

PERPUSTAKAAN HAMDAN TAHIR
UNIVERSITI SAINS MALAYSIA



RUJUKAN

DR CHE MARAINA BT. CHE HUSSIN
JABATAN IMUNOLOGI
PPSP, USM

BUKU LAPORAN AKHIR
GERAN PENYELIDIKAN (SHORT TERM GRANT)

304/PPSP/6131456

LAPORAN AKHIR PROJEK PENYELIDIKAN JANGKA PENDEK
FINAL REPORT OF SHORT TERM RESEARCH PROJECT

Sila kemukakan laporan akhir ini melalui Jawatankuasa Penyelidikan di Pusat Pengajian dan Dekan/Pengarah/Ketua Jabatan kepada Pejabat Pelantar Penyelidikan

1. **Nama Ketua Penyelidik: Dr Che Maraina Bt. Che Hussin**
Name of Research Leader

Profesor Madya/
Assoc. Prof.

Dr./
Dr.

Encik/Puan/Cik
Mr/Mrs/Ms

2. **Pusat Tanggungjawab (PTJ): School of Medical Sciences,**
School/Department

3. **Nama Penyelidik Bersama: Dr Adibah Hanim Bt. Ismail**
Dr Azwany Bt. Yacob

4. **Tajuk Projek: Anti-CCP antibodies: A Better Diagnostic Tool for Rheumatoid Arthritis**
Title of Project

5. **Ringkasan Penilaian/Summary of Assessment:**

	Tidak Mencukupi <i>Inadequate</i>		Boleh Diterima <i>Acceptable</i>	Sangat Baik <i>Very Good</i>	
	1	2		3	4
i) Pencapaian objektif projek: <i>Achievement of project objectives</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Kualiti output: <i>Quality of outputs</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Kualiti Impak: <i>Quality of impacts</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Pemindahan teknologi/potensi pengkomersialan: <i>Technology transfer/commercialization potential</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v) Kualiti dan usahasama : <i>Quality and intensity of collaboration</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
vi) Penilaian kepentingan secara keseluruhan: <i>Overall assessment of benefits</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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 the 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 2

Senaraikan kata kunci yang mencerminkan penyelidikan anda:

List the key words that reflects your research:

Bahasa Malaysia

Bahasa Inggeris

Radang Sendi

Rheumatoid Arthritis

Antibodi kepada CCP

Anti-CCP

Faktor reumatid

Rheumatoid factor

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 diterbitkan/diserahkan)

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

1. Manuscript is ready to be sent to the International Journal of Rheumatic Diseases.

Manuscript is attached (Appendix 3)

2. The study project has been presented as poster presentation at the 4th Asian Congress on

Autoimmunity on the 11-13 Sept, 2009 in Singapore.(Appendix 4)

- (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.

Tiada/None

* Sila berikan salinan/Kindly provide copies

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

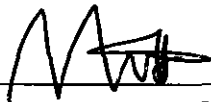
- i) **Pelajar Sarjana**
Graduates Students
(Perincikan nama, ijazah dan status)
(Provide names, degrees and status)

Dr Rusni Bt Dollah
MD (USM)
Sarjana Perubatan (Perubatan Keluarga)

- ii) **Lain-lain:**
Others

9 **Peralatan yang Telah Diheli:**

Tiada/None


Tandatangan Penyelidik
Signature of Researcher

25/11/09
Tarikh
Date

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

laporan ini telah berjaya dikemaskini
dengan mencapai ketiga-tiga objektif.
Hakul kajian telah menghantar
satu manuskrip yang telah
dikemaskini ke International Journal
of Psychology Science serta
pembentangan poster di KEM Asean
Congress on Neuroimaging.

laporan ini juga telah membuat
dalam bentuk D. Purni At KEM
Sajana pembata C pembata kebanya

Secara keseluruhannya pencapaian
projek adalah memuaskan

PROFESSOR AHMAD SUKARI HALIM
Chairman of Research Committee
School of Medical Sciences
Health Campus
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan.

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

7/1/2010
Tarikh
Date

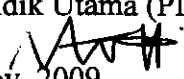
BORANG LAPORAN HASIL PENYELIDIKAN
PPSP

Tajuk geran: Anti-CCP antibodies: A better Diagnostic Tool for Rheumatoid Arthritis
 Penyelidik: Dr Che Maraina Bt Che Husin
 Jenis geran: Short Term Grant
 Tempoh geran: 15 Julai-14 Julai, 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 describe the sociodemographic and clinical characteristics of rheumatoid arthritis patients	Majority of the patients were Malays (86.2%) and females (83.8%). The mean (SD) age was 49.9 (12.66) years ranging from 19 to 79 years old. Majority of the patients were married (88.9%) and non-smokers (90.5%).	Tercapai
2. To determine the sensitivity and specificity of anti-CCP antibodies in rheumatoid arthritis patient attending HUSM using ACR criteria as the gold standard	The majority (71%) of RA patients were positive for anti-CCP antibodies while only 5.2% of non RA patients were positive. The majority (85%) of RA patients were positive for rheumatoid factor while only 39% of non RA patients were positive	Tercapai
3. To compare the sensitivity and specificity of anti CCP antibodies with rheumatoid factor.	The majority (85%) of RA patients were positive for rheumatoid factor while only 39% of non RA patients were positive. However, RF showed higher sensitivity (85.0% versus 71.0%) when compared to anti-CCP antibodies. Sensitivity and specificity of anti-CCP antibodies and rheumatoid factor were significantly different ($p < 0.001$).	Tercapai
4.		

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

Nama Penyelidik Utama (PI): Dr Che Maraina Bt Che Hussin
 t.t.: 
 Tarikh: 25 Nov, 2009

UNIVERSITI SAINS MALAYSIA
JABATAN BENDAHARI
KUMPULAN WANG PENYELIDIKAN GERAN USM(304)
PENYATA PERBELANJAAN SEHINGGA 31 JULAI 2009

Jumlah Geran:	RM	19,901.00	Ketua Projek: DR CHE MARAINA CHE HUSSIN
Peruntukan 2006 (Tahun 1)	RM	9,951.00	Tajuk Projek: Anti-CCP Antibodies: a Better Diagnostic Tool for Rheumatoid Arthritis
Peruntukan 2007 (Tahun 2)	RM	9,950.00	
Peruntukan 2008 (Tahun 3)	RM	0.00	Tempoh: 15 Julai 06- 14 Julai 08
			No.Akaun: 304/PPSP/6131456

Kwg	Akaun	PTJ	Projek	Donor	Peruntukan Projek	Perbelanjaan Kumpul Hingga Tahun Lalu	Peruntukan Semasa	Tanggungjawab Semasa	Bayaran Tahun Semasa	Belanja Tahun Semasa	Baki Projek
304	11000	PPSP	6131456		-	-	-	-	-	-	-
304	14000	PPSP	6131456		-	-	-	446.25	446.25	(446.25)	
304	15000	PPSP	6131456		-	-	-	-	-	-	
304	21000	PPSP	6131456		-	-	-	-	-	-	
304	22000	PPSP	6131456		-	-	-	-	-	-	
304	23000	PPSP	6131456		-	1.80	(1.80)	-	-	(1.80)	
304	24000	PPSP	6131456		-	-	-	-	-	-	
304	25000	PPSP	6131456		-	-	-	-	-	-	
304	26000	PPSP	6131456		-	-	-	-	-	-	
304	27000	PPSP	6131456		9,951.00	7,049.80	2,901.20	4,688.00	4,180.80	8,868.80	(5,967.60)
304	28000	PPSP	6131456		-	-	-	-	-	-	
304	29000	PPSP	6131456		9,950.00	170.00	9,780.00	-	686.00	686.00	9,094.00
304	32000	PPSP	6131456		-	-	-	-	-	-	
304	35000	PPSP	6131456		-	-	-	-	-	-	
304	A11102	PPSP	6131456		-	-	-	400.00	-	400.00	(400.00)
					19,901.00	7,221.60	12,679.40	5,088.00	5,313.05	10,401.05	2,278.35

ABSTRAK

Pengenalan : Sehingga kini rheumatoid factor digunakan untuk diagnosis rheumatoid arthritis dan ianya merupakan salah satu kriteria yang terdapat dalam American College of Rheumatology (ACR). Walau bagaimanapun, factor rumatoid positif menunjukkan spesifisiti diagnosis yang rendah kerana factor rheumatoid juga terdapat dalam kalangan individu yang sihat. Terkini ujian antibody kepada anti-cyclic citrullinated peptide telah ditemui untuk diagnosis radang sendi.

Objektif : Untuk menentukan sensitiviti dan spesifisiti ujian anti-cyclic citrullinated peptide antibodi dalam kalangan pesakit radang sendi yang mengunjungi Hospital Universiti Sains Malaysia menggunakan kriteria American College of Rheumatology sebagai piawai dan untuk membezakan sensitiviti dan spesifisiti di antara anti-cyclic citrullinated peptide antibodi dan faktor rumatoid.

Metodologi : Ini adalah kajian rentas yang dijalankan dari bulan Januari sehingga Disember 2008 ke atas 253 pesakit yang terdiri dari 100 orang pesakit radang sendi dan 153 orang pasakit yang mengalami sakit sendi. Serum untuk ujian antibody kepada anti-cyclic citrullinated peptide dan factor rumatoid dari setiap subjek dilakukan dengan menggunakan teknik enzyme linked immunosorbent assay (ELISA). Sensitiviti dan spesifisiti setiap ujian ditentukan dengan menggunakan diagnosis klinikal sebagai piawai.

Keputusan : Ujian anti-cyclic citrullinated peptide antibodi menunjukkan sensitiviti 71.0% dan spesificiti 94.8% sementara factor rumatoid menunjukkan sensitiviti 85.0% dan spesificiti 74.5%. Nilai prediktif positive untuk anti-cyclic citrullinated peptide adalah 89.9% berbanding faktor rheumatoid 68.5%. Ujian sensitiviti dan spesifisiti untuk anti-cyclic citrullinated peptide antibodi dan faktor rheumatoid menunjukkan perbezaan yang signifikan dengan p-value < 0.001.

Kesimpulan : Anti-cyclic citrullinated peptide antibodi mempunyai diagnosis spesifisiti dan nilai positif prediktif yang lebih tinggi daripada faktor rumatoid tetapi nilai sensitiviti kurang berbanding faktor rumatoid.

ABSTRACT

Introduction: Rheumatoid factors are currently used in the diagnosis of rheumatoid arthritis and constitute one of the classification criteria proposed by the American College of Rheumatology. However, rheumatoid factor positivity shows low diagnostic specificity because rheumatoid factor because it is also present in patients with other autoimmune and infectious disease and even in a proportion of normal healthy individuals. Recently, another test of interest in the diagnosis of rheumatoid arthritis is the assay for anti-cyclic citrullinated peptide (anti-CCP) antibodies.

Objectives : To determine the sensitivity and specificity of anti-cyclic citrullinated peptide antibodies in rheumatoid arthritis patients attending HUSM using American College of rheumatology (ACR) criteria as a gold standard and to compare the sensitivity and specificity of anti-CCP and rheumatoid factor.

Methodology: This was a cross sectional study which conducted from January 2008 to December 2008. The study consisted of 253 patients, 100 patients with rheumatoid arthritis and 153 patients with arthritis or arthralgia but not fulfilled ACR criteria for rheumatoid arthritis. Serum from each subject was tested for anti-CCP antibodies and IgG RF by enzyme linked immunosorbent assay. Sensitivity and specificity of the test were evaluated using the clinical diagnosis as the gold standard.

Results: The sensitivity of anti-CCP was 71.0% with 93.8% of specificity. For rheumatoid factor the sensitivity was 85.0% and specificity was 74.5%. The positive predictive value for anti-CCP was 89.9% whereas for rheumatoid factor was 68.5%. The sensitivity and specificity of anti-CCP antibodies and rheumatoid factor was significantly different with p-value of < 0.001 .

Conclusions: Anti-CCP antibody has a higher diagnostic specificity and positive predictive value than rheumatoid factor, however sensitivity was lower than rheumatoid factor.