Elucidating Secondary Metabolites from Putative Nitrogen-Fixing *Streptomyces spp.* Isolates

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Free-living nitrogen fixing bacteria provide significant amounts of nitrogen to a variety of plant species. The actinobacteria genus *Frankia* are the only well studied nitrogen-fixing gram-positive bacteria and form symbiotic root nodules. We recently isolated two *Streptomyces* species that grow reproducibly on nitrogen-free media, suggesting their ability to fix nitrogen. We show that these bacteria also produce compounds with strong antifungal and antibacterial activity. Based on bioassays and initial analytical results using droplet-probe high-resolution liquid chromatography-mass spectrometry, we hypothesize that the antifungal compound is a novel polyene. The bacterium also produces siderophores which aid in micronutrient acquisition. A dual role as putative nitrogen-fixer under low nitrogen conditions and the broad activity against fungal or bacterial pathogens makes these bacteria interesting for investigation, as microorganisms to increase plant resilience to nutrient and pathogen stress.