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Ra Medical Systems Granted Broad Patent for DABRA Catheter for Cardiovascular Disease Treatment

Catheter's Liquid Fill with Solid Window Surface Provides Improved Tissue Removal, Contributing to DABRA's 95 Percent Success Rate

CARLSBAD, Calif.--(BUSINESS WIRE)-- [Ra Medical Systems](#), makers of excimer lasers and catheters for cardiovascular and dermatological diseases, today announced that the United States Patent and Trademark Office (USPTO) has granted the Company a broad patent (No. [9700655](#)) that covers Ra Medical Systems' DABRA™ catheter for cardiovascular disease treatment. The patent was granted on July 11, 2017, and assigned to Ra Medical Systems. The inventors include Ra Medical Systems Director of Research and Development, Dr. James Laudenslager, and CEO / CTO, Dean Irwin. DABRA recently received FDA market clearance and is now available in the U.S. and Europe.

The patent, which covers DABRA's "small flexible liquid core catheter for laser ablation in body lumens and methods for use," is pivotal for Ra Medical Systems' intellectual property, as it provides wide-ranging patent protection for the DABRA catheter. The DABRA catheter uses a liquid fill with a solid window that shows improved tissue removal, compared to other multi-fiber excimer catheters that have a high percentage of dead space. This improved performance contributes to DABRA's high success rate and low adverse event rate.

"This invention is a game-changer for excimer laser ablation, as DABRA's flexible liquid catheter delivers fast, complete ablation of all types of plaque, without the dead space of fiber optic bundle catheters," said Dr. Laudenslager. "Through producing a high-quality lumen and minimizing trauma to the vasculature, DABRA is revolutionizing cardiovascular treatment and helping to save patients' lives and limbs every day. Most importantly, this patent solidifies Ra Medical Systems' position as an innovative, paradigm-shifting leader in treating vascular disease."

Dr. Laudenslager is a pioneer in excimer laser scientific research, one of the founding fathers of the medical excimer laser industry and a visionary in excimer lasers for cardiovascular therapy. He holds five major patents in excimer lasers and was a co-founder of Advanced Interventional System that received the first FDA clearance for excimer laser atherectomy using a multiple-fiber approach. Since joining Ra Medical Systems, Dr. Laudenslager has led the effort to develop a family of liquid-filled laser ablation catheters and, together with Dean Irwin, has many more patents pending in the U.S. and internationally.

"This patent is a major milestone not only for Ra Medical Systems but also for patients all over the world and the medical community at large," added Irwin. "DABRA will fundamentally change the way that arterial blockages are treated. It is a better, safer, faster and less-

expensive option to other treatments that are currently on the market and is meeting an important unmet patient need.”

DABRA (Destruction of Arteriosclerotic Blockages by Laser Radiation Ablation) treats Peripheral Artery Disease (PAD), the leading cause of limb amputations. The device has shown shorter procedure times, is less expensive and has an impressive safety profile. DABRA may also reduce the costs that are associated with treating PAD and ultimately lead to greater patient access to, and success with, interventional procedures instead of limb amputation.

About Ra Medical Systems

Ra Medical Systems was founded in 2002 to commercialize excimer lasers and catheters for the treatment of dermatologic and cardiovascular diseases. Its flagship product, Pharos, launched in 2004 and revolutionized the dermatology world with its technology and affordable business model for greater patient access to treatment. Today, Ra Medical Systems continues to make history as DABRA transforms endovascular therapy, saving patients’ limbs and lives.

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