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Publication(s)

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External Link(s)

• From the lab of Dr. Conrad Phillip Hodgkinson
• From the lab of Dr. Victor J. Dzau
• Victor J. Dzau, M.D. (U.S. News & World Report, 2022)

Blood pressure control by gene editing

Unmet Need

The World Health Organization estimates that high blood pressure (hypertension) results in approximately 9 million annual deaths worldwide. Currently available drugs used to control blood pressure can be effective but are limited by patient compliance, duration, side effects, and price. Thus, there is a critical need for novel approaches to permanently treat and reduce hypertension.

Technology

Duke inventors have developed a method to reduce blood pressure by gene editing. This is intended to be used to treat cardiovascular disease, including hypertension. Specifically, this method utilized CRISPR-Cas9 to target the Renin-Angiotensin system. Application of the technology in animal models prevented the development of hypertension and reduced blood pressure in hypertensive rats. Reductions in blood pressure were sustained for greater than one year and the technology may provide lifelong control of human hypertension.

Advantages

- Permanent solution to hypertension
- Efficacy not limited by patient compliance
- One time cost