



Particle Sciences Partners with Encube Ethicals to Develop Novel Vaginal Rings

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News Release

CLEVELAND, January 31, 2019 – The Lubrizol Corporation announces its contract development and manufacturing organization (CDMO), Particle Sciences, a Lubrizol LifeSciences company, is partnering with leading Indian contract manufacturing organization (CMO), Encube Ethicals.

Under the partnership, the two companies will develop innovative intravaginal rings with the intent to out-license to biopharmaceutical marketing partners. The partnership will focus on rings for the administration of existing approved drugs, improving drug effectiveness and patient compliance. The use of drug-eluting devices to provide sustained-release dosage forms has seen continued growth due to the ability to provide constant, localized, site-specific drug delivery. The market continues to be of interest as these devices can improve patient compliance, one of the greatest challenges in healthcare today.

Both parties will leverage each other's drug development and manufacturing strengths. Particle Sciences brings its proven track record and extensive expertise in the development and manufacturing of intravaginal ring devices and complex formulations to the partnership. Encube Ethicals will offer its strong capabilities in developing complex topical and transdermal delivery systems, with two decades of experience in commercial manufacturing of topical products for a variety of markets, including women's health for multiple countries.

The project is Particle Sciences' latest in the complex generics space using the 505(b)(2) US Food and Drug Administration (FDA) regulatory pathway to develop new drugs that better meet the requirements of patients and physicians. Dr. Barbara Morgan, general manager of Particle Sciences states: "Our collaboration with Encube Ethicals is an important step in our work on complex pharmaceuticals and particularly toward our efforts to accelerate improved therapeutics through the use of the 505(b)(2) pathway."

Mr. Mehul Shah, founder and managing director of Encube Ethicals comments: "We are deeply invested in finding innovative ways to deliver drugs that make the patient's experience significantly better and safer. We hope to leverage Encube's experience in topical products development and manufacturing to bring impactful breakthrough innovations to the market. We are delighted to partner with Particle Sciences' extremely talented team and excited to see the possibilities the effort creates."

About Particle Sciences

Particle Sciences, a Lubrizol LifeSciences company, is an integrated provider of drug development services. Particle Sciences focuses on BCS II/III/IV molecules, biologics and highly potent compounds through a variety of technologies including emulsions, gels, micro and nano-particulates, drug/device combination products, solid solutions and others. Particle Sciences is FDA registered and DEA licensed. Through a full range of formulation, analytic and manufacturing services, Particle Sciences provides pharmaceutical companies with a complete and seamless development solution that minimizes the time and risk between discovery and the clinic. The company was founded in 1991 and is headquartered in Bethlehem,

Pennsylvania.

About Encube Ethicals

Encube is an integrated pharmaceutical organization focusing on Topical, Transdermal and Complex delivery solutions that impact millions of lives around the world. Founded in 1998 by Mr. Mehul Shah, Encube has business verticals in contract services (CDMO), generic ANDA development and commercialization, and an innovative 505(b)(2) pipeline for the US market. Encube operates one of the largest manufacturing facilities for Topical prescription products in the world with 350 million units of capacity located at Goa and a large 120+ scientist R&D center in Mumbai.

About Lubrizol LifeSciences

Lubrizol LifeSciences is a preferred Contract Development and Manufacturing Organization (CDMO) partner for complex pharmaceuticals and high-end medical devices providing differentiated polymers and excipients, along with state-of-the-art design, development and manufacturing services to the healthcare industry.

About The Lubrizol Corporation

The Lubrizol Corporation, a Berkshire Hathaway company, is a market-driven global company that combines complex, specialty chemicals to optimize the quality, performance and value of customers' products while reducing their environmental impact. It is a leader at combining market insights with chemistry and application capabilities to deliver valuable solutions to customers in the global transportation, industrial and consumer markets. Lubrizol improves lives by acting as an essential partner in our customers' success, delivering efficiency, reliability or wellness to their end users. Technologies include lubricant additives for engine oils, driveline and other transportation-related fluids, industrial lubricants, as well as additives for gasoline and diesel fuel. In addition, Lubrizol makes ingredients and additives for home care, personal care and skin care products and specialty materials encompassing polymer and coatings technologies, along with polymer-based pharmaceutical and medical device solutions.

With headquarters in Wickliffe, Ohio, Lubrizol owns and operates manufacturing facilities in 17 countries, as well as sales and technical offices around the world. Founded in 1928, Lubrizol has approximately 8,700 employees worldwide. Revenues for 2017 were \$6.3 billion. For more information, visit Lubrizol.com.

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