

**THE INFLUENCE OF EXOGENOUS NITRIC OXIDE ON THE  
POTASSIUM CHANNELS OF THE HUMAN NON-PREGNANT  
MYOMETRIUM**

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Nitric oxide (NO) is a multifunctional molecule that mediates a range of physiological processes. It is known to be a strong relaxant of smooth muscles, including the myometrium. NO relaxes smooth muscle cells by modifying several intracellular processes. One of them is the activation of potassium channels through cGMP-dependent protein kinase. There is evidence that in some smooth muscle, NO influences potassium channels independently of cGMP.

We investigated the effects of different potassium channel blockers on the influence of exogenous nitric oxide on the human non-pregnant myometrium.

After preincubation of uterine strips with L-NNA, exogenous NO (donated by DEA/NO) inhibited their spontaneous contractile activity dose – dependently.

All the potassium channel blockers used significantly inhibited the effect of NO on the contractile activity of the myometrium (estimated by AUC value).

Incubation with apamin did not significantly alter the DEA/NO-induced decrease of the amplitude of myometrial contractions. However, we observed significant decrease in their frequency.

Preincubation with CTX did not change the influence of DEA/NO on the amplitude of the contractions, but it inhibited the decrease in frequency caused by DEA/NO administration.

Incubation with glybenclamide augmented the decrease of the amplitude of contractions and significantly inhibited the decrease in frequency.

Our data suggest that the effects of the exogenous NO on the contractile activity of the human non-pregnant myometrium involve the activation of different potassium channels.