July 1, 2021 Acurx Pharmaceuticals

Acurx Announces New Ibezapolstat Data on Anti-Recurrence Mechanisms in CDI at Prominent International Conference

- Ibezapolstat, the first of a novel class of antibiotics, DNA polymerase IIIC inhibitors, is currently commencing a Phase 2b clinical trial in patients with CDI

- Using samples from Phase 1 healthy volunteers and a novel OMICS analysis approach, ibezapolstat differed favorably from vancomycin in microbiota abundance including a marked increase in Proteobacteria and Fusobacterium and concentration of primary bile acids

- These results form the basis for our scientific advisors to predict an anti-recurrence effect for ibezapolstat in future CDI trials

STATEN ISLAND, N.Y., July 1, 2021 /PRNewswire/ -- Acurx Pharmaceuticals, Inc. (Nasdaq ACXP) ("Acurx" or the "Company"), a clinical stage biopharmaceutical company developing a new class of antibiotics for difficult-to-treat bacterial infections, announced today that using specimens from a Phase 1 healthy volunteer trial and a novel analysis technique, beneficial changes potentially predictive of lower risk of CDI *(Clostridioides difficile* Infection) recurrence were associated with ibezapolstat compared to vancomycin. These results were presented by Dr. Kevin Garey, Professor and Chair, University of Houston College of Pharmacy and the Principal Investigator for microbiome aspects of the clinical trial program for ibezapolstat. The I-Poster and Abstract presented during the World Microbe Forum 2021 virtual conference held June 20-24, 2021 was entitled: *OMICS Evaluation of the Gram-positive Selective Spectrum (GPSS) Antibiotic, ibezapolstat, using Phase 1 Clinical Samples, Predicts a Possible Anti-recurrence Effect in Future Clostridioides difficile Infection Studies.*

This novel OMICS approach which is a comprehensive study to characterize and quantify biological molecules to better understand structure, function and dynamics of an organism or organism community, involved both microbiome analysis using shotgun metagenomics sequencing and determination of bile acid concentrations and may enable better and earlier prediction of anti-CDI recurrence effects for antibiotics in the clinical development pipeline. This hypothesis will be tested in the Phase 2b trial of ibezapolstat in the treatment of patients with CDI. According to Dr. Garey, "Ibezapolstat's unique spectrum of activity targeting low G+C content Gram-positive bacteria, which includes *C. difficile*, spares the important Actinobacteria phylum; while at the same time killing *C. difficile* but not other Firmicutes necessary for maintaining a healthy microbiome." He also stated "Similarly, ibezapolstat's effect on bile acids is dramatically different than that seen with vancomycin and may emerge as another factor that predicts an anti-recurrence effect. Having such potentially predictive

data so early in development could create a new paradigm for CDI drug development."

Robert J. DeLuccia, Executive Chairman of Acurx, stated, "We are very excited by these results showing a very distinctive microbiome signature which enhances the population of Actinobacteria without promoting Proteobacteria overgrowth, suggesting the potential for ibezapolstat to have a "restorative" effect on the microbiome." He further stated that "Additional data from our recently completed Phase 2a clinical trial in CDI patients using the same analytics will be forthcoming and are expected to validate the hypothesis as well as give us further confidence of a successful outcome in our Phase 2b trial planned to start later this year."

About the Study Data and Analysis.
Background*:* Reduction in likelihood of *Clostridioides difficile* infection (CDI) recurrence is an essential endpoint for antibiotics in development for CDI although it is often not evaluated until Phase 3 trials. Advancing knowledge of microbiome, functional metagenomics, and metabolomics may enable predictions of anti-recurrence effects earlier in the drug development process. The purpose of this project was to use an OMICS approach to predict the potential anti-CDI recurrence effect of ibezapolstat, a DNA polymerase IIIC inhibitor in Phase 2 clinical development for the treatment of *C. difficile* infections using clinical stool samples from the Phase 1 healthy volunteer study.
Methods*:* As part of the completed Phase 1 clinical study of ibezapolstat, stool samples were collected daily from healthy volunteers given ten days of ibezapolstat (300 or 450 mg given twice daily) or vancomycin (125 mg given four times daily). Stool samples were evaluated for microbiome and functional metagenomics changes using shotgun metagenomics (Illumina HiSeq) and bile acid concentrations using mass spectroscopy (LC-MS-MS).
Results: Eighteen subjects (female: 33%) aged 30±8 years were enrolled. Baseline microbiota, functional metagenomics, and bile acid concentrations were similar between study groups. Samples from vancomycin-treated patients displayed significant changes in microbiota abundance including a marked increase in Proteobacteria and Fusobacterium, a significantly lower abundance of bile salt biotransformation genes, and a marked increase in primary compared to secondary bile acids. In contrast, samples from ibezapolstat treated patients did not have as profound a shift in the microbiome with the exception of increased proportion of Actinobacteria, and a less marked relative reduction in bile salt biotransformation genes and secondary bile acids.

About *Clostridioides Difficile* Infection (CDI). According to the 2017 Update (published February 2018) of the *Clinical Practice Guidelines for C. difficile Infection by the Infectious Diseases Society of America (IDSA) and Society or Healthcare Epidemiology of America (SHEA),* CDI remains a significant medical problem in hospitals, in long-term care facilities and in the community. *C. difficile* is one of the most common causes of health care-associated infections in U.S. hospitals (Lessa, et al, 2015, New England Journal of Medicine). Recent estimates suggest C. *difficile* approaches 500,000 infections annually in the U.S. and is associated with approximately 20,000 deaths annually. (Guh, 2020, New England Journal of Medicine). Based on internal estimates, the recurrence rate of two of the three antibiotics currently used to treat CDI is between 20% and 40% among approximately 150,000 patients treated. We believe the annual incidence of CDI in the U.S. approaches 600,000 infections and a mortality rate of approximately 9.3%.

About the World Microbe Forum 2021
Microbial scientists convened digitally for a unique gathering covering cutting-edge, interdisciplinary microbial sciences research. The American Society of Microbiology (ASM) and the Federation of European Microbiological Societies (FEMS) came together to launch a new initiative -- the World Microbe Forum, which took place online from June 20-24, 2021 and attracted ~ 6,000 participants from more than 115 countries. ASM and FEMS brought together two of the biggest meetings in the microbial sciences, ASM Microbe 2021 and FEMS2021, under one digital platform to further science and help answer some of the most important questions impacting humankind today. Additional scientific societies, including the American Society for Virology (ASV) and the African Society for Laboratory Medicine (ASLM) were key partners in this event. This conference offered attendees unparalleled access to the latest innovative research across global perspectives.

About Acurx Pharmaceuticals, Inc.
Acurx Pharmaceuticals is a clinical stage biopharmaceutical company focused on developing new antibiotics for difficult to treat infections. The Company's approach is to develop antibiotic candidates that target the DNA polymerase IIIC enzyme and its R&D pipeline includes early stage antibiotic candidates that target other Gram-positive bacteria, including Methicillin-Resistant Staphylococcus aureus (MRSA), Vancomycin-Resistant Enterococcus (VRE) and Penicillin-Resistant Streptococcus pneumoniae (PRSP). For more information, please visit: **www.acurxpharma.com.**

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including, but not limited to, statements regarding the potential of Ibezapolstat, Acurx's future expectations, plans and prospects, including without limitation, Acurx's expectations regarding its growth, strategy, progress and timing of its clinical trials, the potential of its antibiotics, and its intellectual property protection. The use of words such as "may," "might," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "project," "intend," "future," "potential," or "continue," and other similar expressions are intended to identify such forward-looking statements. All such forward-looking statements are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include the possibility that data from clinical trials will be inconsistent with the data observed in subsequent clinical trials, whether ibezapolstat will benefit from the QIDP designation, whether ibezapolstat will advance through the clinical trial process on a timely basis, whether the results of the clinical trials of ibezapolstat will warrant the submission of applications for marketing approval, and if so, whether ibezapolstat will receive approval from the United States Food and Drug Administration or equivalent foreign regulatory agencies where approval is sought, whether, if ibezapolstat obtains approval, it will be successfully distributed and marketed, competition from third parties that are developing products for similar uses, Acurx's ability to obtain, maintain and protect its intellectual property, Acurx's dependence on third parties for development and manufacture of product candidates including to supply any clinical trials, Acurx's ability to manage expenses and to obtain additional funding when needed to support its business activities and establish and maintain strategic business alliances and new business initiatives, and the impacts of public health pandemics such as COVID-19 on business operations including its clinical trials. Additional detailed information concerning a number of the important factors that could cause actual results to differ materially from the forward-

looking information contained in this release is readily available in Acurx's publicly filed Registration Statement on Form S-1 and will also be included in quarterly, annual and other reports. Acurx disclaims any obligation to update developments of these risk factors or to announce publicly any revision to any of the forward-looking statements contained in this release, or to make corrections to reflect future events or developments.

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