NASA technology to help develop noninvasive medical treatments

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NASA has signed two patent license agreements with GRoK Technologies LLC of Houston to help develop novel biotechnology approaches that could have multiple applications in space and on Earth. The agreements are the results of the agency's Technology Transfer Program, which helps opens up NASA's research and technology to the public for use and development.

The agreements grant rights for four patented technologies invented by NASA and GRoK scientists. NASA is interested in the potential these technologies present for regenerating bone and muscle. During long spaceflights, astronauts are susceptible to developing osteopenia, which is a condition arising from the loss of bone and muscle mass and bone density. The patented technologies could help GRoK develop breakthrough products for the research and medical communities and advance our overall understanding of biomedicine.

"Biotechnology research taking place on the International Space Station and at NASA centers around the country continues to push the leading edge of science," said Yolanda Marshall, director of the Strategic Opportunities and Partnership Development Office at NASA's Johnson Space Center in Houston. "This partnership will further enhance NASA's ability to share the unique breakthroughs made in space-based research."

GRoK will be able to use these patented methods on two platform technologies the company is developing.

The first platform, called BioReplicates, will allow users to create 3-D human tissue models that can be used to test cosmetics, drugs and other products for safety, efficacy and toxicity with greater accuracy, reliability and cost-efficiency. Additionally, using such models may reduce the industry's reliance on animal testing.

The second platform, called Scionic, could lead to the development of medical devices designed to target musculoskeletal pain and inflammation in humans and animals noninvasively and without the use of pharmaceuticals.

"The GRoK team is delighted we are now a NASA licensee with the opportunity to bring forward into the commercial sector technologies that have the capacity to improve the lives of people everywhere," said Moshe Kushman, GRoK's founder and CEO. "It's not just science fiction anymore. All indications are that 21st century life sciences will change dramatically during the next several decades, and GRoK is working to define the forefront of a new scientific wave."

Provided by NASA