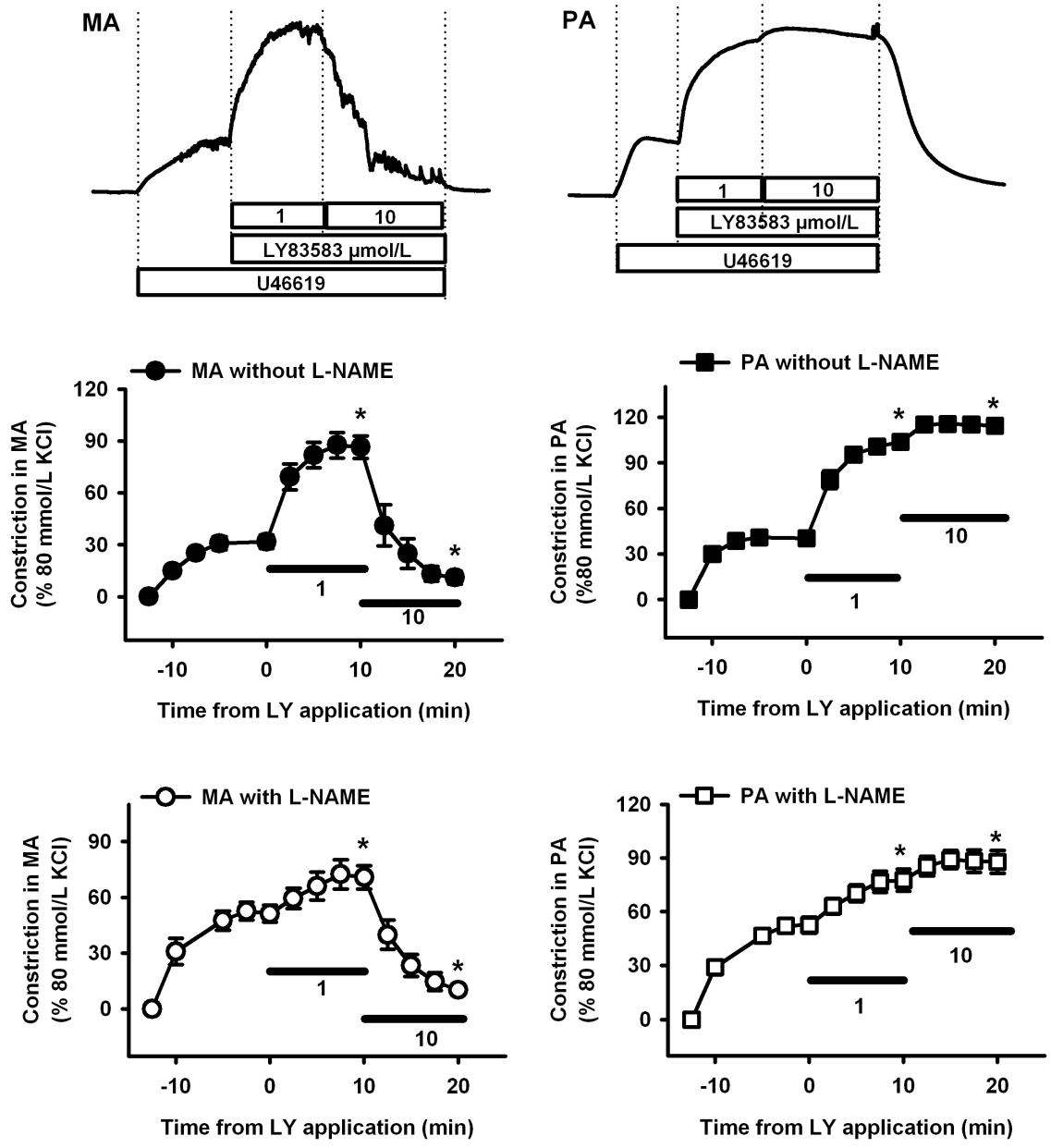
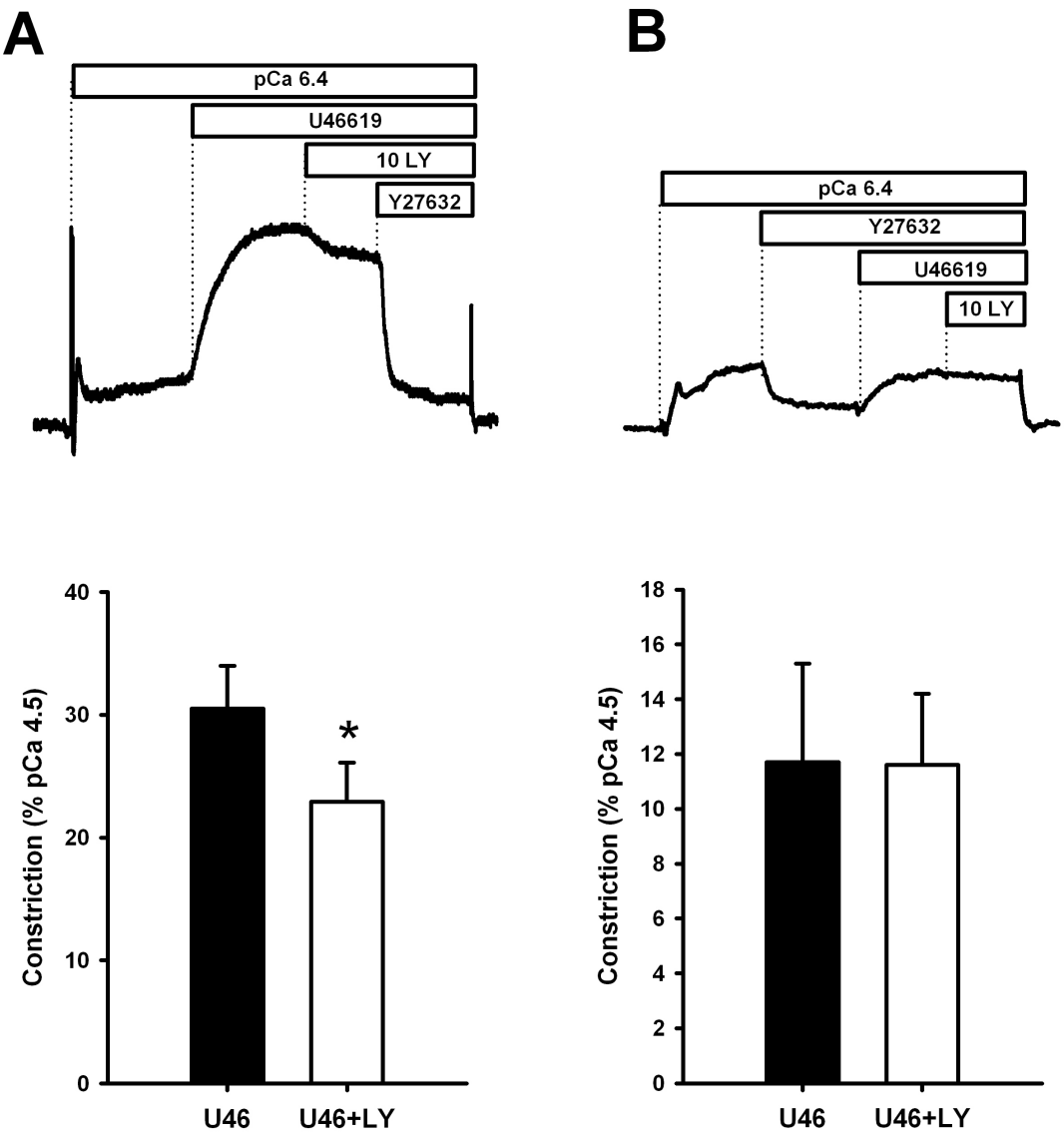
**SUPPLEMENTARY DATA (Figures S1-S4)**

**Figure S1: Constriction/relaxation responses to LY83583 in mesenteric and pulmonary arteries: effects of NOS inhibition.**



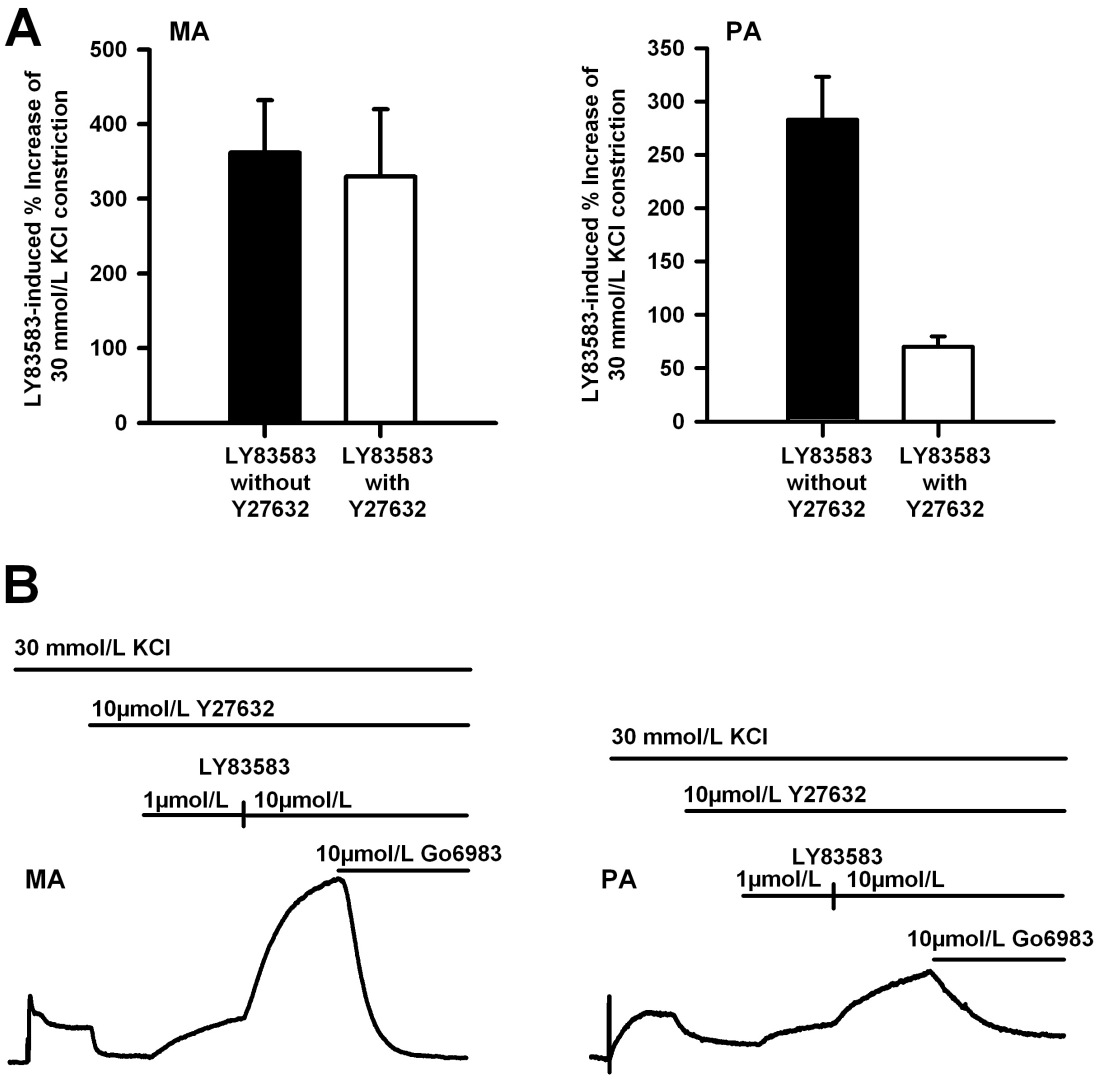

**Traces**: Effects of cumulative 1 and 10µmol/L LY83583 on mesenteric (MA) and pulmonary (PA) arteries pre-constricted with 100nmol/L U46619. **Plots**: Average effects in the absence (solid symbols) and continuous presence (open symbols) of 1mmol/L L-NAME, n = 4-5. Although L-NAME enhances relative amplitude of U46619 pre-constriction, 1µmol/L LY83583 still causes further constriction in both MA and PA and 10µmol/L still relaxes in MA. *Denotes significant enhancement or inhibition compared to the zero time-point (P<0.05).

**Figure S2: Effect of LY83583 on U46619-induced constriction in α-toxin permeabilized MA.**



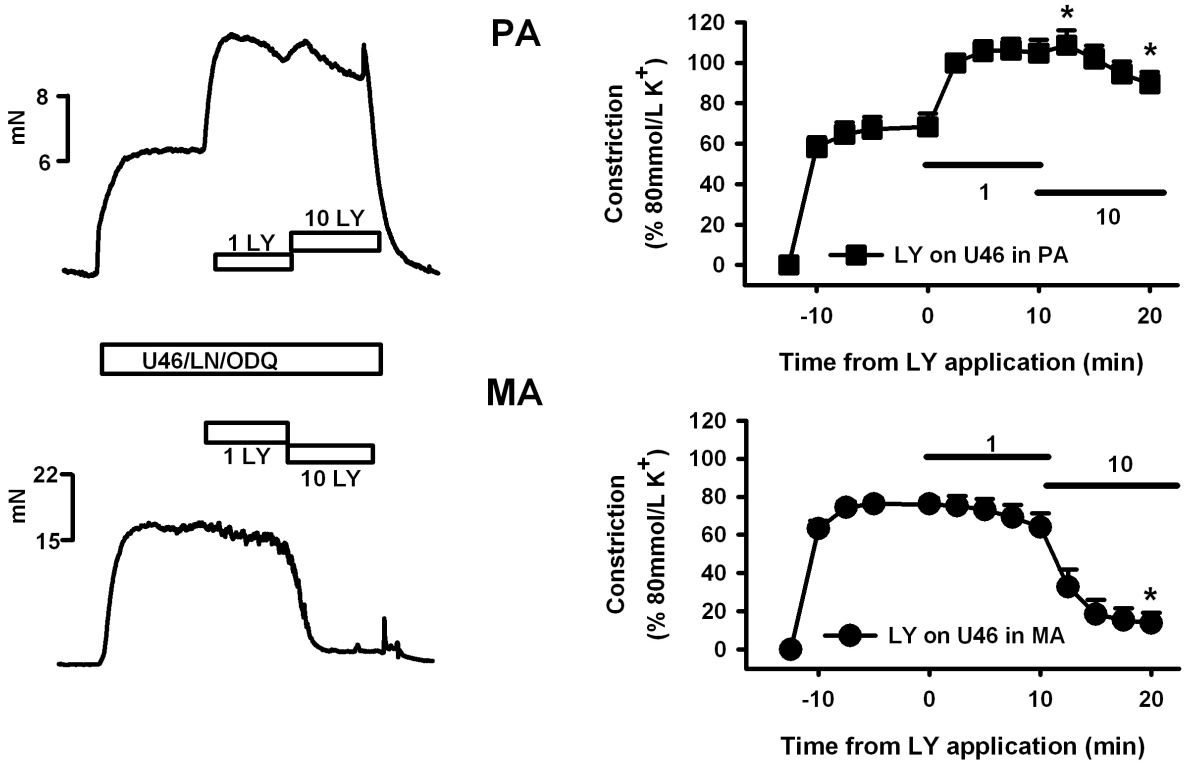

**A**: $Ca^{2+}$-induced constriction in α-toxin permeabilized MA (pCa 6.4). U46619 causes further constriction and this is only partially reversed by 10μmol/L LY83583, but is very sensitive to Rho-kinase inhibitor Y27632 (10μmol/L). **B**: Upon prior treatment with Y27632, U46619 still causes some constriction but LY83583 is without effect. **Bar charts**: Summary data showing small but significant relaxation induced by LY83583 in absence (**A**, *P<0.05, n=9) but not presence of Y27632 (**B**, n=11).

**Figure S3: Enhancement of 30mmol/L KCl-induced constriction by LY83583: effects of Rho-kinase and protein kinase C inhibition**




**A:** Influence of the Rho-kinase inhibitor Y27632 on 10µmol/L LY83583-mediated enhancement of 30mmol/L KCl-induced constriction in mesenteric (MA, n=4) and pulmonary (PA, n=4) arteries. **B**: LY83583-induced constriction remaining in presence of Y27632 is abolished by application of the PKC inhibitor Gö6983 in both MA and PA (traces representative of n=4).

**Figure S4: Effects of prior guanylyl cyclase inhibition on responses to LY83583**




Influence of prior treatment with guanylate cyclase inhibitor ODQ (10µmol/L) on LY83583-induced responses in PA (top) and MA (bottom). When pre-constricted with U46619/L-NAME (range 10-100 nmol/L), LY83583 caused constriction at both 1 and 10µmol/L in PA (n=8), whereas in MA, 1µmol/L LY83583 was without effect and 10µmol/L caused relaxation (n=9). *Denotes significant enhancement or inhibition compared to the zero time-point ($P<0.05$).