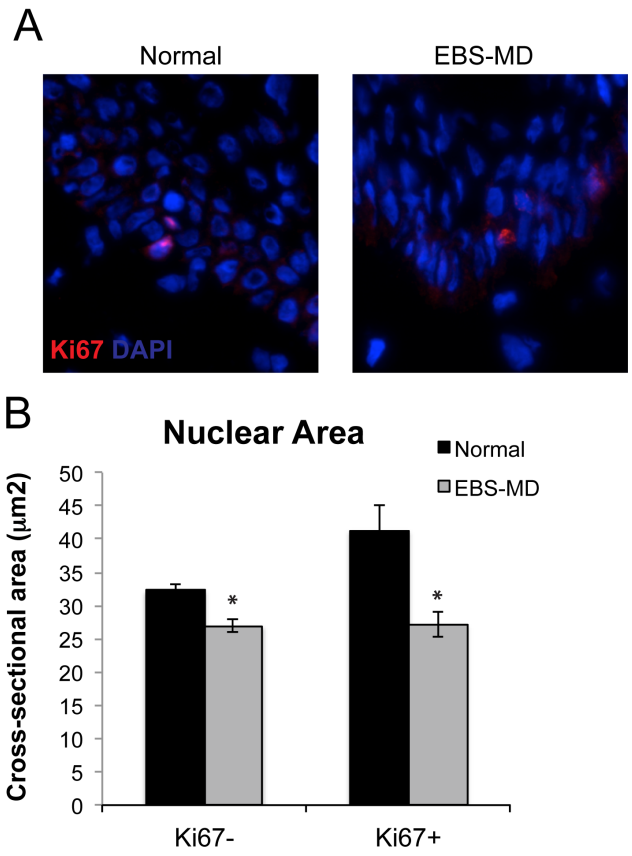

Figure S3: Nuclear morphology in proliferative and non-proliferative cells. (A) Representative immunofluorescence images of normal and plectin deficient, EBS-MD, skin stained for Ki67. (B) Quantification of nuclear cross-sectional area for Ki67 positive and negative cells in normal and EBS-MD skin. Data represent mean ± SEM (n=30 cells). *P < 0.05 compared to Normal.

Table S1: Details of gender, age, and anatomical location of human skin samples

Sample ID	Gender/Age	Location
EB1	M/neonate	Arm
EB2	M/neonate	Thigh
EB3	M/16 years	Arm
EB4	F/7 months	Thigh
Normal 1	M/neonate	Foreskin
Normal 2	M/neonate	Foreskin
Normal 3	F/36	Abdomen
Normal 4	F/47	Abdomen