

## Effects of NADPH oxidase deletion in the stroke-prone spontaneously hypertensive rat

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[Purpose] Blood pressure (BP) is controlled by the cardiovascular and neuroendocrine system by a complicated manner, in which oxidative stress plays important roles. In this study, roles of Nox2 and Nox4, which are two major subtypes of NADPH oxidases in BP regulation and cerebrovascular events were evaluated using Nox2- and Nox4-deleted stroke prone spontaneously hypertension rat (SHRSP). [Methods and Results] Nox2- and Nox4-deficient SHRSP (Nox2KO and Nox4KO, respectively) were produced by the genome editing technology using the CRISPR/Cas9 system. Body weight of Nox4KO was greater than that of SHRSP at 12 weeks old or later. BP at 12 weeks was elevated in Nox4KO while reduced in Nox2KO when compared with SHRSP. Stroke latency under salt-loading with 1% salt solution was longer in Nox2KO than in SHRSP. [Conclusion] Genetic deletion of Nox2 and Nox4 affected BP and stroke latency in SHRSP. However, as the effects were rather small, Nox2 and 4 might not be major contributors to the development of cardiovascular diseases in SHRSP.