

**A component of nerve-evoked contractions of rat vas deferens is blocked by T-type calcium channel antagonists.**

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In rat vas deferens, nerve mediated-contractions to a single electrical stimulus consist of an early purinergic and a later adrenergic component with differing sensitivities to L-type calcium entry blockers. In the prostatic portion, contractions to a single stimulus are largely purinergic and this response is abolished by L-type calcium entry blockers such as nifedipine. In the epididymal portion, contractions to a single stimulus are largely adrenergic and this response is unaffected by nifedipine. However, Shishido et al. (2009) have shown that a component of contractions to trains of pulses in guinea-pig vas deferens is susceptible to T-type calcium channel blockers. We have investigated the effects of the T-type blockers mibefradil and NNC 55-0396 against contractions in rat vas deferens. Male Wistar rats (250g) were killed by CO<sub>2</sub> overdose. Prostatic and epididymal portions of rat vas deferens were stimulated with a single electrical stimulus (supramaximal voltage) every 5 min. In some experiments, responses in epididymal portions were carried out in the presence of nifedipine (10  $\mu$ M). Both mibefradil and NNC 55-0396 (100  $\mu$ M) produced inhibition of contractions of epididymal portions ( $42.8 \pm 5.9\%$  and  $63.5 \pm 7.5\%$  of control, respectively,  $n=4$  each). However, both agents produced small inhibitions of responses in prostatic portions, presumably by L-type calcium entry block. It is concluded that the T-type calcium channel blockers mibefradil and NNC 55-0396 block particularly the adrenergic nifedipine resistance response to nerve stimulation in rat vas deferens, and this may suggest that this component of the contraction involves T-type calcium channels.

Shishido T. et al. *Neurourol Urodyn*. 2009 Feb 19. (Epub ahead of print).