



Figure 1 | GABA evokes pericyte-mediated constriction of vasa recta capillaries. Data was taken from time series experiments in which naïve kidney slices were exposed to; GABA (3 μ M; **a-f**), other vasoactive compounds (**g-l**), and in combination (**m-n**) for approximately 300s. **a**, representative trace of the repeatable GABA evoked constriction of vasa recta. **b**, Vasa recta exposed to PSS (**bi**), GABA (**ii**), PSS (**iii**) and GABA (**iv**). Yellow circle = pericyte, red lines = pericyte site and blue lines = non-pericyte sites. **c**, concentration dependent effect of GABA. **d**, mean pericyte-mediated constriction of vasa recta evoked by vasoconstrictor compounds norepinephrine (NE; blue), Adenosine-5'-triphosphate (ATP; red), GABA (black), angiotensin-II (Ang-2; green), and endothelin-1 (ET01; orange). **e**, percentage change in vasa recta diameter (blue trace) and percentage change of Flu-4 fluorescence (red trace). Images show Fluo-4-AM signal before (**fi**), during (**ii**) and after (**iii**) superfusion of tissue with GABA, white lines denote a vessel, red circles = pericyte, at which vessel diameter was measured (red brackets). **g**, **h**, Muscimol (1 μ M) and baclofen (200 nM) respectively evoked pericyte-mediated constriction, with the mean vasoconstrictions shown in scatterplot (**i**). **j**, **k**, Bicuculline (10 μ M) and CGP (1 μ M), induced pericyte-mediated dilation, with the mean dilations shown in scatterplot (**l**). **m**, Co-application of muscimol and baclofen increases constriction of vasa recta at pericyte sites. **n**, Bicuculline, CGP and both antagonists combined, all reduce the GABA-evoked constriction of vasa recta at pericyte sites. Data shown from male Sprague-Dawley rats as mean \pm s.e.m, $n \geq 3$ pericytes. Statistics were calculated in GraphPad PRISM (5.0). Statistical significance between pericyte and non-pericyte sites were determined using a Student's t-test. A one-way ANOVA and post hoc tests Tukey (when comparing all groups) or Dunnett (when comparing against control group only) were used for multiple comparisons. ***P < 0.001; **P < 0.01; *P < 0.05.