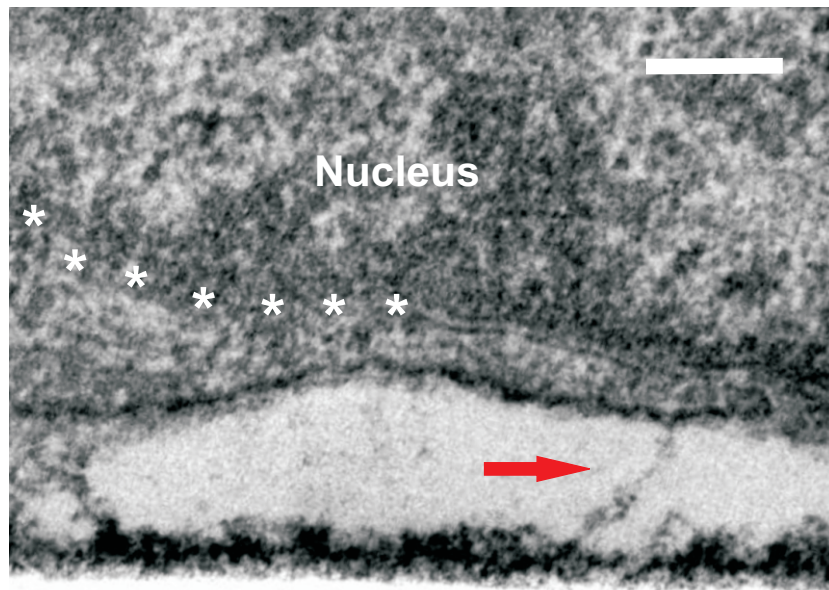


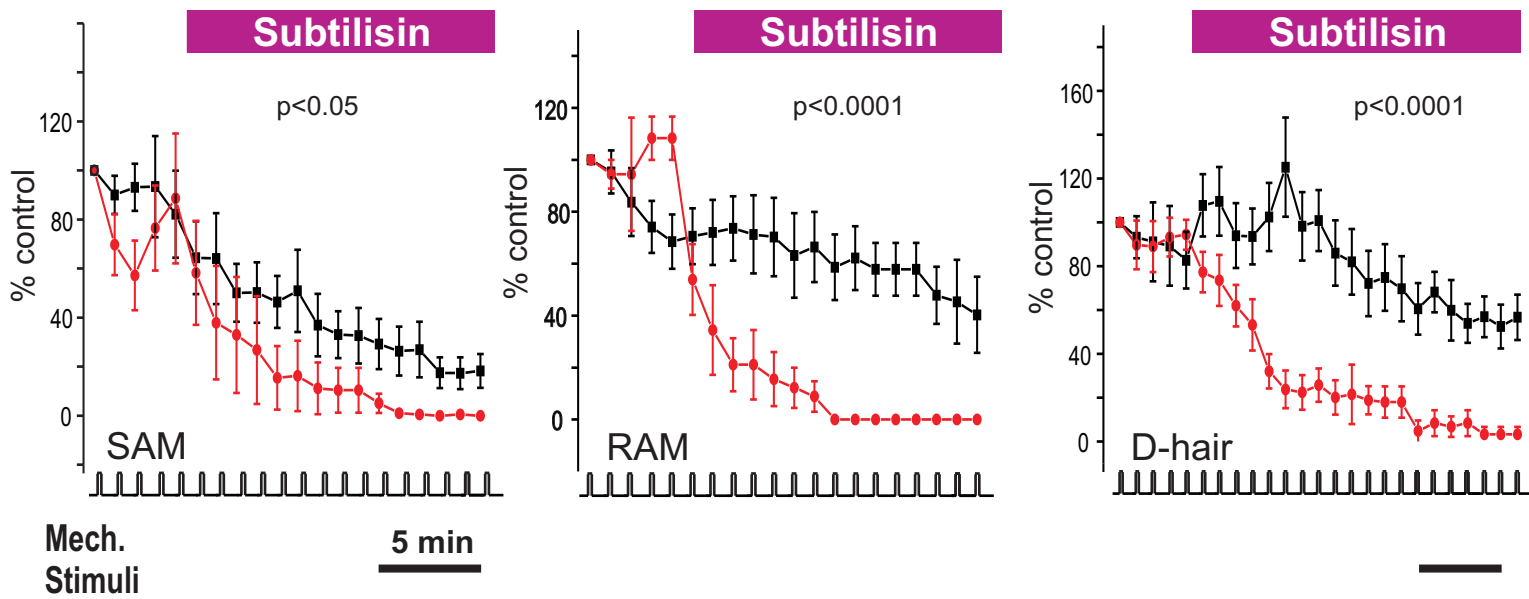
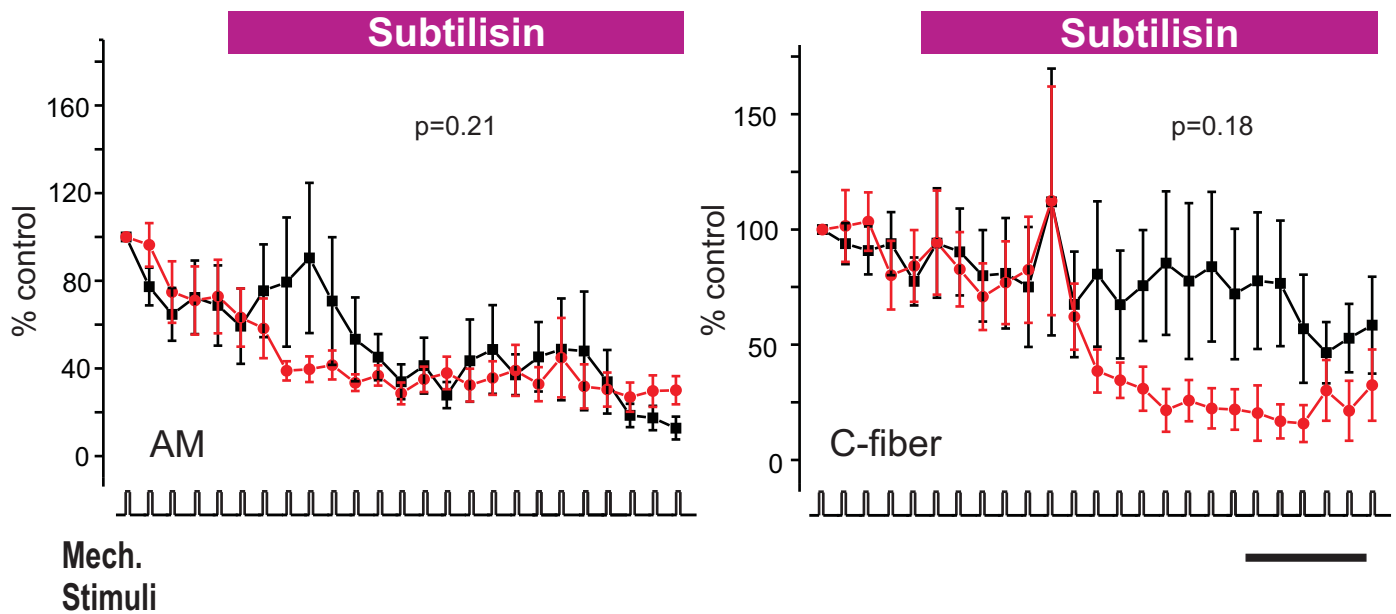
### Supplementary Figure 1

Schematic diagram showing the relationship between mechanosensitive currents found in isolated neurons and the physiological properties of primary afferents innervating the skin. **a**, shows a cartoon of the innervation of the skin by mechanoreceptors with large cell bodies (blue) which innervate specialized end organs such as Merkel cells and hair follicles, all such cells have narrow action potentials. Nociceptors (red), in contrast have smaller cell bodies and have free nerve endings in the skin, all nociceptors are thought to have broader action potentials with a hump on the falling phase of the spike. The incidence of mechanosensitive current types together with typical receptor responses to a ramp and hold mechanical stimulus are shown in **b** and **c**, for mechanoreceptors and nociceptors, respectively. Note that mechanoreceptors all have an RA mechanosensitive current regardless of whether they are mechanoreceptors with rapidly or slowly adapting responses to ramp and hold mechanical stimuli **b**. Nociceptors can possess an RA, IA or SA mechanosensitive current when studied *in vitro*.

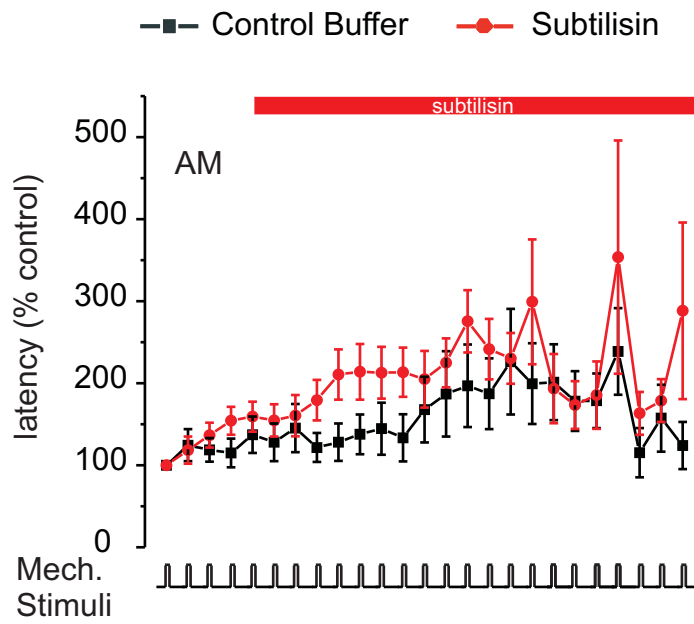


### Supplementary Figure 2

Example electronmicrograph showing the interface between the neuronal soma plasma membrane and the laminin substrate. The red arrow indicates a long protein filament which has the same dimensions of the typical tether like protein identified at the neurite-laminin interface (scale bar is 100 nm). In this picture the nucleus of the cells is visible and white asterisks indicate the nuclear membrane.

**a****b****Supplementary Figure 3**

The mean spike rate of **a**, mechanoreceptor and **b**, nociceptors following application of subtilisin applied to the receptive field. Note that subtilisin only significantly decreases the mean response of mechanoreceptors but does not have a significant effect on nociceptive neurons. The data is analyzed from the same recordings shown in Figure 4. Statistical significance was calculated using a repeated measures ANOVA analysis.



#### Supplementary Figure 4

The mechanical latency of A-fibre nociceptors is not significantly increased following application of subtilisin to the receptive field. Statistical significance was calculated using a repeated measures ANOVA analysis.