BIOMEDICAL RESEARCH
Information on Federal Contributions to Remdesivir

What GAO Found
Between 2013 and 2020, the Centers for Disease Control and Prevention (CDC), the Department of Defense (DOD), and the National Institutes of Health (NIH) conducted and funded preclinical research collaborations with Gilead Sciences, Inc. (Gilead) that helped to demonstrate remdesivir’s antiviral properties against multiple viruses. NIH also funded three clinical trials. (See figure for examples of federal support.) Between 2009 and 2013, Gilead had synthesized the remdesivir compound, conducted and funded preclinical research that first identified and confirmed the antiviral activity of remdesivir and its parent compound against coronaviruses and other viruses, and had begun patenting the compounds. As of December 2020, federal funding for preclinical studies and clinical trials involving remdesivir totaled about $162 million, as follows:

- $0.7 million for CDC’s preclinical research;
- $39.7 million for DOD’s preclinical research;
- $11.9 million for preclinical research conducted by NIH and NIH-funded universities; and
- $109.2 million for NIH-funded clinical trials.

Federally supported remdesivir research conducted by CDC, DOD, NIH, and NIH-funded universities has not resulted in government patent rights, because, according to agency and university officials, federal contributions to the research did not generate new inventions. In addition, Gilead entered research collaborations with federal agencies and universities with a portfolio of existing patents and patent applications, including for the remdesivir compound, which would have left little room for the agencies to generate their own patents. For example, DOD officials told us that when DOD scientists performed antiviral testing of remdesivir against Ebola virus, they used standard tests and screening methods and did not come up with new tests or methods.

| Figure: Examples of Federal Involvement in the Development of Remdesivir, 2013-2020 |
|---------------------------------|---------------------------------|---------------------------------|
| NIH funded universities, in collaboration with Gilead, begin antiviral testing of remdesivir for coronaviruses | NIH, in collaboration with Gilead, begins antiviral testing of remdesivir for coronaviruses and other viruses | NIH funds a multi-stage clinical trial of remdesivir for COVID-19 |
| Gilead synthesizes and begins patenting remdesivir | CDC and DOD, in collaboration with Gilead, begin antiviral testing of remdesivir for Ebola and other viruses | NIH begins funding Ebola clinical trials involving remdesivir |

Source: GAO analysis of information from the Centers for Disease Control and Prevention (CDC), Department of Defense (DOD), Gilead Sciences (Gilead), and the National Institutes of Health (NIH). | GAO-21-272