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## A novel role for GABA and glutamate in pericyte-mediated regulation of medullary blood flow

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GABA and its synthesising enzyme, glutamate decarboxylase, have been detected in the rat kidney [1-2]. GABA has also been found in human plasma and urine [3-4] and most recently, a renoprotective role for GABA has been suggested [5]. We are systematically investigating functional roles for GABA and glutamate in the mammalian kidney.

Contractile pericytes regulate vasa recta diameter in response to a number of endogenous vasoactive agents and in doing so regulate medullary blood flow (MBF) [6]. We have utilised the live kidney slice model [6] to demonstrate GABA-mediated constriction of vasa recta that was significantly greater at pericyte sites than at non-pericyte sites ( $p < 0.01$ ). Conversely, the GABA substrate glutamate (100  $\mu\text{M}$ ) caused a significantly greater vasodilation of vasa recta at pericyte sites compared to non-pericyte sites ( $p < 0.05$ ).

Data presented here identifies a novel role for GABA and glutamate in pericyte-mediated regulation of vasa recta diameter and thus MBF.

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