

Profile of an Early-Career Researcher



Chandra Miduturu, PhD

Principal Scientist

Blueprint Medicines

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Chandra Miduturu, PhD, is currently a principal scientist/associate director in the Medicinal Chemistry group at Blueprint Medicines. He joined Blueprint Medicines as a founding chemist in 2011 after completing his postdoctoral research work with Prof. Nathanael Gray at the Dana-Farber Cancer Institute (DFCI) and Harvard Medical School (HMS), Boston. As one of Nathanael's first postdoctoral researchers, he contributed to a new strategy of discovering novel kinase inhibitors and scaffolds by utilizing a high-throughput kinase screening method across the entire human kinome. He also worked on developing novel small molecule tools to interrogate kinases and phosphatases utilizing both cell and chemical biology techniques. He joined the DFCI/HMS postdoctoral program after obtaining his PhD in chemistry with Prof. Scott Silverman from the University of Illinois at Urbana-Champaign Chemical Biology program developing DNA constraints to study macromolecular structure and folding. Prior to his graduate studies, he obtained his bachelor's and master's degrees in chemistry from the Loyola College, Chennai, India, and the Indian Institute of Technology, Madras, India.

Starting operations in 2011, Blueprint Medicines has conducted kinase-focused drug discovery and development with four investigational medicines in clinical development targeting genomically validated kinases. Its approach empowers the rapid design and development of potent and selective treatments and increases the likelihood of clinical success. As a founding chemist at Blueprint Medicines, Chandra contributed to the design and synthesis of kinase-focused small molecule libraries. Annotating this library for potency and selectivity across more than 450 kinases has enabled Blueprint Medicines to identify potentially ideal starting points for medicinal chemistry programs. This early foundational work supports the rapid and reproducible discovery of precision therapies, and has helped Blueprint Medicines be among a few select companies that may bring two wholly discovered medicines, if approved, to patients within its first ten years of operation.

Chandra has spent most of his time at Blueprint Medicines devoted to several kinase inhibitor programs for oncology. Notably, Chandra is a key contributor to discovering two drug candidates now in clinical development: the mutant-selective KIT and PDGFRA inhibitor avapritinib and covalent FGFR4 selective inhibitor fisogatinib (also known as BLU-554). Avapritinib has received Food & Drug Administration (FDA) Breakthrough Therapy Designations for two distinct disease indications, and its first New Drug Application was accepted by the FDA in August 2019.

Most recently, Chandra has served as the lead chemist in Blueprint Medicines' collaboration with Roche, targeting up to five immuno-kinases. Currently approved immunotherapies are primarily antibodies that address immune checkpoint drug targets outside the cell; in collaboration with Roche, Blueprint Medicines is looking at cancer immunotherapy differently by identifying intracellular immunokinases that play

a role in antitumor immune responses, and precisely targeting them with small molecule therapies.

Chandra has co-authored 10+ peer-reviewed publications and has nine published patent applications. He has been an invited speaker to give first disclosures of some of this work, including the 2017 ACS first time disclosures, the 2017 Medicinal Chemistry Gordon Research Conference and 2017 Royal Society of Chemistry medical chemistry symposium.