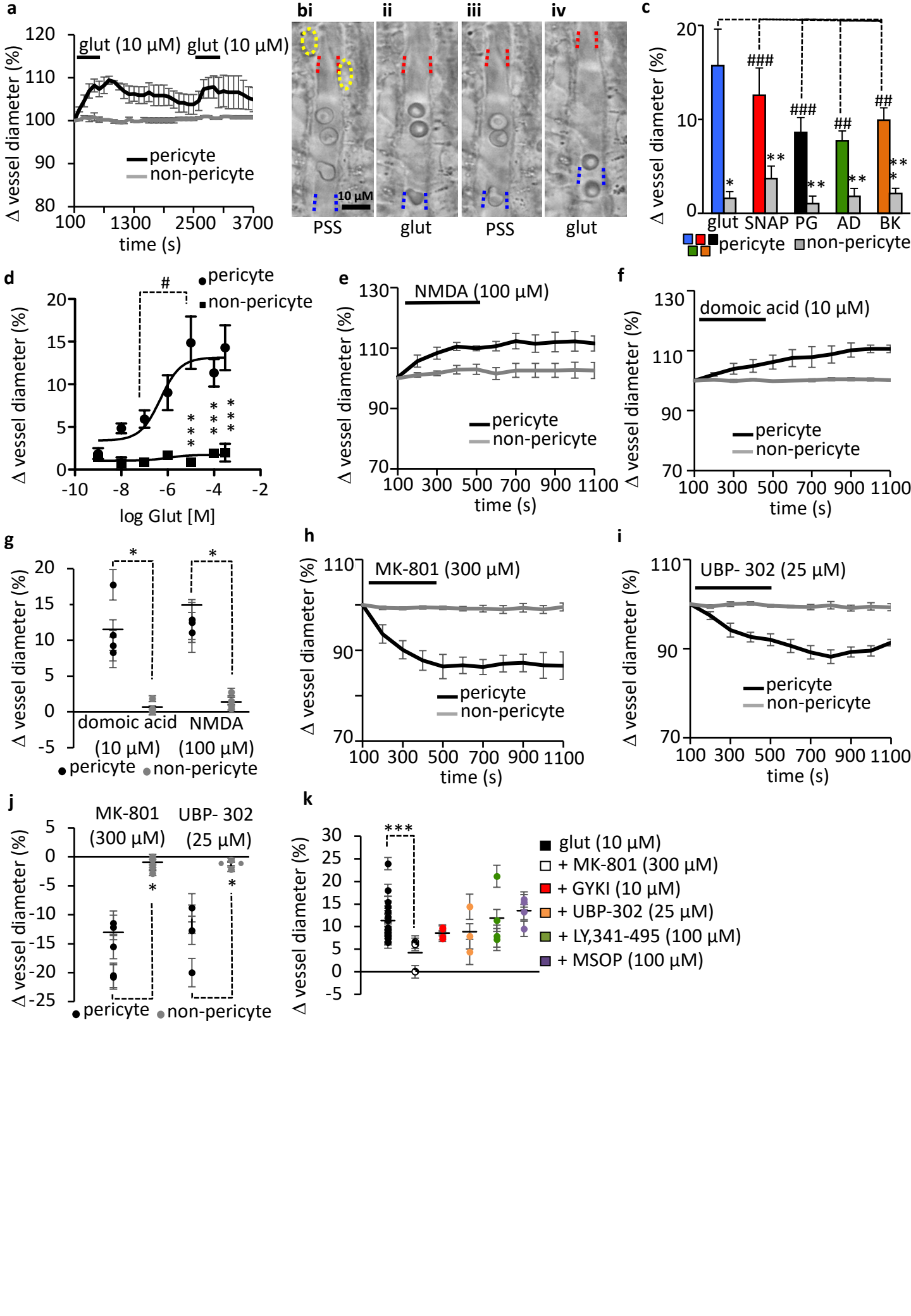
a
glut (10 µM)
glut (10 µM)
Δ vessel diameter (%)
pericyte
non-pericyte
time (s)
bi
ii
iii
iv
10 µM
PSS
glut
PSS
glut
c
Δ vessel diameter (%)
glut
SNAP
PG
AD
BK
pericyte
non-pericyte
d
pericyte
non-pericyte
Δ vessel diameter (%)
log Glut [M]
e
NMDA (100 µM)
Δ vessel diameter (%)
pericyte
non-pericyte
time (s)
f
domoic acid (10 µM)
Δ vessel diameter (%)
pericyte
non-pericyte
time (s)
g
Δ vessel diameter (%)
domoic acid (10 µM)
NMDA (100 µM)
pericyte
non-pericyte
h
MK-801 (300 µM)
Δ vessel diameter (%)
pericyte
non-pericyte
time (s)
i
UBP- 302 (25 µM)
Δ vessel diameter (%)
pericyte
non-pericyte
time (s)
j
MK-801 (300 µM)
UBP- 302 (25 µM)
Δ vessel diameter (%)
pericyte
non-pericyte
k
Δ vessel diameter (%)
glut (10 µM)
+ MK-801 (300 µM)
+ GYKI (10 µM)
+ UBP-302 (25 µM)
+ LY,341-495 (100 µM)
+ MSOP (100 µM)

Figure 2 | Glutamate evokes pericyte-mediated dilation of vasa recta capillaries. Data was taken from time series experiments in which naïve kidney slices were exposed to glutamate (glut; 10 μM) and other vasoactive compounds for approximately 400s. **a**, Representative trace of glutamate evoked vasodilation. Vasa recta exposed to PSS (**bi**), glut (**ii**), PSS (**iii**), and glut (**iv**). Yellow circle = pericyte, red lines = pericyte site and blue lines = non-pericyte sites, black scale bar = 10 μm. **c**, mean pericyte–mediated dilation of vasa recta evoked by vasodilator compounds glut (blue), SNAP (red), prostaglandin E_2 (PG; black), adenosine (AD; green), and bradykinin (BK; orange). **d,** Concentration-dependent effect of glutamate on vasa recta diameter. **e, f,** Both NMDA (100 μM) and domoic acid (10 μM) evoked dilation of vasa recta at pericyte sites, with the mean vasodilation shown in scatterplot (**g**)**. h, I,** MK-801 (300 μM) and UBP-302 (25 μM) evoked pericyte-mediated vasoconstriction, with the mean vasoconstriction shown in scatterplot (**j**)**. k,** Only MK-801 inhibits glutamate-evoked dilation of vasa recta by pericytes. Data shown from male Sprague-Dawley rats as mean ± s.e.m, n ≥ 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 for pericyte versus non-pericyte sites, ***P < 0.001; **P < 0.01, and A one-way ANOVA and post hoc Dunnett test for comparison of agonists against glut, *P < 0.05, $^{\#\#}$P < 0.01, $^{\#\#\#}$P < 0.001