

Researchers find kidney gene may play role in blood pressure control

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Researchers at the University of Cincinnati (UC) have found that a gene abundant in the kidneys may actually play a role in the regulation of blood pressure and hypertension in experimental mouse models.

The study led by Manoocher Soleimani, MD, James F. Heady Professor of Medicine and associate chair of research in the Department of Internal Medicine at UC, was presented during the annual meeting of the American Society of Nephrology, held Friday, Nov. 15, 2014, in Philadelphia.

The gene, a kidney androgen-regulated protein (KAP) that is abundantly and exclusively found in the kidney proximal tubule, is stimulated by an androgen hormone such as testosterone, says Soleimani.

The function of KAP in the kidney remains unknown, but in an attempt to investigate the gene's role, researchers studied mice developed with a deficiency of the KAP gene. Those mice were compared to a control group of mice.

"The KAP deficient mice displayed significantly reduced blood pressure," says Soleimani. "Placing the animals on a high salt diet for 14 days led to normalization of blood pressure in the KAP deficient mice without significantly affecting the control group. These results have significant ramifications."

Soleimani said the results may be helpful in understanding ways to

control [high blood pressure](#) in humans, specifically in men. About 67 million Americans—or one in every three adults—have high blood pressure, according to the Centers for Disease Control and Prevention.

"It is well known that men are more prone to develop hypertension than women, specifically before the age of 50," says Soleimani. "While this has correlated with higher testosterone levels in men, the exact association between male hormones and hypertension remains unknown. Our results suggests that KAP, which is regulated by testosterone plays an important role in systemic [blood pressure](#) in male animals through regulation of salt absorption in the kidney tubule."

"Our findings also nicely explain the historical observations which have demonstrated [male sex hormones](#) contribute to the worsening of [hypertension](#)."

Provided by University of Cincinnati

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