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EFFECT OF EXOPOLYSACCHARIDE FROM *Bacillus sp.* ISOLATED FROM CULTURES USE IN MALAY TRADITIONAL MEDICINE

By

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LIST OF ABBREVIATIONS

%	percentage
ml	milliliter
g	gram
kDa	kilodalton
rpm	rotation per minutes
nm	nanometer
°C	degree Celsius
mμ	milimicro
LPSs	Lipopolysaccharides
PSs	Polysaccharides
MIC	Minimal Inhibitory Concentration
CPS	Capsule Polysaccharide
EPS	Exopolysaccharide
PYE	Peptone-Yeast Extract

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ABSTRACT

Polysaccharides represent a class of high-value polymers with many industrial application in food, cosmetic, textile and pharmaceutical industries due to their properties. The objective of this study is to determine the effect of exopolysaccharide from *B.subtilis, B.coagulans* and *B.licheniformis* on pathogenic bacteria. Polysaccharides isolation was isolated by using ethanol method. The exopolysaccharide obtained was test against to ten strains of pathogenic bacteria. Antibacterial activity was determined using disks diffusion and drop test method. Antibacterial test showed that none of the polysaccharides have antibacterial activity. In contrast the exopolysaccharides was found to increase the growth of the tested bacteria. Exopolysaccharides from the *Bacillus* strains used doesn't effect on the bacteria. However, in the last forty years, new polysaccharides from cultivable microbial sources have received increase attention. Thus, exopolysaccharides have been produced by different bacteria on a commercial scale.

KESAN POLISAKARIDA LUAR SEL DARIPADA STRAIN *Basilus* DIASINGKAN DARIPADA KULTUR YANG DIGUNAKAN DALAM PERUBATAN MELAYU TRADISIONAL

ABSTRAK

Polisakarida adalah salah satu kelas polimer yang bernilai tinggi dalam banyak aplikasi perindustrian seperti dalam industri makanan, kosmetik, tekstil dan perubatan berdasarkan ciri-cirinya. Tujuan utama penyelidikan ini adalah untuk menentukan kesan polisakarida luar sel terhadap bakteria patogenik. Tiga strain bakteria yang boleh menghasilkan polisakarida iaitu *B.subtilis, B.coagulans* dan *B.licheniformis* telah digunakan. Polisakarida telah diasingkan menggunakan teknik etanol telah diuji ke atas sepuluh strain bakteria patogenik. Aktiviti antibakteria ditentukan menggunakan penyebaran disk dan ujian titisan. Ujian antibakteia tidak menunjukkan polisakarida tersebut bersifat antibakteria. Sebaliknya, polisakarida luar sel berfungsi untuk meningkatkan pertumbuhan bakteria yang diuji. Oleh itu, polisakarida luar sel daripada strain *Basilus* yang digunakan tidak memberi kesan terhadap bakteria patogenik. Walaubagaimanapun, sejak kebelakangan ini polisakarida baru daripada kultur bakteria semakin mendapat perhatian. Jadi, polisakarida luar sel boleh dihasilkan daripada bakteria yang berbeza secara komersial.