



THE UNIVERSITY of TEXAS

HEALTH SCIENCE CENTER AT HOUSTON

Office of Technology Management

HEAT TREATMENT OF INFLAMMED TISSUE

Market: Coronary artery disease is a leading cause of death in industrialized countries. It is manifested by atherosclerotic plaques, which are thickened areas in vessel walls made up of an accumulation of cholesterol, proliferating smooth muscle cells and inflammatory cells. In 2004, it was reported that over 1 million Americans underwent an angioplasty procedure to correct the build up of these plaques, contributing partly to interventional cardiology market revenue in excess of \$4 billion.

Competitors and Current Problems: Many techniques have been developed to identify and remove those plaques which are most likely to rupture because of inflammation, including atherectomy devices, laser and thermal ablative devices and stents. Frequently, however, these procedures cause injury to the overall vessel wall and cause blood clots and disruption of the plaque core during restoration of the vessel, resulting in restenosis, or the reclosure of a previously opened coronary vessel.

The Technology: Researchers at the University of Texas Health Science Center at Houston (UTHSC-H) and the Texas Heart Institute have developed and have available for license a portfolio of devices, methods and applications used to treat inflammation in body tissues and in particular to treat inflamed atherosclerotic plaques. The methods can be used to decrease or eliminate inflammation in a plaque to prevent rupture and thus heart attacks and strokes. A heat detecting probe is used to identify areas that are significantly hotter than the rest of the artery. Heat is then directed into that region of inflamed tissue by a heat delivering catheter or stent, resulting in apoptosis of inflammatory cells that are causing the plaque inflammation. Heating is achieved by using, for example, infrared, radiofrequency or ultrasound radiation. The technology allows for direct identification and treatment of vessel walls so as not to damage the vessel wall or disrupt the plaque itself, as well as allows for providing a means of inhibiting or regressing in-stent restenosis. This regression is a fundamental advantage over other diagnostics and treatments currently available, including angiography.

NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSC-H), for which the University has obtained patent protection.

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Inventors: Casscells, Willerson, Naghavi, et.al.

Patent Status: United States Issued Patent Nos.: 5,906,636; 6,451,044; 7,123,968.

License Available: world-wide; exclusive or non-exclusive

To obtain further information about this technology, please contact:
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