Screening of Marine Actinomycetes from Segara Anakan for Natural Pigment and Hydrolytic Activities

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First Author	
Last Author	
Authors	Asnani, A; Ryandini, D; Suwandri;
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Abstract	Marine actinomycetes have become sources of great interest to natural product chemistry due to their new chemical entities and bioactive metabolites. Since April 2010, we have screened actinobacteria from five sites that represent different ecosystems of Segara Anakan lagoon. In this present study we focus on specific isolates, K-2C which covers 1) actinomycetes identification based on morphology observation and 16S rRNA gene; 2) fermentation and isolation of pigment; 3) structure determination of pigment; and 4) hydrolytic enzymes characterization; Methodologies relevant to the studies were implemented accordingly. The results indicated that K-2C was likely Streptomyces fradiae strain RSU15, and the best fermentation medium should contain starch and casein with 21 days of incubation. The isolate has extracellular as well as intracellular pigments. Isolated pigments gave purple color with lambda(max) of 529.00 nm. The pigment was structurally characterized. Interestingly, Streptomyces K-2C was able to produce potential hydrolytic enzymes such as amylase, cellulase, protease, lipase, urease, and nitrate reductase.
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Author	ARI ASNANI, S.Si, M.Sc., Ph.D