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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER
REVIEW KARYA ILMIAH: JURNAL ILMIAH

Judul Artikel Ilmiah	:	**Characterization Of Cartenoid Pigments From Sargassum Polycystum And Its Associated Bacteria**
Nama semua penulis	:	Lia Kusmita, **Sri Achadi Nugraheni**, Handung Nuryadi
Status Pengusul (coret ygtidakperlu)	:	~~Penulis Utama~~/ ~~Penulis Utama & Korespondensi/PenulisKorespondensi~~/ **Penulis Anggota**

Status Jurnal:

• Nama Jurnal	:	Pakistan Journal Of Biotechnology
• Tahun terbit/Vol/No/halaman	:	2019/ Vol. 16/ No. 4 / halaman 119-126
• Edisi (bulan,tahun)	:	Maret 2019
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• Alamat WEB Jurnal/ Proceeding	:	https://pjbt.org/index.php/pjbt/article/view/66
• Terindex di	:	CABI (https://www.cabdirect.org/cabdirect/abstract/20219947614)

Kategori Publikasi (beri tanda V yang sesuai)

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d	Kelengkapan unsur dan kualitas jurnal (30%)	6	5
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	Nilai yang didapat pengusul: 16	**X 0.4 = 6.4 / 2 = 3.2**	

Catatan Penilaian artikel oleh Reviewer

a	Kelengkapan unsur isi artikel	Isi artikel sudah sesuai dengan jurnal Pakistan Journal of Biotechnology
b	Ruang lingkup & kedalaman pembahasan	Subtansi artikel tentang carotenoid pigmen dan sargasum sesuai dengan ruang lingkup jurnal Pakistan Journal of Biotechnology. Kedalaman pembahasan cukup baik, lebih separuh dari artikel yang digunakan di referensi digunakan sebahai pembahasan.(18 dari 38 buah rujukan ada di pembahasan)
c	Kecukupan dan kemutahiran data/informasi dan metodologi	Data atau informasi kurang up to date atau mutakhir karena hanya 12 dari 38 daftar pustaka yang digunakan dalam jurnal adalah kurang dari 10 tahun terakhir. Metode penelitian ditulis cukup lengkap dan jelas.
d	Kelengkapan unsur dan kualitas jurnal	Jurnal ini jurnal nasional yang sudah terakreditasi di CABI

Semarang,
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Jabatan : Lektor Kepala

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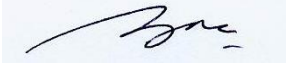
a	Kelengkapan unsur isi artikel	Artikel yang diajukan memiliki unsur lengkap. Abstraksi memuat hal esensial sebagai layaknya abstrak artikel ilmiah. Pendahuluan mencantumkan latar belakang penelitian serta merumuskan suatu tujuan penelitian dengan jelas. Bahan dan metoda disajikan dengan baik, Hasil disajikan dalam bentuk gambar dan tabel serta diberikan ulasan dengan memanfaatkan dasar ilmiah serta temuan terdahulu.
b	Ruang lingkup & kedalaman pembahasan	Ruang lingkup isi artikel adalah mengenai telaah bioteknologi penanda keanekaragaman mikroorganisme laut dalam kaitannya.dengan ketersediaan bahan hayati yang diperlukan bagi kehidupan manusia seperti makanan, obat obatan dll. Dibahas dengan cukup mendalam.
c	Kecukupan dan kemutahiran data/informasi dan metodologi	Data yang disajikan sebagai temuan memberikan tambahan pengetahuan bagi para penggiat ilmu pada bidang ini. Referensi yang disajikan cukup mutakhir dan dengan jumlah yang cukup. Konten materi artikel ada kaitan dengan disiplin ilmu pengusul yaitu bidang gizi.
d	Kelengkapan unsur dan kualitas jurnal	Jurnal merupakan jurnal ilmiah nasional berbahasa Inggris dan mencantumkan sejumlah editor dan reviewer.

Semarang,
Reviewer 2



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Jabatan : Lektor Kepala

Characterization of cartenoid pigments from *Sargassum polycystum* and its associated bacteria.

Author(s) : Lia Kusmita (/cabdirect/search/?q=au%3a%22Lia+Kusmita%22) ; Sri Achadi Nugraheni (/cabdirect/search/?q=au%3a%22Sri+Achadi+Nugraheni%22) ; Nuryadi, H. (/cabdirect/search/?q=au%3a%22Nuryadi%2c+H.%22)

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Journal article : Pakistan Journal of Biotechnology (/cabdirect/search/?q=do%3a%22Pakistan+Journal+of+Biotechnology%22) 2019 Vol.16 No.4 pp.219-226 ref.38

Abstract : Several bacteria are capable to produce various carotenoid pigments, and they may become potential bioresources for pigment production. Bacteria produce pigments for various reasons and it plays an important role. They may help to protect their host from high exposure of UV-light. However, the ability of marine bacteria to produce natural pigments has been less studied. In this study, we tried to isolate and characterize marine pigment-producing bacteria of brown seaweed macroalgae, *Sargassum polycystum* from Teluk Awur, Jepara. Out of seven bacterial isolates, only one bacterium, SJ04, positively contains pigments. Pigments analysis using HPLC method showed that pigment composition was slightly different between host and associated bacterium. Pheophorbide *a*, Fucoxanthin, and β-caroten were detected from *S. polycystum* as host, whereas Pheophorbide *a*, and Neoxanthin were detected from the associated bacteria (SJ04). For bacterium identification, molecular genetic approach based on 16S rRNA gene sequence showed that strain SJ04 was genetically closely related to *Brachybacterium zhongshanense* with 97.97% homology. The opportunity to realize a safe and environmentally friendly with low price, as well as opportunities to find new sources of pigments from bacteria.

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To submit manuscripts by email with attach file is strongly encouraged, provided that the text, tables, and figures are included in a single Microsoft Word file. The Pakistan Journal of Biotechnology (ISSNP: 1812-1837 and E-ISSN: 2312-7791) is published quarterly in March, June, September and Decemberis published bi-annually (one volume per year).

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ARTICLES

SENSITIVITY AND SPECIFICITY OF CONVENTIONAL CULTURE, LIGHT MICROSCOPY, SEROLOGICAL AND MOLECULAR METHODS FOR IDENTIFYING Mycobacterium tuberculosis COMPLEX

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PRODUCING OF PROBIOTICS MONTEREY CHEESE AND STUDY ITS CHEMICAL COMPOSITION

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ABSTRACT

Chemical composition of three manufactured Monterey cheese (Control Monterey cheese (C), therapeutic Monterey cheese with the single probiotic strain (A) and therapeutic Monterey cheese with mixture probiotic strains (B)) by adding probiotics bacteria was studied at 0, 14, 28 and 42 days of ripening period. Moisture content decreased in all manufactured Monterey cheese (C, A and B) during the ripening period, protein and fat content increased after 42 days of ripening period and reached 23.41, 23.78 and 23.63% respectively for protein whilst 31.20, 31.03 and 30.43% for fat. Salt and ash content in manufactured monterey cheese by using a mixture of probiotics strains was higher than both manufactured monterey cheese with single probiotic strain and control product (without probiotics)

Key Words: Probiotics, Monterey cheese, Chemical composition.

INTRODUCTION

Tended attention went to fortify food with vital supplements by using therapeutic bacterial strains with a healthy effect in order to improve consumer health and immunity. It has been shown evidently the close link between food and health not only on the development of the disease levels, but also skipped it to combat the disease itself, so the studies tended to produce many manufactured foods especially dairy products due to increasing its consumption as a result because they contain vital supplements, which represent the appropriate means to deliver these supplements to the consumer, the therapeutic cheese represents a favorable environment for keeping vital supplements since this product is a suitable carrier of the bacteria and the most important advantage that these products are therapeutic when they contain no less than 6^{10} CFU/g to perform a therapeutic role by improving the balance of intestinal flora, and getting back the real balance of intestinal flora requires the presence of 80-85% of the vital supplements and for this reason, recently the concept of therapeutic food became common (Vetvicka and Vetvickova, 2016).

Castro *et al*., (2015) defined functional foods; those foods that contain some health-promoting components that go beyond the traditional nutriaents; one way in which foods can be modified to become functional is by adding probiotics, in addition to the viability of probiotics in cheese, the incurporation of probiotic bacteria should not affect the sensory characteristics (flavor, texture, and appearance) of conventional (non-probiotic) cheeses. Although several studies have shown that probiotic cultures didn't considerably affect the Sensory quality of cheese, it is thought that their addition might contribute to different flavors and texture characteristics (Karimi *et al*., 2012 a, b).

The ingestion of cheese supplemented with pro-biotic bacteria has been associated with a variety of benefits to human health, such as improvements in the immune system, improvements in oral and intestinal health in the elderly and reinforcement of intestinal immunity (Lollo *et al*., 2012; Albenzio *et al*., 2013a, b).

The study aims to use probiotics (*Lactobacillus acidophilus* and *Bifidobacterium longum*) bacteria in manufacturing of Monterey cheese to study the chemical changes of manufactured cheese and comparing it with traditional Monterey cheese.

MATERIALS AND METHODS

Milk: Cow milk was obtained from an agricultural research station (College of Agriculture/University of Basra) and was used in cheese manufacturing.

Rennet: Microbial rennet (*Rhizomucor pusillus*) was obtained from Meito Sangyo Co LTD, Japan was used in cheese manufacturing.

Starters: *Lactococcus lactis ssp. lactis* and *Lactococcus lactis ssp. cremoris* from Chr-Hansen (Denmark), *Lactobacillus acidophilus* probiotic bacteria for the single starter and *Bifidobacterium longum* & *Lactobacillus acidophilus* for the mixt-ure starter from CVS/Pharmacy (Japan).

Monterey Cheese: Traditional Monterey cheese manufactured according to Kosikowski (1970). For probiotic Monterey cheese with single probiotic strain was manufactured by adding 10% of *Lb. acidophilus* 10^{10} CFU/g after adding the starter and following the same steps of the manufacturing procedure. While therapeutic Monterey cheese with mixture probiotic strains was manufactured by adding 10% of (*Lb. acidophilus* and *Bif. Longum*) 10^{10} cfu/g after adding the starter and following the same steps of manufacturing procedure. The ripening time was 6 weeks at 16°C and 85% humidity.

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SENSITIVITY AND SPECIFICITY OF CONVENTIONAL CULTURE, LIGHT MICROSCOPY, SEROLOGICAL AND MOLECULAR METHODS FOR IDENTIFYING *Mycobacterium tuberculosis* COMPLEX

Rawia F. Gamal [1], Abdel-Maksoud M.[2], Hanan A. Nourel-Din[3], Wasfy M.O.[2], El-Morsi A.A.[4] and Sadik A.S.*[1]

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ABSTRACT

In this study, some different tools, *i.e.*, conventional culture, light microscopy, serological and molecular methods were evaluated for their sensitivities to detect the *Mycobacterium tuberculosis* complex in forty specimens from animal and human sources. To achieve such goal 20 samples from each of raw milk, animal tissues, and human CSF were collected. Enzyme-linked immunosorbent assay (ELISA) was compared to conventional culture, light microscopy for its sensitivity and specificity to detect the presence of TB pathogen in these samples. Results showed that sensitivity and specificity of 10% &100% for IS6110-targed PCR, 30 and 90% for ELISA, 16.25% and 100% for conventional culturing and 17.5% and 87.0% for light microscopy were recorded. In other mean, the IS6110-targed PCR was relatively more useful in TB diagnosis followed by ELISA. Furthermore, the DNA fingerprinting of three standards TB strains using random amplified polymorphic of DNA-PCR (RAPD-PCR) was carried out in the hope of generating some DNA molecular marker for TB identification. RAPD-PCR finding showed some molecular DNA markers that could be very useful in the identification of tuberculosis strains.

Key Words: *M. tuberculosis* complex, TB diagnosis, Light microscopy, ELISA, PCR, DNA fingerprinting, RAPD-PCR.

INTRODUCTION

It worth to mention that tuberculosis was one of the most common infectious diseases in the world, as it has been recorded as an important causal agent of the death of between adults throughout the world (Cosivi *et al*., 1998 and Travería *et al*., 2013). Shinnick *et al*., (1995) estimated that one third of the world human's populations were infected with *Mycobacterium tuberculosis* and other *Mycobacterium* species. The etiological agent of bovine tuberculosis was *M. bovis*, which classified as a member of the TB complex and causing tuberculosis in humans as a result of its presence in pasteurized milk that considered an important part of a person's diet (Sherris, 1984).

Yeager *et al*., (1967) showed that light microscopy of acid-fast microorganisms lacks sensitivity and can only detect bacteria in concentration of 10000/mL or greater. Polymerase chain reaction (PCR) including the IS6110 insertion sequence, has been described by Hawkey (1994) and Collyns et al., (2002). This sequence was detected in multiple copies in the genome of M. tuberculosis, M. bovis, M. *africanum* and *M. microti* which belonging to the *M. tuberculosis* complex (Brissson-Noel *et al*., 1989, Eisenach *et al*., 1990 and Collins *et al*., 1993).

Sampaio *et al*., (2006) applied four molecular typing methods for analysis of *M. fortuitum* group strains causing post-mammoplasty infections.

This study was designed to evaluate the sensitivity and specificity of different tools, *i.e.*, conventional culture, light microscopy (acid-fast staining), enzyme-linked immunosorbent assay (ELISA) for detecting the presence of TB complex in samples from animal and human resources. A trail to optimize the PCR conditions as well as generating some specific DNA markers for TB identification *via* random amplified polymerphic of DNA-PCR (RAPD-PCR) was also determined.

MATERIALS AND METHODS

It is worth noting that this study was completed as part of an MA thesis in the Department of Agricultural Microbiology, Faculty of Agriculture, Ain Shams University during the period from 2002 to 2003.

Bacterial strains: The standard mycobacterial strain used in this study was *M. tuberculosis* H37-Ra (B) which obtained from the American Type Culture Collection (ATCC). The mycobacterial strains M0-041 (A) and M03-035 (C) which used for RAPD-PCR analysis were obtained from two different Egyptian patients.

Sources of samples: A number of 20 samples from each of milk and tissue samples (15 from animals suspected to be infected with TB and 5 negative controls) were collected from Fayoum Governorate. Similarly, sample numbers were collected from CSF and sputum from patients in Abasiya Fever Hospital, Cairo, Egypt.

Samples preparation: In case of milk samples, 10 mL aliquots were processed and centrifuged at 4000 rpm for 10 min. All cream and fluid were poured off. A volume of 200 µL were decontaminated by adding 4% sodium hydroxide as described by Kubicia *et al*., (1963). CSF samples were divided into two parts and one of them was centrifuged at 3000 rpm for 15 min. Sputum samples processed according to digestion denomination procedure developed by Kubicia *et al*., (1963).

Light microscopy: The stained smears were microscopically examined as applied by Singh and Parija (1998).

Mycobacteria cultivation: On tube of Lowenstein Jensen and Stone Brink medium two drops of the processed samples were placed then incubated at a slant