SUPPLEMENTARY MATERIAL

METHODS

Measurement of Mn^{2+} entry

Mn^{2+} may quench Fura-2 fluorescence. Since Mn^{2+} and Ca^{2+} share common entry pathways in the plasmalemma, Fura-2 quenching by Mn^{2+} is regarded as an index of divalent cation influx [1]. Experiments were carried out at the 360 nm wavelength, the isosbestic wavelength for Fura-2, and in Ca^{2+}-free medium supplemented with 50 μM $MnCl_2$, as shown elsewhere [2]. This avoids Ca^{2+} competition for Mn^{2+} entry and therefore enhances Mn^{2+} quenching. The experimental set-up is similar to that described in the Methods Section of the full length manuscript. Rat aortic rings were loaded with 16 μmol Fura-2/AM for 60 min at room temperature.

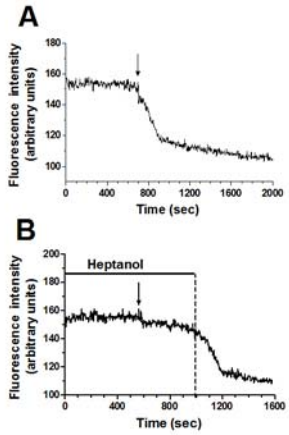

FIGURE LEGENDS

Figure 1. Injury-induces quenching of Fura-2 fluorescence by Mn^{2+}. A, no Mn^{2+} entry occurs in the unstimulated endothelium of rat aorta. Mechanical damage evokes a rapid decrease in Fura-2 fluorescence which is indicative of Mn^{2+} inflow. B, injury elicits only a modest decline in Fura-2 fluorescence when the rat aortic rings are pretreated with heptanol (4 mM). Washout of the drug rapidly restores Mn^{2+} entry and leads to the fluorochrome quenching.

Movie legend. Injury-induced intracellular Ca^{2+} oscillations in a number of endothelial cells (ECs) facing the lesion site. These Ca^{2+} waves, in turn, could propagate throughout the tissue and generate repetitive Ca^{2+} transients in cells distant from the wound edge. Mechanical scraping was carried out at 4 sec. Images are false coloured as depicted in the text for clarity.