

Novel Hemoglobin Peptide For Treatment of Cardiovascular Disease

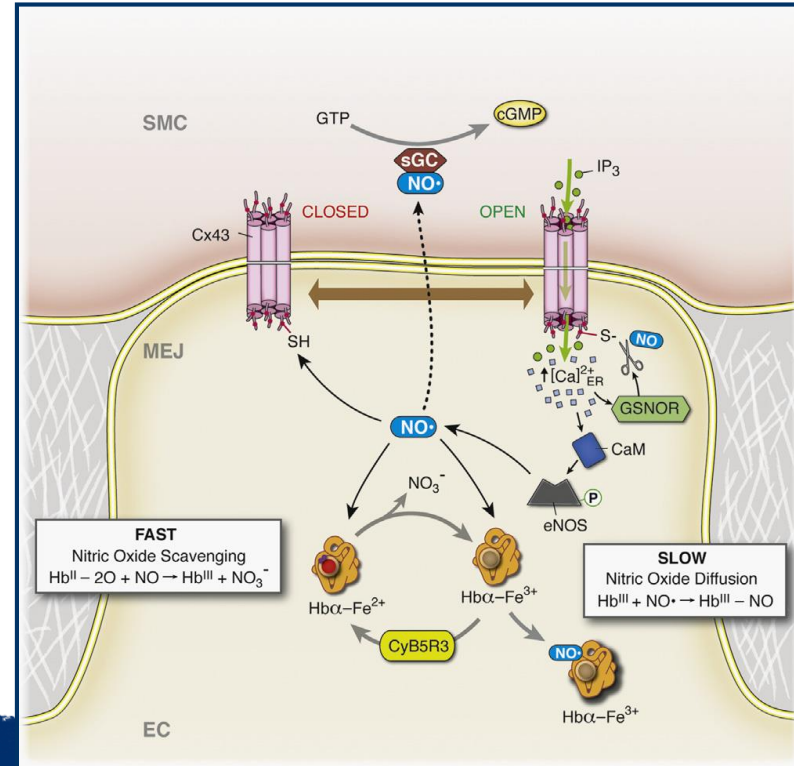
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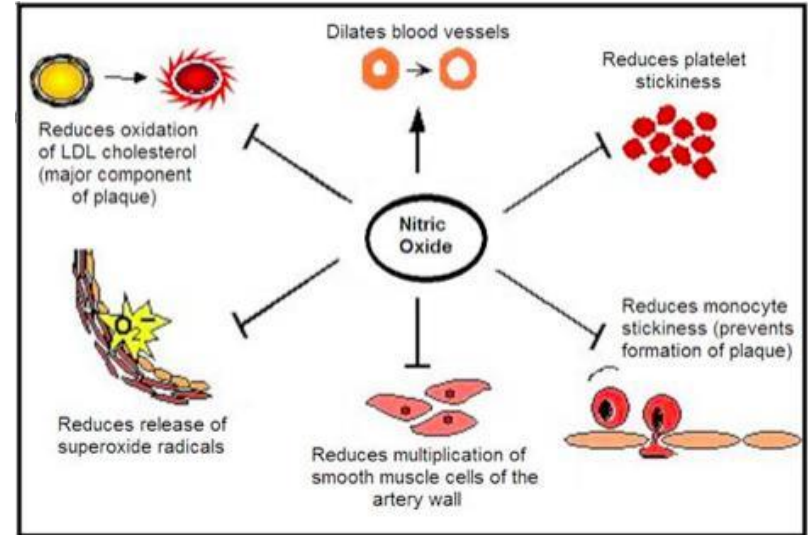
Hypertension

- 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.

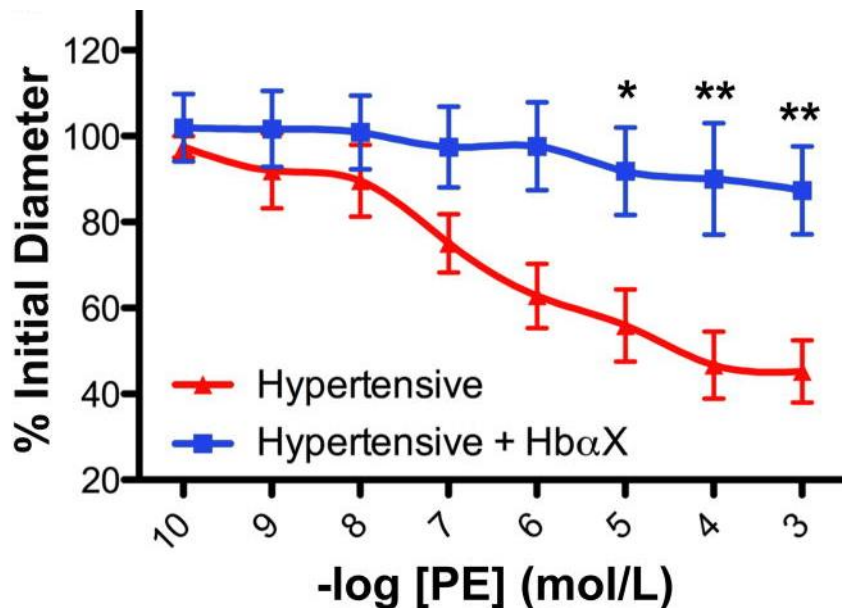


Hb α X as a Novel Therapeutic for HBP

- **Solution:** Researchers at the University of Virginia have synthesized a hemoglobin α mimetic peptide (Hb α X), which induces natural NO release by disrupting the newly discovered NO/Hb α complex.
- Ultimately, this leads to vasodilation in resistance arteries and reduces Angiotensin II induced hypertension in mice.
- Hb α X has potential to be more potent, longer lasting and less toxic than most current hypertension drugs



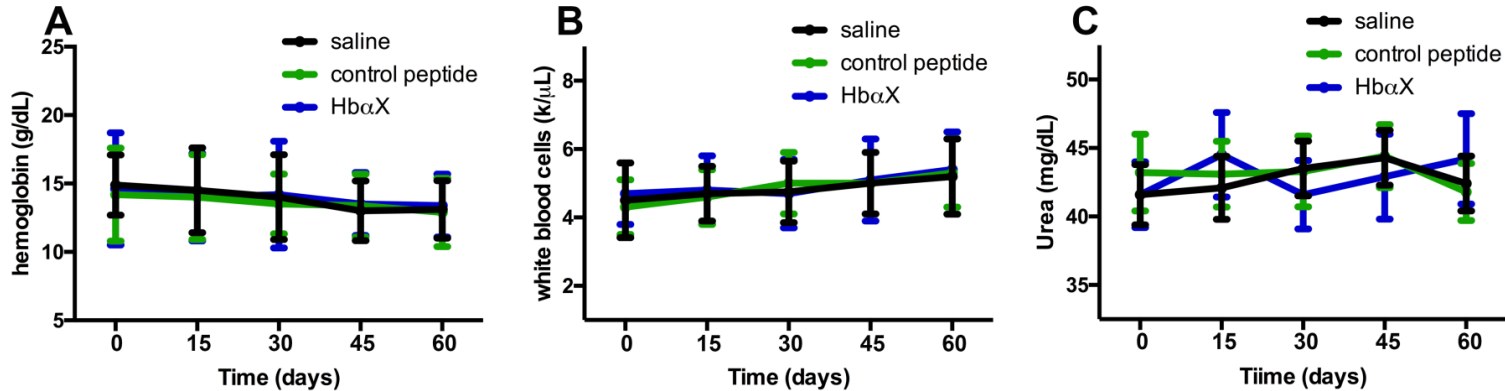
Hb α X Reduces Hyperconstriction in Treatment Resistant Hypertension Patients



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

- Resistance arterioles isolated from voluntary adipose tissue biopsy.

Hb α X Has No Observed Toxicity



Every other day 5 mg/kg of Hb α X peptide (same concentration of control peptide) or saline control was injected and blood toxicities were measured—no toxic effects observed.

Relevant Publications

- Hypertension. 2016 Dec;68(6):1494-1503. **Keller TC 4th**, et. al.
- Arterioscler Thromb Vasc Biol. 2014 Dec;34(12):2594-600. **Straub AC** et. al.
- Free Radic Biol Med. 2014 Aug;73:136-42. **Butcher JT** et. al.
- Nature. 2012 Nov;491(7424):473-7. **Straub AC**. et. al.

Intellectual Property

- UVA Tech ID: ISAKSON-HEMO
 - Title: Compositions and methods for regulating arterial tone
 - Issued U.S. Patent: 9,701,714 B2 Jul. 11, 2017