Research identifies potential therapeutic treatment for monkeypox

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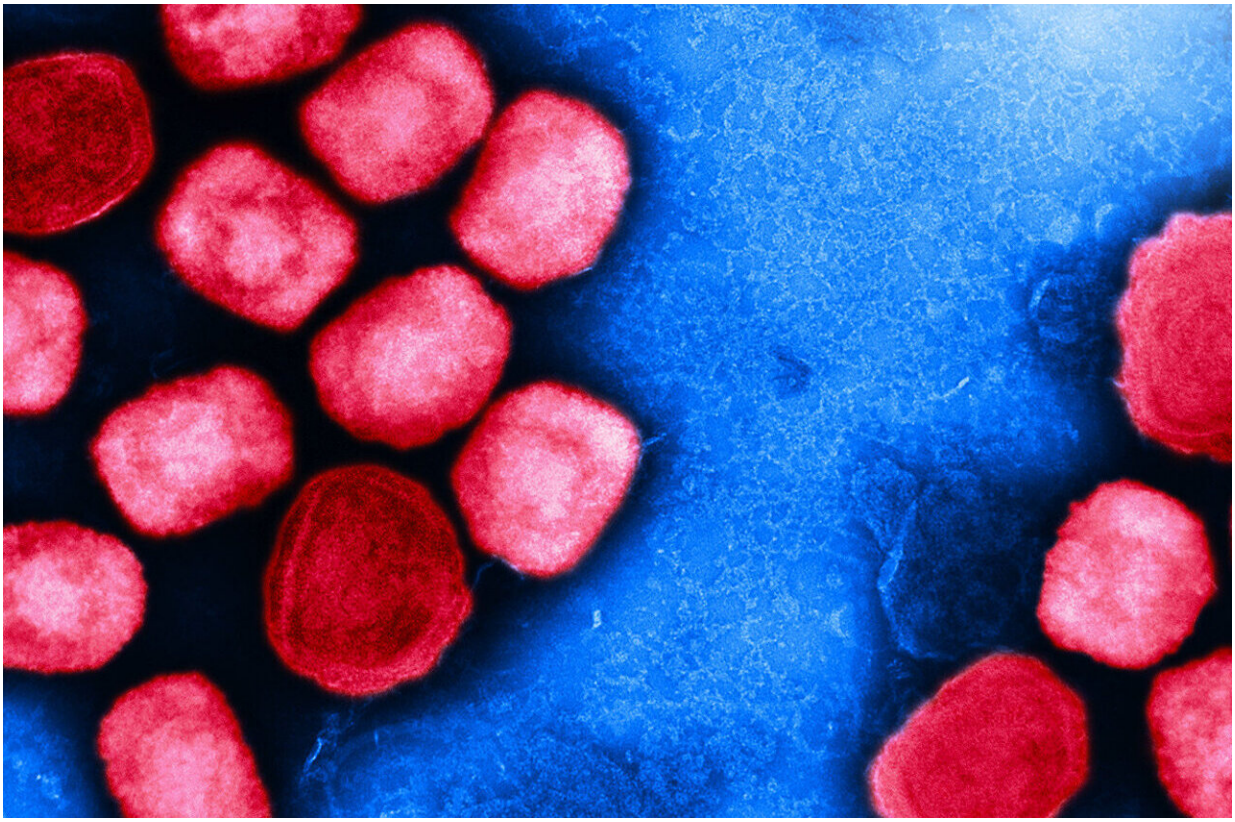

Colorized transmission electron micrograph of mpox virus particles (red) cultivated and purified from cell culture. Image captured at the NIAID Integrated Research Facility (IRF) in Fort Detrick, Maryland. Credit: NIAID

Scientists at Rensselaer Polytechnic Institute (RPI), through biomolecular research and testing, have discovered a potential topical

therapeutic to treat monkeypox. The research stems from years of study spent on investigating the structures of viruses such as zika, Dengue, herpes, coronaviruses, and hepatitis. The past research and expertise in the interaction of virus proteins and polysaccharides, including existing drugs, aided researchers in the rapid discovery of a potential therapeutic. The work is in its early stages; however, the researchers believe that because the drugs used in the work are FDA-approved, there would be a rapid pathway for clinical testing and potential approval as a monkeypox therapy. This timely research has been published in *Molecules* recently.

"In the past three years, viral diseases have taken on a new urgency and focus in research and development with COVID-19 raising the profile of the power and complexities of viruses," said Fuming Zhang, Senior Research Scientist in the Shirley Ann Jackson, Ph.D. Center for Biotechnology and Interdisciplinary Studies (CBIS). "For years, researchers at RPI have looked at the structure of viruses and the interaction of different virus proteins with their human cellular targets. This experience led us to our discovery of this potential topical treatment." Dr. Zhang was joined in this work by Robert Linhardt, a recently retired Constellation Professor of Chemistry and Chemical Biology, and Jonathan Dordick, Institute Professor of Chemical and Biological Engineering.

"RPI's vast research capabilities are changing and impacting the world around us," said Deepak Vashishth, Director of the CBIS. "This discovery demonstrates RPI's role as one of the top research universities in the world and the value and power of basic research at the interface of science and engineering in identifying solutions that impact society."

More information: Shi, D.; He, P.; Song, Y.; Cheng, S.; Linhardt, R.J.; Dordick, J.S.; Chi, L.; Zhang, F. Kinetic and Structural Aspects of Glycosaminoglycan–Monkeypox Virus Protein A29 Interactions Using Surface Plasmon Resonance. *Molecules* 2022, 27, 5898.

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