

Leverage the Actinobacterial Strain Collection and Genome Database for Natural Products and Drug Discovery

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Abstract: The Natural Products Discovery Center (NPDC) at The Herbert Wertheim UF Scripps Institute for Biomedical Innovation & Technology houses one of the world's largest actinobacterial strain collections and genome databases. The Actinobacterial Strain Collection, containing 122,523 strains and isolated over the last eight decades and from 77 different countries, represents microbial and natural product (NP) diversities that are not available anywhere else. The Actinobacterial Genome Database, containing 11,357 sequenced and curated genomes and growing at the rate of ~10,000 genomes/year, represents the largest Actinobacterial Genome Database with the sequenced strains publicly available. We have launched an interactive NPDC web portal as the prototype of the Actinobacterial Strain Collection and Genome Database Community Resource (<https://npdc.rc.ufl.edu/home>), consisting of (i) the Strain Collection, (ii) the Genome Database, and (iii) the Bioinformatics Interface (<https://www.biorxiv.org/content/10.1101/2023.12.14.571759v1>). Lessons learned from our NPs program over the years and preliminary analysis of the Actinobacterial Strain Collection and Genome Database at NPDC will be presented to highlight how such a Community Resource could radically transform the current paradigm of NPs research and drug discovery.