

# Customizable Multi-Branched Stent Graft to Treat Type IV Thoracoabdominal Aortic Disease [LAB0157]

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## Background

- The prevalence of aortic aneurysms is estimated to exceed **3% of individuals over the age of 65** and complications from aortic aneurysms cause approximately **15,000 deaths annually** in the U.S.
- A thoracoabdominal aortic aneurysm (TAAA) is a bulging and weakness of the wall in the portion of the aorta that extends from the chest into the abdomen. Specifically, a Type IV TAAA occurs in the abdominal aorta below the diaphragm.
- Given the complex anatomy associated with the area, repair of Type IV TAAAs is complicated. The goal of treatment is to address both affected and surrounding vessels during the repair while minimizing end-organ ischemia.
- **Commercially available devices cannot reproducibly treat Type IV TAAAs** due to the complexities of each patient's anatomy.
- A customizable stent graft that can be tailored to each patient's unique anatomy would provide a new treatment option for patients who cannot be treated with available devices or are ineligible for open surgical repair.

## Innovation

- Dr. Rodney White, a Lundquist Institute investigator and vascular surgeon at the Harbor-UCLA Medical Center, has developed **branched stent grafts that can be customized for each patient** using an in-line mandrel.
- The formed stent graft is delivered using a catheter delivery system.
- The device and method allow for patient-specific stent grafts **based on individual anatomy** obtained by medical imaging.
- The mandrel is used to support and align the device parts during stent fabrication. The size of the mandrel itself can be customized to form stents of desired shapes and diameters.
- Stage of development: The device and method will be tested in a Phase I clinical trial.

## Advantage

- Customized to each patient's unique anatomy
- Provides an endovascular alternative to open surgical repair
- Has been developed to treat type IV TAAAs but **can be configured to treat complex aneurysms in any region of the aorta** and its major branches

## Applications

- Patient-specific treatment of type IV TAAAs and other aortic aneurysms

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## IP Status

- U.S. Patent Application US 16/606,695 – pending