



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Bioengineering

The Human Acellular Vessel for Vascular Repair in Injured Extremities

Researchers from Humacyte, Inc. have developed a human tissue-engineered vascular prosthetic called the Human Acellular Vessel (HAV). The HAV was designed to improve long term patency and drastically reduced rates of infection. HAV is a small, acellular graft made of proteins grown from cultured human cells. The HAV transforms into a fully functioning vessel by recruiting the patient's own stem cells to replicate host vessel structure and function within four to six weeks. It can be stored at 4 degrees Celsius for use at the point of care, making it amenable to deployment as far forward as Required Operational Capability (ROC) levels two and three.

The current development strategy aims to obtain a primary indication for hemodialysis - a therapeutic area with a clear unmet need and a suboptimal standard of care. Humacyte is conducting a phase two clinical trial at six centers—Johns Hopkins University and University of Maryland Shock Trauma (Baltimore, MD), Grady Memorial Hospital (Atlanta, GA), Rocky Mountain Regional Trauma Center (Denver, CO), Rutgers University (Camden, NJ), and Ryder Trauma Center (Miami, FL). Up to 20 vascular trauma subjects are currently enrolled in the study.

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