Publication

Models of cardiovascular disease: measurement antihypertensive activity in the conscious rat (SHR, DOCA-Salt, and the Goldblatt hypertension models).

P. Guillaume, D. Provost, P. Legrand, M. Godes and P. Lacroix..
Current Protocols in Pharmacology, (Eds. S.J. Enna and M. Williams), Wiley, New York, Ch. 5, pp 5.53.1.-5.53.15, 2009.

http://www.ncbi.nlm.nih.gov/pubmed/22294399

Abstract

The protocols described in this unit are used to assess the effects of new chemical entities on hypertension in conscious rats. In the spontaneously hypertensive rat (SHR) model, the results obtained with the reference compounds clonidine, prazosin, propranolol, and captopril are provided for illustration. All compounds demonstrate antihypertensive activity, with captopril and prazosin being the least and the most active, respectively. In the deoxycorticosterone acetate (DOCA)-salt model in the rat, the test substance shown as an example (a potential endothelin ET(A)-receptor antagonist) prevents the development of hypertension in the first phase. However, the effects of treatment disappear in the very last phase of the study, suggesting the development of a malignant hypertension resistant to treatment in this model. In the Goldblatt hypertension rat model (renal artery stenosis), losartan prevents the development of hypertension. It does not modify the weight of the right and left kidneys but slightly reduces the degree of cardiac hypertrophy.