

BUKU LAPORAN AKHIR
GERAN JANGKA PENDEK USM
2007 - 2009

(NO: 304/PPSP/6131519)

BY

DR ZAIDAH ABDUL RAHMAN

**JABATAN MIKROBIOLOGI &
PARASITOLOGI**

PPSP

2011



SENARAI SEMAKAN UNTUK BUKU LAPORAN AKHIR GERAN USM JANGKA PENDEK

NAMA PENYELIDIK UTAMA	Dr Zaidah Abdul Rahman
NAMA CO-RESEARCHER	Prof Madya M Ravichandran Dr Siti Asma' Hassan Dr Siti Suraiya Md Noor Sabariah Osman
TAJUK GERAN	Determining the significance of coagulase-negative Staphylococci (CoNS) from blood cultures by molecular approach
NO.AKAUN	304/PPSP/6131519

SENARAI SEMAKAN SEMASA PENYERAHAN BUKU LAPORAN AKHIR
(Sila Tandakan (✓) Pada Kotak Yang Berkenaan)

NO.	PERKARA	ADA	TIADA
1.	Borang Laporan Akhir Projek Penyelidikan USM Jangka Pendek	✓	
2.	Borang Laporan Hasil Penyelidikan, PPSP	✓	
3.	i) Salinan Menuskrip	✓	
	ii) Salinan surat/email bukti penghantaran kepada mana-mana journal	✓	
4.	Penyata Perbelanjaan (Financial Statement) (Sila dapatkan daripada Jabatan Bendahari)	✓	
5.	Laporan Komprehensif (termasuk kertas persidangan atau seminar dan penerbitan saintifik hasil daripada projek ini)	✓	
6.	Surat pemakluman penghantaran Laporan Akhir ke Bhg. Penyelidikan	✓	

Nota:

- * Sila buat 2 salinan buku laporan Akhir
- * No. 1-5 - Perlu dimasukkan dalam Buku Laporan Akhir
- * No.6 - Hantar terus Kepada Cik Amra Othman (RCMO) hanya salinan sahaja kepada Bhg. R&D, PPSP

My doc/checklist borang2/sue

6. Abstrak Penyelidikan

(Perlu disediakan di antara 100 - 200 perkataan di dalam **Bahasa Malaysia dan juga Bahasa Inggeris**. Abstrak ini akan dimuatkan dalam Laporan Tahunan Bahagian Penyelidikan & Inovasi sebagai satu cara untuk menyampaikan dapatan projek tuan/puan kepada pihak Universiti & masyarakat luar).

Abstract of Research

(An abstract of between 100 and 200 words must be prepared in Bahasa Malaysia and in English).

This abstract will be included in the Annual Report of the Research and Innovation Section at a later date as a means of presenting the project findings of the researcher/s to the University and the community at large)

See Appendix 1

7. Sila sediakan laporan teknikal lengkap yang menerangkan keseluruhan projek ini.

[Sila gunakan kertas berasingan]

Applicant are required to prepare a Comprehensive Technical Report explaining the project.

(This report must be appended separately)

See Appendix 1

Senaraikan kata kunci yang mencerminkan penyelidikan anda:

List the key words that reflects your research:

<u>Bahasa Malaysia</u>	<u>Bahasa Inggeris</u>
<u>Coagulase-negative Staphylococci</u>	<u>Coagulase-negative Staphylococci</u>
<u>Bacteraemia</u>	<u>Bacteraemia.</u>
<u>PFGE</u>	<u>PFGE</u>

8. Output dan Faedah Projek

Output and Benefits of Project

(a) * Penerbitan Jurnal

Publication of Journals

(Sila nyatakan jenis, tajuk, pengarang/editor, tahun terbitan dan di mana telah diterbit/diserahkan)

(State type, title, author/editor, publication year and where it has been published/submitted)

Title: Speciation and antibiogram is sufficient to determine the significance of Coagulase-negative staphylococci bacteremia in a low resource setting.

*Zaidah AR, Hawa SH, Siti Asma H, Sabariah O and Siti Suraiya

Submitted for publication to *Journal of Hospital Infections*. Your submission entitled "Speciation and antibiogram is sufficient to determine the significance of Coagulase-negative staphylococci bacteremia in a low resource setting" has been assigned the following manuscript number: JHI-D-11-00615.

Paper presented: Oral presentation

3rd National Conference on Infectious Diseases, 25th – 26th October 2009 at Renaissance Kota Bharu, Kelantan Darul Naim.

- (b) **Faedah-faedah lain seperti perkembangan produk, pengkomersialan produk/pendaftaran paten atau impak kepada dasar dan masyarakat.**
State other benefits such as product development, product commercialisation/patent registration or impact on source and society.

* Sila berikan salinan/Kindly provide copies

- (c) **Latihan Sumber Manusia**
Training in Human Resources

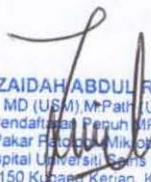
- i) Pelajar Sarjana: _____
Dr Siti Hawa Hamzah

Graduates Students
(Perincikan nama, ijazah dan status)
(Provide names, degrees and status)

MPath (Microbiology), Graduated in 2008

- ii) Lain-lain: _____
Others

9. **Peralatan yang Telah Dibeli:**


Dr. ZAIDAH ABDUL RAHMAN
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Pakar Patologi (Mikrobiologi)
Hospital Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan

Tandatangan Penyelidik
Signature of Researcher

13/11/11

Tarikh
Date
Laporan Akhir Projek Penyelidikan Jangka Pendek
Final Report Of Short Term Research Project

Komen Jawatankuasa Penyelidikan Pusat Pengajian/Pusat
Comments by the Research Committees of Schools/Centres

(Large empty box with horizontal lines for comments)

TANDATANGAN PENERUSI
JAWATANKUASA PENYELIDIKAN
PUSAT PENGAJIAN/PUSAT
Signature of Chairman
[Research Committee of School/Centre]

Tarikh
Date

BORANG LAPORAN HASIL PENYELIDIKAN

PPSP

Tajuk geran: **Determining the significance of coagulase-negative Staphylococci (CoNS) from blood cultures by molecular approach**

Penyelidik: Dr Zaidah Abdul Rahman

Jenis geran: Geran USM Jangka Pendek

Tempoh geran: Dua Tahun (1 Mei 2007 – 30 April 2009)

Jenis laporan: Laporan Kemajuan Alatan di beli Ya:nyatakan.....

Laporan Akhir*: Tidak

OBJEKTIF SPESIFIK KAJIAN (sama spt dalam proposal asal)	SECARA RINGKAS TERANGKAN PENCAPAIAN/HASIL	OBJEKTIF TERCAPAI ATAU TIDAK
1. To determine the clonality of CoNS isolated in multiple blood cultures by pulsed-field gel electrophoresis (PFGE)	168 CoNS (84 pairs) isolates were subjected to PFGE analysis. However only 66 (40%) of the isolates were analyzed since the remnant had poor PFGE bands.	50% achieved
2. To determine the predominant species of CoNS isolated from blood cultures from patients in Hospital Universiti Sains Malaysia	202 CoNS isolates were analyzed. Predominant species of CoNS isolated in this study. <i>S.epidermidis</i> was the most predominant species (52.5%), followed by <i>S.capitis</i> (10.4%) and <i>S.chromogenes</i> (7.9%).	Achieved
3. Comparison of genotype and phenotypes method for species level identification of clinical isolates of CoNS	168 CoNS (84 pairs) isolates of the same species were subjected to antibiotic susceptibility testing (phenotypic) and PFGE (genotypic). 66 isolates had readable PFGE patterns. Isolates with same species and antibiogram had 93.3% probability of originating from same strain.	Achieved

- *Laporan Akhir perlu disertakan salinan manuskrip dan surat yang dihantar kepada mana-mana jurnal untuk penerbitan.*

Nama Penyelidik Utama (PI): Dr Zaidah Abdul Rahman

t.t.:

Tarikh: 13/11/2011


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Journal of Hospital Infection

Speciation and antibiogram is sufficient to determine the significance of Coagulase-negative staphylococci bacteremia in a low resource setting

--Manuscript Draft--

Manuscript Number:

Full Title:

Speciation and antibiogram is sufficient to determine the significance of Coagulase-negative staphylococci bacteremia in a low resource setting

Corresponding Author:

zaidah abdul rahman, master of pathology (Microbiology)
University Sains Malaysia
Kubang Kerian, Kelantan MALAYSIA

Article Type:

Original Article

Title: Speciation and antibiogram is sufficient to determine the significance of Coagulase-negative staphylococci bacteremia in a low resource setting

Running title: Speciation and antibiogram is sufficient to determine the significance of Coagulase-negative staphylococci bacteremia in a low resource setting

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ABSTRACT

Background: Coagulase-negative staphylococci (CoNS) are a group of micro-organisms that are increasingly implicated as a cause of significant infection and the leading cause of blood stream infection (BSI). One important predictor of true BSI is the isolation of CoNS from multiple blood cultures, presuming that the isolates represent the same species.

Aim: Thus, the objective of this study was to determine the significance of repeated CoNS isolated from blood cultures.

Methods: This was a prospective laboratory study which was initiated in June 2007 until July 2008. CoNS isolates were obtained from patients who had two positive blood cultures within a 14-day interval. CoNS were identified with the species level using an API-Staph and antibiotics susceptibility testing was performed according to the CLSI standard. Strain relatedness was confirmed using pulsed-field gel electrophoresis.

Findings: During the study period, 202 of CoNS were isolated from 101 patients. The most common species isolated was *Staphylococcus epidermidis* (59.0%). 83.2% of patients isolated same species of CoNS from repeated blood cultures. Among the isolates of same species, only 40.7% had the same antibiogram. CoNS with the same species and antibiogram had 93.3% probability of the same strain. 65.5% of patients were treated with antibiotics, especially glycopeptides group.

Conclusion: Speciation and antibiogram of CoNS from repeated blood cultures are adequate in determining the significance of repeated CoNS isolated from blood cultures.

Keywords: Coagulase-negative staphylococci, blood stream infection, antibiotics susceptibility testing