



News

17 September, 2020

SWOSU Professor Publishes Paper on Remdesivir

Southwestern Oklahoma State University Assistant Professor Dr. Andrew N. Bigley has published a paper in the peer reviewed and internationally respected journal *Biochemistry* concerning one of the only proven medications for COVID-19—Remdesivir.

Bigley is a professor in the SWOSU Department of Chemistry and Physics in Weatherford.

His work was done in the laboratory of Frank M. Raushel at Texas A & M University. Bigley was the lead researcher in the lab working on the project.

Bigley said Remdesivir is the only treatment approved by the FDA that actually attacks the COVID virus. All other treatments just try to help a body fight the virus. Remdesivir is what is known as a chiral molecule, which means it has a handedness, as in left hand or right hand. The drug on the market is only the left-handed version because making the right-handed version is very difficult using normal chemistry.

According to Bigley, the left hand vs right hand does not affect how the drug works, but it affects where in the body it can reach. In the case of COVID where the virus affects the whole body, having the right hand and left hand versions might make Remdesivir more effective at fighting COVID.

“In our work, we were able to overcome the problem of making the right hand version of Remdesivir by using enzymes we evolved in the lab,” Bigley said. “When we coupled our enzyme approach to the typical chemical strategies, we were able to develop a simple method to get the pure right hand version of Remdesivir.”

His paper is entitled: A chemoenzymatic Synthesis of the (Rp)-isomer of the Antiviral Prodrug Remdesivir.” (Biochemistry 2020 doi: 10.1021/acs.biochem.0c00591)

