Abstract

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Discovery and Heterologous Expression of the Large GC-Rich Marinomycin Biosynthetic Gene Cluster

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Abstract

Marinomycins are polyene antibiotic isolated from marine microbe (Marinispora CNQ-140) with high activity against methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant Enterococcus faecium (VREF) known to be the causative organisms for most infectious diseases. In dim light Marinomycin A isomerizes to Marinomycin B and Marinomycin C with lesser potency against MRSA and VREF. Understanding the Marinomycins biogenetic gene cluster (BGC) has been a difficult task due to their large sizes and high GC content which makes the cluster susceptible to re-arrangement. Transformation of Streptomyces lividans by construct containing the cluster and heterologously expressing the encoded biogenetic cluster aided the production of Marinomycins.

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Biography

Assoc. Prof. Matthias Agbo is a lecturer in Pharmacy at the University of Nigeria since 2011. His research is in the isolation, characterization and assessment of new medicinally relevant natural products from Nigerian medicinal plants. This includes screening isolated compounds for activity against bacteria, parasites and in oxidative stress assays, with the aim of identifying and developing compounds that can be developed as cost-effective drugs.

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