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CWRU and Haima Therapeutics LLC sign option license to develop SynthoPlate

By Lydia Coutré

Case Western Reserve University and Cleveland-based biotechnology company Haima Therapeutics LLC have signed a two-year option to license a technology to prevent and treat bleeding complications from trauma, low platelet counts and surgery, according to a news release.

The agreement, managed through CWRU's Technology Transfer Office, will allow for pre-clinical testing of the hemostatic nanotechnology, called SynthoPlate. This includes safety profiling and feasibility of scaled up manufacturing.

At least 2 million units of platelets are transfused annually in the United States, and can suffer from many issues, such as limited supply, short shelf life, minimal portability, the need for blood typing/matching and potentially severe biologic side effects.

To address these issues, Anirban Sen Gupta, a professor in CWRU's Department of Biomedical Engineering, has worked to develop synthetic nanoparticles that can mimic platelets' abilities to clot at the site of a bleeding injury, according to the release.

Injected intravenously, these nanoparticles can potentially act as a surrogate to prevent or treat bleeding when natural platelet products are unavailable. They could reduce the need for donor platelet transfusion, according to the release.

"Outside of large blood banks and trauma centers, platelet products are rarely available. It is an even bigger challenge to get donor platelets to our military in the field where heavy bleeding injuries are frequent," Sen Gupta said in a prepared statement. "Our nanoparticle technology can be used in civilian and military scenarios of traumatic non-compressible bleeding where donor platelets are not readily available. This has been the motivation behind the research on platelet surrogates in my laboratory, and SynthoPlate is a technology that stemmed from it."

Lab testing and proof-of-concept studies in small and large animals have been funded by the Case-Coulter Translational Research Partnership, Council to Advance Human Health, Ohio Third Frontier Technology Validation and Start-up Fund and the National Institutes of Health's Center for Accelerated Innovation, according to the release. Additional studies evaluating hemostatic effect and safety are ongoing in trauma models and are funded by the U.S. Department of Defense.

"We are excited to work with Dr. Sen Gupta to advance this highly promising technology toward the clinic," said Christa Pawlowski, co-founder and chief scientific officer at Haima Therapeutics, in a prepared statement. "Our goal is to provide a product that can address the real, unmet needs of patients with bleeding complications."

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