

Scientists find new RNA class in kidneys is linked to hypertension

October 6 2017



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Researchers from the University of Toledo (Ohio) College of Medicine and Life Sciences have discovered more than 12,000 different types of noncoding RNA (circRNAs) in the kidney tissue of rats. This type of genetic material, previously thought to have no function, may play a significant role in regulating blood pressure in heart and kidney disease.

The article, published in *Physiological Genomics*, was chosen as an APSselect article for October.

CircRNAs are molecules that—unlike RNA that build proteins through genetic coding—do not encode proteins. Scientists have discovered thousands of different circRNA in mammals and have made associations between certain circRNA and conditions such as cancer and neurological disease. In addition, "rat models of cardiovascular and renal diseases suggest that noncoding genomic regions [such as circRNAs] are associated with genetically complex diseases such as hypertension," the researchers wrote.

The research team analyzed [kidney tissue](#) in multiple rat strains, including those predisposed to and resistant to [high blood pressure](#), to determine if circRNAs are a factor in hypertension. They found differences in the way many circRNAs in the kidneys expressed themselves in rats with hypertension compared to animals with normal [blood pressure](#). The results "serve as a basis to further explore the role of these newly characterized circRNAs in cardiovascular and renal diseases in general and hypertension in particular," the researchers wrote.

The paper, "Circular RNAs in rat models of cardiovascular and renal diseases," is published in *Physiological Genomics*.

More information: Xi Cheng et al. Circular RNAs in rat models of cardiovascular and renal diseases, *Physiological Genomics* (2017). [DOI: 10.1152/physiolgenomics.00064.2017](https://doi.org/10.1152/physiolgenomics.00064.2017)

Provided by American Physiological Society

Citation: Scientists find new RNA class in kidneys is linked to hypertension (2017, October 6)

retrieved 24 April 2024 from

<https://medicalxpress.com/news/2017-10-scientists-rna-class-kidneys-linked.html>

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