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Development and mechanism of a specific supersensitivity to nitrovasodilators after inhibition of vascular nitric oxide synthesis *in vivo*

(vessel wall/guanylate cyclase)

S. MONCADA*, D. D. REES, R. SCHULZ, AND R. M. J. PALMER

Wellcome Research Laboratories, Langley Court, Beckenham, Kent BR3 3BS, United Kingdom

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Table 1. Effect of endothelium removal or treatment with L-NMMA, L-NIO, or L-NAME (100 μM each) on the potency and force of contraction of phenylephrine

Conditions	Phenylephrine EC_{50}, nM	Maximum tension, g
+ endothelium	104.0 ± 32.3	3.4 ± 0.1
− endothelium	12.2 ± 1.1*	4.8 ± 0.2*
+ endothelium		
+ L-NMMA	10.0 ± 0.9*	4.2 ± 0.5
+ L-NIO	7.9 ± 1.6*	5.2 ± 0.7*
+ L-NAME	10.9 ± 0.4*	4.1 ± 0.3*

The potency of phenylephrine is expressed as the EC_{50} (the concentration that produces 50% of the maximum response to phenylephrine). Representative data for the effect of endothelium removal and of L-NIO (100 μM) are shown in Fig. 1. Each value is the mean ± SEM of three separate determinations.
*$P < 0.05$ versus endothelium intact control.

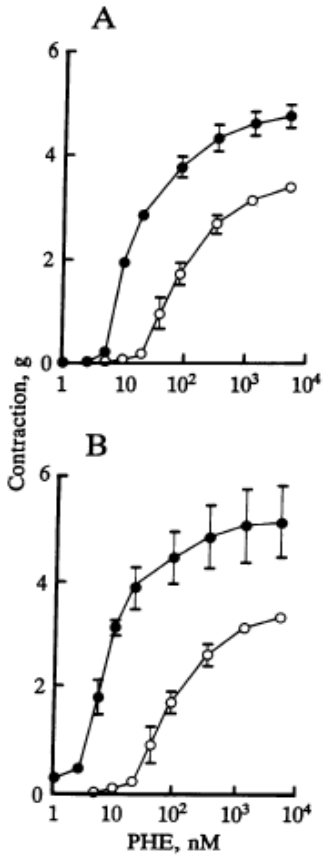

FIG. 1. Effect of endothelium removal (*A*) and L-NIO (100 μM) (*B*) on the contraction of rings of rat aorta induced by phenylephrine (PHE). ○, Responses to phenylephrine in untreated rings with endothelium. Both removal of endothelium and L-NIO increase the potency of phenylephrine and the force of contraction of the arterial rings. Each point is the mean ± SEM of three separate determinations. Similar results were obtained with L-NMMA and L-NAME ($n = 3$ for each; data not shown).

Phenylephrine : agoniste du récepteur alpha1-adrénergique

L-NMMA, L-NIO, L-NAME : analogues de l'arginine, inhibiteurs de la synthetase du NO