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**α CALCITONIN GENE-RELATED PEPTIDE (α CGRP)
PLAYS A PROTECTIVE ROLE IN THE ONSET OF
ANGIOTENSIN-II INDUCED HYPERTENSION AND
VASCULAR INFLAMMATION/REMODELLING**

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Sensory nerve-derived neuropeptide calcitonin gene-related peptide (CGRP) acts as a potent vasodilator, and is suggested to be protective in models of hypertension. The aim of this study was to learn of the vascular mechanisms by which α CGRP is protective in an angiotensin-II (Ang II) model of hypertension. Matched C57BL/6 wildtype (WT) and α CGRP knockout (KO) mice were infused with Ang II (1.1 mg/kg/day for 14 days) or vehicle (saline) via the osmotic minipump. Blood pressure was recorded by tail-cuff plethysmography until day 14 when the experiment was terminated. Vascular hypertrophy was assessed by histology and RT-qPCR. Data were analysed using ANOVA plus Bonferroni's post test.

WT and α CGRP KO mice did not show any difference in systolic pressure under baseline recordings. However systolic pressure was elevated after 14 days Ang II infusion in WT (129 ± 3.84) and α CGRP KOs (140 ± 7.23 , $p < 0.001$), this being significantly enhanced in the CGRP KOs ($p < 0.001$). α CGRP mRNA expression was upregulated in the aorta of hypertensive WTs ($p < 0.01$), and localisation of CGRP was visible in endothelial and smooth muscle cell layers of the vessel wall. Vascular inflammation/remodelling and markers of oxidative stress was also apparent in hypertensive subjects, characterised by increased collagen III, glutathione peroxidase 1 (GPX1) and NOX 2 mRNA expression. Remodelling and expression of these markers was exacerbated in Ang II-treated α CGRP KOs ($p < 0.001$). This study provides evidence that deletion of α CGRP is associated with enhanced Ang II-induced hypertension and vascular injury.