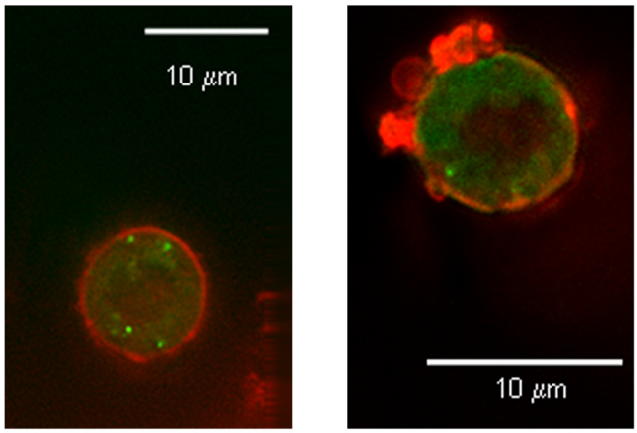

Fig. S1. Live cell imaging of mast cells at 37°C showing disruption of plasma membrane in presence of cytochalasin E. Isolated cells were plated and then incubated at 37°C with fluorescence dyes that mark the plasma membrane (CellMask Membrane, deep red plasma membrane stain, Invitrogen, Ca) and the acidic pH of the vesicle environment (Lysotracker green DND-26, Invitrogen, Ca). The fluorescent dyes were washed and cells were imaged with Delta Vision (Deconvolution) Microscope (Applied Precision, Issaquach Wa) equipped with fluorescein isothiocyanate FITC (green) and red (RD-TR-PE) filters. After the dyes were washed the cells were incubated with cytochalasin E (10 μM) for 10 minutes and then imaged in the same manner. Left panel: image of cell under control conditions and right panel: cell after exposure to cytochalasin E

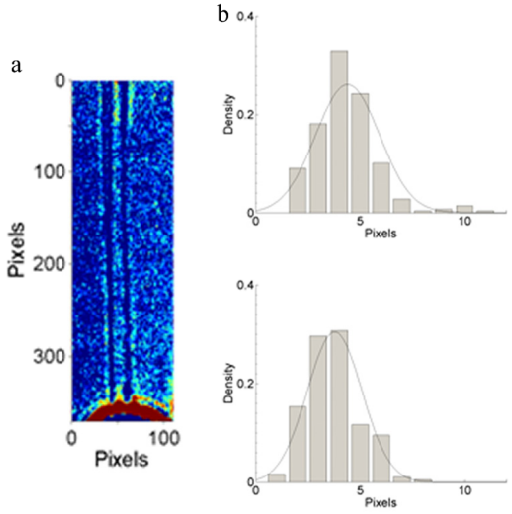

Fig. S2.Typical tube dimensions observed in presence of cytochalasin E. a. Image generated from video clips recorded when two tubes were in focus at end of experiment. Image is average of 150 video frames about 5 seconds of data. b. Histograms of width of tubes, the top and bottom panels represent leftmost and rightmost tubes shown in a. Histograms compiled from 50 images at five (5) positions along the tube between length 8 and 24 μm. The average width and standard deviation of tube 1 and 2 is 4.4 ±1.5 and 4.3 ± 1.3 pixels which corresponds to 350 (± 120) and 345 (±105) nm.

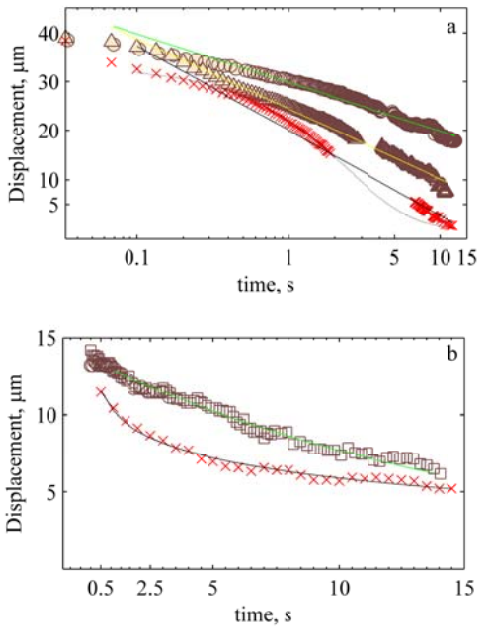

Fig. S3. Retraction of the tube-bead assembly back to the cell is slower when the actin cortex is disrupted. Crosses represent tubes formed under control conditions and all other symbols represent tubes formed in presence of cytochalasin E. a) 40 µm tubes, where triangles and circles (Movie S.3) represent data obtained for one and two tubes collapsing upon removal of trap. The green and yellow lines represent fit of data to a logarithmic function where the slope and intercept are -4.3 µm, 29.9 µm (circles) and -6.2 µm, 24.4 µm (triangles). The control data was better described by an exponential function with a time constant of 2.4 seconds and pre-exponential factor of 33 µm (dotted black line). The logarithmic fit (dashed black line) is also shown. b) 15 µm tubes. Solid green line represents fit of data to exponential function with a time constant of 17.6 seconds and pre-exponential factor of 13 µm. The dashed black line represents fit of data to logarithmic function with a slope and intercept of -1.89 µm and 10.3 µm. The circles and crosses represent data shown in Movies S2 and S4. The P-values for the slope and intercepts were always < 0.0001 and $r^2 > 0.96$.

Table S.1. Fit to Eq.3 (Rise) and Eq. 4 (Decay) WO working objects SD: standard deviation (P values < 0.0001).

	Slope			Rate	
Rise	pN^{-1}	SD	nm/wo	s^{-1}	SD
average	-0.066	0.0141	-0.269	0.274	0.04
Decay					
fast	0.0678	0.0100	0.276	99	5
slow	0.0254	0.0058	0.103	5.6	0.8
average	0.0653	0.0184	0.266	32	12