

Nitric oxide pathway presumably does not contribute to antianxiety and memory retrieval effects of losartan

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Nitric oxide (NO) and angiotensin (AT) receptors have demonstrated well-established interactions in various physiological phenomena. AT1 receptors can play a part in stress-induced activation of the hypothalamic–pituitary–adrenal axis; also, angiotensinergic neurotransmission plays a pivotal role in stress-evoked physiological responses. On the basis of the stressmodulating characteristics of NO, AT1, and AT2 receptors, the present study evaluated the roles of NO and AT1 receptors in the attenuation of stress-induced anxiety-like behaviors after administration of losartan, an AT1 antagonist. Male Wistar rats were exposed to the communication stress box, using a novel method to induce physical or emotional stress, and losartan (10 mg/kg), losartan+L-NG-nitroargininemethyl ester (L-NAME), L-NAME (1, 10, and 100 mg/kg), and normal saline-treated groups were compared. Losartan had reduced behavioral changes induced by both types of stressor and enhanced memory retrieval. Anxiety-like behaviors were significantly attenuated by administration of losartan, to a greater extent in the emotional rather than physical stress group. None of the injected dosages of L-NAME reversed the antianxiety

and memory retrieval effects of losartan. Our results indicate that losartan probably improves memory retrieval and lessens anxiety-like behaviors through mechanisms other than the NO pathway. Behavioural Pharmacology 28:420–427 Copyright © 2017 Wolters Kluwer Health, Inc. All rights reserved.

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