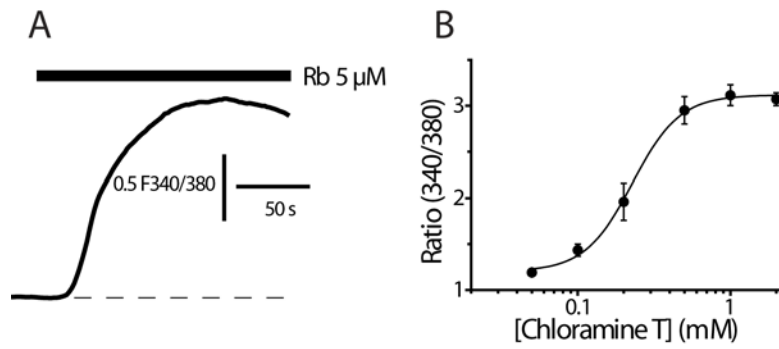


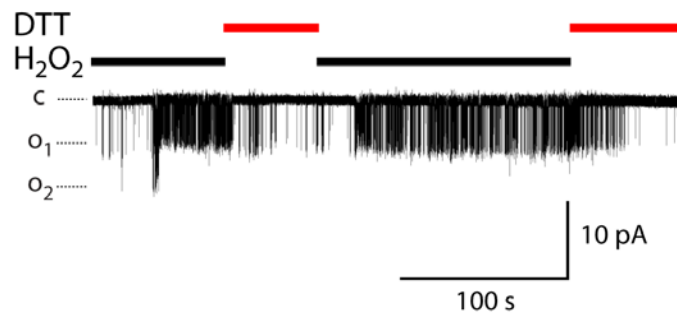
Supplementary Figure 1. Voltage dependent properties of AITC evoked currents.

Kinetics of AITC induced TRPA1 currents in calcium-free solutions. The time and voltage dependent current inactivation at positive membrane potentials is similar to the properties of H₂O₂ induced currents, Fig. 1. Also note the initial growth of the tail-current when the cell was repolarized to -60mV from positive membrane potentials. Holding potential -60 mV with 40 mV interval steps from -80 to +40 mV and 20 mV intervals from +40 to +180 mV.



Supplementary Figure 2. Rose Bengal and chloramine T activate TRPA1.

a, Average $[Ca^{2+}]_i$ -response in 29 TRPA1 CHO cells stimulated with the singlet oxygen donor Rose Bengal. **b**, Concentration-response curve for activation of TRPA1 by the oxidising agent, chloramine T. Data points are mean \pm SEM ratios from quadruplicate wells; EC50 = 230 \pm 14 μ M).



Supplementary Figure 3. Reversible and membrane-delimited activation and inactivation of TRPA1.

Application of H₂O₂ (5 mM) to the intracellular side of an inside-out patch from a TRPA1 CHO cell produced a marked increase in channel activity. H₂O₂ evoked channel activity was reversed by DTT (5 mM). Holding potential -100 mV. c, closed current level; o₁ and o₂ current levels for 1 or 2 channels open.