Leptin augments coronary vasoconstriction and smooth muscle proliferation via a Rho kinase dependent pathway

Basic Research in Cardiology

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Fig. I

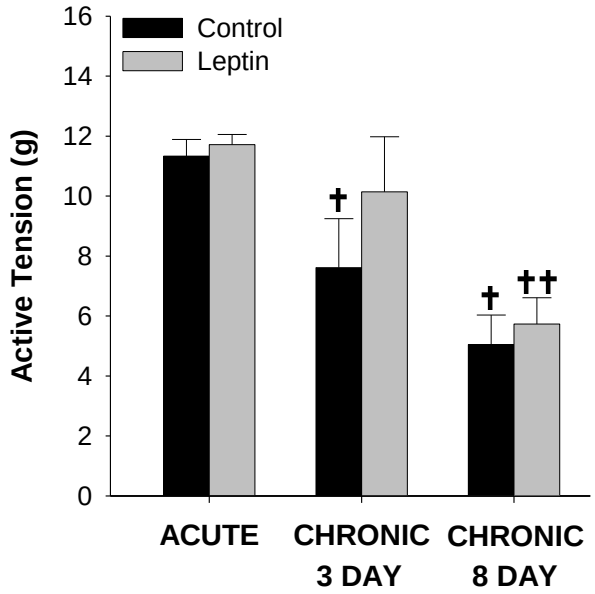

Fig. I Effects of acute versus chronic leptin treatment on coronary contraction. Leptin treatment had no effect on vasoconstriction to the thromboxane A_2 receptor agonist, U46619 (1 μM) following acute, chronic 3 day, or chronic 8 day exposure. Contractile responses in untreated, control arteries were progressively reduced throughout the culture time course. Contractile responses in leptin treated arteries were also reduced following 8 days of exposure. All groups n = 4. †P<0.05 versus acute control. ††P<0.05 versus acute leptin

Fig. II

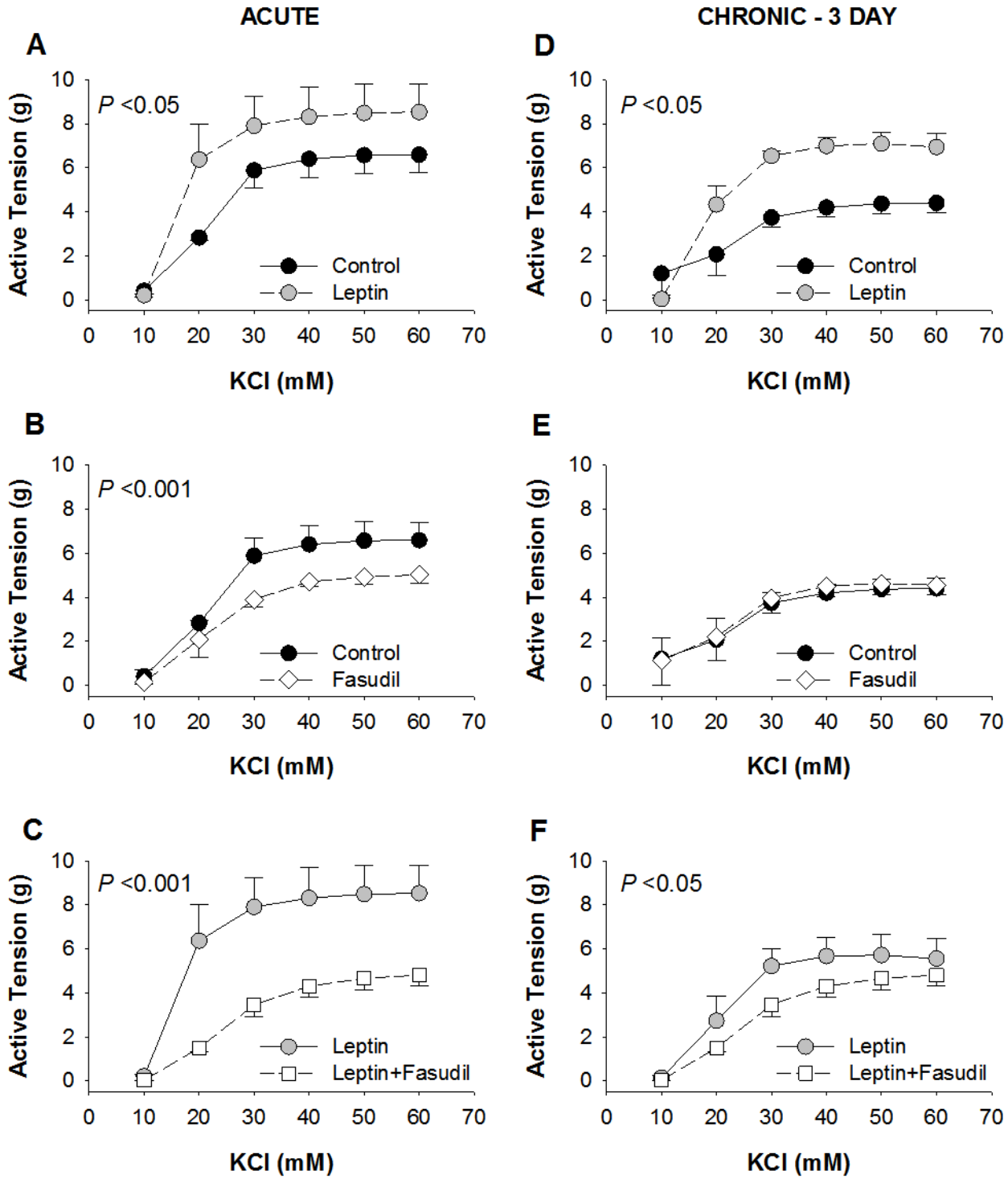

Fig. II Effects of leptin and/or fasudil treatment in the absence of coronary endothelium. Functional responses observed in endothelium intact arteries following acute (**Fig. 1A, 2A, 2C**) and chronic (**Fig. 1B, 2B, 2D**) leptin administration were similar to those observed in endothelium denuded arteries following acute (**A-C**) and chronic, 3 day (**D-F**) exposure. All groups n = 3

Fig. III

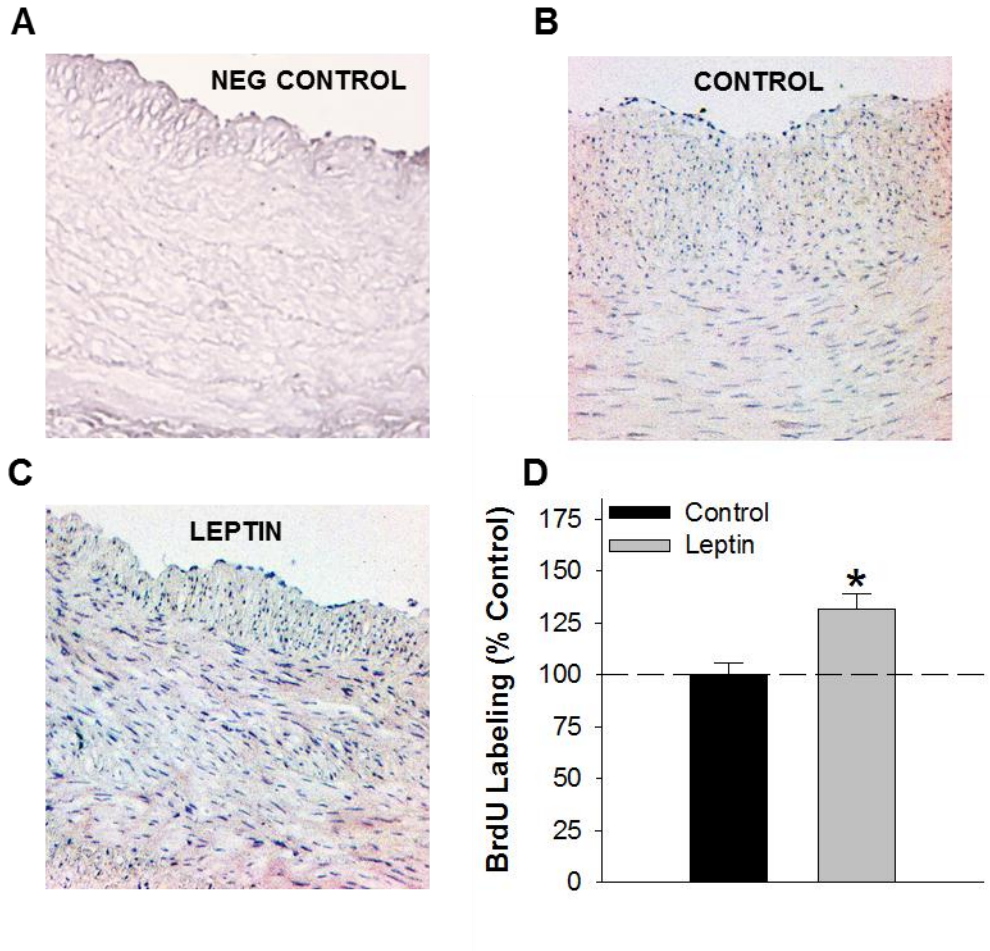

Fig. III Leptin augments cellular proliferation in coronary arteries. Representative images of BrdU-proliferation assays in negative control (no BrdU added to culture media [**A**]), untreated, control (**B**) and leptin treated (**C**) arteries (8 day culture in serum containing media). A significantly higher percentage of BrdU-positive nuclei was detected in leptin treated, relative to untreated arteries (**D**). Each group n = 5. *P<0.05, leptin versus control

Fig. IV

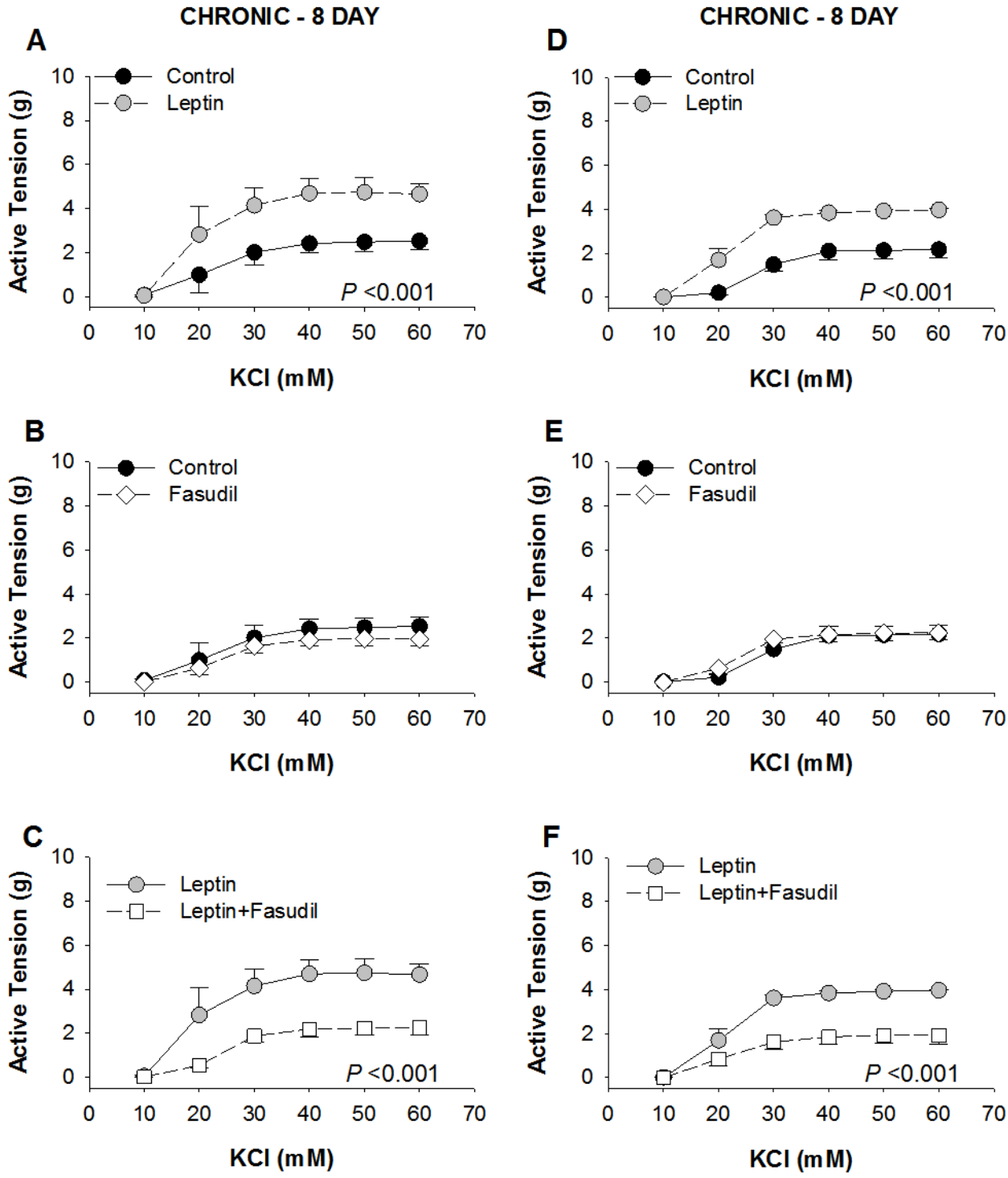

Fig. IV Effects of chronic, 8 day leptin and/or fasudil treatment on depolarization-induced contractions. Chronic leptin administration (8 day culture, serum-containing media) increased KCl-induced contractions ~2.2 g at doses >40 mM (**A**). Inhibition of Rho kinase with fasudil (1 µM) had no effect on vasoconstriction to KCl in the absence of leptin (**B**), but reduced the effect of leptin administration on KCl-induced contractions (**C**). Functional responses of all treatment groups were similar in endothelium denuded arteries (**D-F**). All groups n = 3