

ABSTRACT

SCREENING AND CHARACTERIZATION OF ANTIOXIDANT COMPOUNDS FROM ACTINOMYCETES ASSOCIATED WITH SPONGES

By

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The screening and characterization of antioxidant compounds from actinomycetes associated with sponges has been carried out. The result of the screening gave an information that strain AT05 had the highest antioxidant activity compared to strain ANCb-6, ANT2, ANT3, and ANTd3. The test of thin layer chromatography with ninhydrin and Dragendorff reagents showed that the antioxidant component is belong to alkaloid group. The extract of AT05 was purified by several steps of chromatography to get compounds YA1 0,7 mg and YA2 4,8 mg. The FTIR spectrum of YA1 showed that YA1 compound had O-H stretching vibration at 3427 cm^{-1} , C=C stretching vibration at 1680 cm^{-1} , C-N stretching vibration at 1259 cm^{-1} , and a single band of N-H bending vibration at 803 cm^{-1} . The FTIR spectrum of YA2 showed that YA2 compound had O-H stretching vibration at 3415 cm^{-1} , C=C stretching vibration at 1681 cm^{-1} , C-N stretching vibration at 1145 cm^{-1} and N-H bending vibration at 1644 cm^{-1} . These data indicate that YA1 and YA2 belong to alkaloid group which have the hydroxyl group, double bond, secondary and tertiary amine groups. The scavenging ability of YA1 was 13 % and YA2 was 29% in 1 mg/mL. It concluded that isolate AT05 produce the secondary metabolite compounds of alkaloid group with an antioxidant activity.