SUPPLEMENTARY FIGURE LEGENDS

S1. a- Quantification of representative blots of pull down assay with GST-RalGDS to determine levels of GTP-bound Rap1 associated with collagen and vitronectin coated beads. b- Quantification of experiments with $\alpha 2\beta 1$ blocking antibody or with control antibody to show importance of $\alpha 2\beta 1$ integrin in Rap1 activation.

S2. Left panel: Immunoblot of Rap1 expression levels in fibroblasts treated with Rap1 siRNA (a), control siRNA (b), untreated cells (c) and cells treated with transfection reagent alone (d). Rap1-specific siRNA reduced Rap1 protein levels by 70% compared to cells treated with control siRNA in this representative experiment. Right panel: In three experiments, Rap1 was reduced by 65-75%; p<0.05.

S3. a-Rap1, Rap2 or $\beta 1$ integrin immunoprecipitates of bead-associated proteins. Quantification (mean ± sem) is shown for 3 experiments. Collagen treated (T) and untreated (UT) samples. b- Treatment with ML-7 (25 $\mu$M) inhibited collagen-induced phosphorylation of MLC. c- Cells transfected with MLCK siRNA show 70-80% reduction in MLCK levels as evaluated by densitometry. d- Lysates prepared from fibroblasts treated with ionomycin exhibit time-dependent phosphorylation of MLC.

S4. GST-RalGDS fusion protein was used to determine levels of GTP-bound Rap1 in wild-type, NM II-A and NM II-B null ES cells after incubation with collagen-coated beads. Data represent the mean ± sem for the ratio of active Rap1 to total Rap1 (3 independent experiments).

S5. a- Fibroblasts treated with blebbistatin (40$\mu$M) show recruitment of actin around beads independent of myosin activity. b- Quantitation of rhodamine phalloidin fluorescence intensity around beads.
a

![Collagen and Vitronectin graphs](image)

b

![α2β1 blocking antibody graph](image)
Rap1 siRNA
Control siRNA
untreated
Tx reagent

Densitometry

Rap1 siRNA
Control siRNA
untreated
Tx reagent
**Figure S5**

**a**

DIC images of cells treated with Blebbistatin and Rd-Phalloidin showing fluorescence intensity around beads above background. 

**b**

Graph showing Fluorescence Intensity around beads above background for 15' and 30' treatment periods with Blebbistatin and Vehicle.