miR93 for the treatment of peripheral arterial disease (PAD)

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Peripheral artery disease (PAD)

- Peripheral arterial disease (PAD), or a narrowing or blockage of the blood vessels in the extremities, affects 8-12 million adults in the U.S.
- $4 billion spent annually on PAD-related treatment.

Clinical Problem:
- As the population ages, the prevalence of PAD is expected to increase exponentially.
- Current treatments are mostly limited to either lifestyle changes to slow disease progression or (often invasive) surgeries and there is no definitive medical therapy to improve perfusion in the ischemic limb.
Solution: Researchers at the University of Virginia have identified a micro-RNA, miR93, that plays a significant role in tissue adaption to ischemia and adaptive angiogenesis in PAD

- miR93 has the ability to modulate both endothelial and myocyte survival and promote angiogenesis
- Novel strategy for the treatment of PAD
miR93 treatment shows improved perfusion recovery

Premicro-RNA 93 treated mice showed significantly improved perfusion recovery compared with scramble-treated mice at day 14 and day 21 after hind leg ischemia (HLI).
miR93 treatment shows significantly higher capillary density

At day 21 after HLI, ischemic gastrocnemius muscle from premicro-RNA 93–treated mice showed significantly higher capillary density than scramble-treated mice.
Relevant Publications


Intellectual Property

- US 9,845,465 B2, issued 12/19/17
- EP Application No 13829411.1
  - Intention to grant is imminent
  - Amendments for allowed claims filed 1/3/18

Title: Compositions and methods for treating peripheral arterial disease