

Isaac K. Sundar, Ph.D.

Associate Professor, Department of Internal Medicine,
Division of Pulmonary Critical Care, and Sleep Medicine,
University of Kansas Medical Center
(<https://www.kumc.edu/isundar.html>)

Dr. Isaac K. Sundar is a lung biologist with over a decade of experience in oxidative stress, redox biology, and chronic inflammatory airway diseases.

He received his Ph.D. from Pondicherry University, India, in 2007, followed by postdoctoral training at the University of Rochester Medical Center, where he later served as a Research Assistant Professor before joining the University of Kansas Medical Center (KUMC). Currently an Associate Professor in the Division of Pulmonary, Critical Care, and Sleep Medicine at KUMC, Dr. Sundar leads a translational research program focused on the molecular mechanisms underlying chronic lung diseases such as asthma, pulmonary fibrosis, and chemical-induced lung injury.

A key area of his research explores the role of circadian clock dysregulation in driving inflammatory and fibrotic responses in the lung. His lab integrates in vitro and in vivo models—including primary human airway cells and transgenic mice—with high-throughput transcriptomics and advanced imaging techniques to study circadian regulation of immune-inflammatory pathways, epithelial barrier dysfunction, and tissue homeostasis.

Dr. Sundar's multidisciplinary work also investigates extracellular vesicles and exosomal non-coding RNAs as potential biomarkers and therapeutic targets in chronic lung disease. His lab uses both genetic (e.g., conditional knockout and overexpression models) and pharmacological approaches (e.g., circadian clock-modulating compounds) to dissect signaling pathways such as JAK/STAT3, WNT/ β -catenin, and TGF β /SMAD in disease pathogenesis.

He has authored 96+ peer-reviewed publications (H-index: 52) and his research work has been cited 9,874 times. A committed mentor, Dr. Sundar has guided the research of undergraduate students and postdoctoral fellows and actively hosts high school students for summer research experiences.