Novel Hemoglobin Peptide For Treatment of Cardiovascular Disease

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Hypertension

- High blood pressure (HBP) affects ~75 million adults in America (1 in 3) and is potentiated by lack of nitric oxide (NO) bioavailability.
- HBP costs the US ~$48 billion/year including health care services, medication and missed days of work.
- Clinical Problem:
  - Global incidence is expected to increase due to changing lifestyle and an aging population.
  - Many drugs have serious side effects and only 54% of people with HBP have the disease under control, indicating the need for better treatment options.
Hbα X as a Novel Therapeutic for HBP

- Solution: Researchers at the University of Virginia have synthesized a hemoglobin α mimetic peptide (Hbα X), which induces natural NO release by disrupting the newly discovered NO/Hbα complex.

- Ultimately, this leads to vasodilation in resistance arteries and reduces Angiotensin II induced hypertension in mice.

- Hbα X has potential to be more potent, longer lasting and less toxic than most current hypertension drugs.
Hbα X Reduces Hyperconstriction in Treatment Resistant Hypertension Patients

Treatment resistant hypertension: >3 anti-hypertensive drugs, but patients continue to have HBP

- Resistance arterioles isolated from voluntary adipose tissue biopsy.
Every other day 5 mg/kg of HbaX peptide (same concentration of control peptide) or saline control was injected and blood toxicities were measured—no toxic effects observed.
Relevant Publications

Intellectual Property

- UVA Tech ID: ISAKSON-HEMO
  - Title: Compositions and methods for regulating arterial tone