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Antiviral activities of marine actinomycetes from lagos lagoon sediments

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Influenza A virus infections are of medical concern because of high mutation of their genes, viral transmission and increased resistance to available drugs. Actinomycetes have been recognized over decades for their ability to produce bioactive metabolites of therapeutic importance. The search for this group of bacteria have concentrated on the terrestrial environment and marine environment have been overlooked. It is therefore imperative to screen under-explored environments such as Lagos Lagoon, for actinomycetes with ability to produce novel antiviral drugs that will help alleviate drug resistance. Actinomycetes were isolated from sediment samples from different sites of the Lagos Lagoon, by spread plate method using starch casein, Kuster's, Gauze 1 and 2, marine and actinomycete isolation agar. Plates were incubated at 29 °C for 1 to 5weeks. Identification of the isolates was done using API kits and through amplification of 16S r RNA gene and sequencing using actinobacterial-specific primers. Extraction of secondary metabolites was carried out using equal volume ethyl acetate (1:1). Antiviral activity of the crude extracts on X-31 (H3N2) Influenza virus cultivated in MDCK-2 cells using 12-well plates, were also determined using plaque reduction assay. Cells were grown at 37 °C, in 12-well plates for 2 days. *Streptomyces albus*ULK2 and *Streptomyces avermitilis*ULK3 showed significant antiviral activity with extracts from the strain *Streptomyces albus*ULK2 having activity at concentration as low as 0.5mg/ml. This study revealed for the first time, actinomycetes isolated from Lagos lagoon sediments having antiviral activities. Actinomycetes from underexplored Lagos lagoon could be potential source of novel bioactive compounds of therapeutic values.

Biography

Adeleye completed his PhD in 1990 from University of Ibadan, Nigeria and has been lecturing in Universities in Nigeria. He is currently the Head of Department of Microbiology, University of Lagos. He has published more than 50 papers in reputed journals and has been serving as an editorial board member of repute in a few journals.

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