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LAMPIRAN

Lampiran 1. Data uji sensitivitas antibiotika golongan carbapenem terhadap bakteri *Klebsiella pneumoniae* menggunakan alat Vitek 2 Compact®

NO.	NO. SAMPEL	HASIL VITEK			Probability
		IMI	MEM	DORI	%
1	546/04	S	S	S	99
2	479/04	R	R	R	99
3	549/04	S	S	S	99
4	466/04	S	S	S	99
5	1B/04	S	S	S	99
6	269/04	S	S	S	99
7	223/04	S	S	S	97
8	116/04	S	S	S	99
9	47/04	S	R	S	99
10	9B/04	S	I	S	99
11	20/04	S	R	S	99
12	62/04	S	S	S	99
13	70/04	S	S	S	99
14	85/04	S	S	S	99
15	110/05	S	S	S	99
16	153/05	S	S	S	99
17	163/05	S	S	S	99
18	67/05	R	R	R	99
19	361/05	S	S	S	97
20	303/05	S	S	S	99
21	6B/05	S	S	S	99
22	99/05	S	S	S	99
23	69/05	S	R	S	99
24	242/05	R	R	R	99
25	195/05	R	R	R	99
26	279/05	S	S	S	93
27	360/05	S	S	S	99
28	427/05	I	S	S	99
29	83/05	S	S	S	99
30	4/06	S	S	S	95
31	49/06	S	S	S	99
32	51/06	R	R	R	99
33	61/06	S	S	S	99
34	39/06	S	S	S	99
35	55/06	R	R	S	99
36	80A/06	S	S	S	99
37	79A/06	S	S	S	99
38	69/06	S	S	S	99
39	106/06	S	S	S	99
40	122/06	R	R	R	95

41	505A/07	S	S	S	99
42	113/07	S	S	S	96
43	112A/07	S	S	S	99
44	502/07	S	S	S	99
45	182A/07	S	S	S	93
46	166/07	S	S	S	99
47	520/07	S	S	S	99
48	203/07	S	S	S	99
49	268/07	S	S	S	99
50	267/07	S	S	S	99

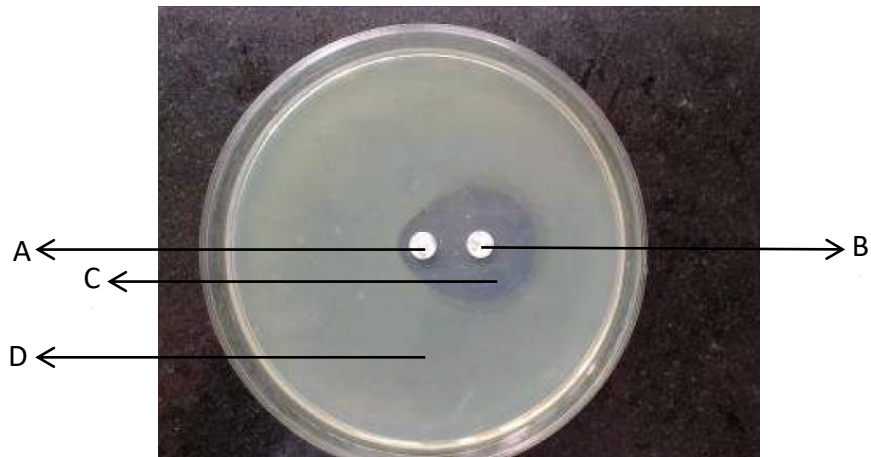
Daftar Interpretasi sensitivitas Enterobacteriaceae terhadap antibiotika golongan carbapenem menurut CLSI Tahun 2016, Tabel 2A-1

Nama antibiotika carbapenem	Potensi Antibiotika	Zona hambat (mm)				MIC µg/ml			
		S	SDD	I	R	S	SDD	I	R
Doripenem	10 µg	≥ 23	-	15-17	≤14	≤ 1	-	2	≥ 4
Ertapenem	10 µg	≥ 22	-	19-21	≤14	≤ 0.5	-	1	≥ 2
Imipenem	10 µg	≥ 23	-	20-22	≤14	≤ 1	-	2	≥ 4
Meropenem	10 µg	≥ 23	-	20-22	≤14	≤ 1	-	2	≥ 4

Lampiran 2. Data Hasil Uji Konfirmasi Produksi MBL dengan metode *Tes Sinergi Disk Ganda* (DDST)

NO.	NO. SAMPEL	UJI DDST zona hambat (mm)		SELISIH ZONA HAMBAT (mm)	HASIL
		IMI	Disk Kosong + EDTA		
1	67/05	18	20	2	Positif MBL
2	479/04	14	14	0	Negatif MBL
3	69/05	13	16	3	Positif MBL
4	242/05	20	17	3	Negatif MBL
5	195/05	18	16	2	Negatif MBL
6	47/04	20	19	1	Negatif MBL
7	20/04	24	16	8	Negatif MBL
8	51/06	15	15	0	Negatif MBL
9	55/06	27	13	14	Negatif MBL
10	122/06	18	14	4	Negatif MBL

Keterangan: Perbandingan zona hambat antara disk Kosong + EDTA dengan IMP dinyatakan sebagai hasil yang positif menghasilkan MBL (Yong, D. *et al*, 2002).



Gambar 7. Hasil metode DDST, Disk Kosong + EDTA (di sebelah kanan) menghasilkan zona penghambatan lebih besar dari pada disk imipenem (di sebelah kiri) (A. disk imipenem 10 µg, B. disk kosong + 10 µl 0,5 M EDTA, C. Zona hambat (Positif MBL), D. Media MHA yang tumbuh pada isolate uji).

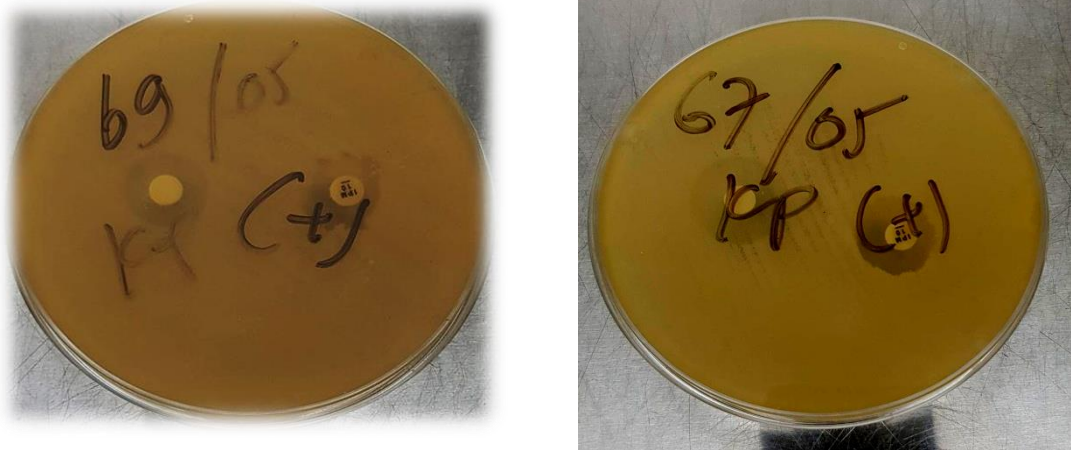
Sumber Pustaka

Yong D, Lee K, Yum JH, Shin HB, Rossolini GM, Chong Y. Metode cakram Imipenem-EDTA untuk diferensiasi isolat klinis *Pseudomonas spp.* dan *Acinetobacter spp.* J Clin Microbiol. 2002; 40: 3798–801



Gambar 8. Alat Vitec 2 Compact

Lampiran 3. Gambar Hasil Pengamatan



Gambar 9. Hasil Uji Fenotip enzim MBL Tes Sinergi Disk Ganda (DDST) Isolat *Klebsiella Pneumoniae* pada sampel nomor kode 69/05 dan 67/05.



Gambar 10. Isolat *Klebsiella Pneumoniae* pada medium TSIA



Gambar 11. Paper Disc Antibiotika (Imipenem 10µg)

Lampiran 4. Rekomendasi Persetujuan Etik



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
UNIVERSITAS HASANUDDIN
FAKULTAS KEDOKTERAN
RSPTN UNIVERSITAS HASANUDDIN
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
KOMITE ETIK PENELITIAN KESEHATAN

Sekretariat : Lantai 3 Gedung Laboratorium Terpadu
 JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.
 Contact Person: dr. Agussalim Bukhari, MMed, PhD, SpGK Telp. 081225704670 e-mail : agussalimbukhari@yahoo.com

REKOMENDASI PERSETUJUAN ETIK

Nomor : 449/UN4.6.4.5.31/ PP36/ 2019

Tanggal: 19 Juni 2019

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH19050291	No Sponsor	
Peneliti Utama	Muhammad Jen Hamdani	Protokol	
Judul Peneliti	Deteksi Fenotip Isolat Bakteri Klebsiella Pneumoniae Penghasil Enzim Metallo Beta Laktamase Resistensi Karbapenem Dengan Metode Tes Sinergi Disk Ganda (DDST) Pada Pasien Infeksi di RSUP Dr Wahidin Sudirohusodo Makassar		
No Versi Protokol	2	Tanggal Versi	31 Mei 2019
No Versi PSP		Tanggal Versi	
Tempat Penelitian	RSUP dr. Wahidin Sudirohusodo Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 19 Juni 2019 sampai 19 Juni 2020	Frekuensi review lanjutan
Wakil Ketua Komisi Etik Penelitian	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	
Sekretaris Komisi Etik Penelitian	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

Lampiran 5. Permohonan Izin Penelitian

**KEMENTERIAN KESEHATAN REPUBLIK INDONESIA****DIREKTORAT JENDERAL PELAYANAN KESEHATAN**

RUMAH SAKIT UMUM PUSAT DR. WAHIDIN SUDIROHUSODO
 Jalan Perintis Kemerdekaan Km. 11 Tamalanrea, Makassar, Kode Pos 90245
 Telp. (0411) 584675 – 581818 (*Hunting*), Fax. (0411) 587676
 Laman : www.rsupwahidin.com Surat Elektronik : tu@rsupwahidin.com



Nomor : **LB.02.01/2.213664/2019**
 Hal : **Permohonan Izin Penelitian**

27 Juni 2019

Yth.

1. Ka. Inst. Laboratorium Patologi Klinik
2. Ka. Inst. Rekam Medis

Dengan ini kami hadapkan peneliti dari:

Nama : **Muhammad Jen Hamdani**
 Nomor Pokok : **N012171038**
 Prog. Studi : **S2 Farmasi**
 Isnt : **Fak. Farmasi Unhas**
 No. HP : **081355888354**

Yang bersangkutan akan melakukan penelitian dengan Judul **"Deteksi Fenotip Bakteri *Klebsiella Pneumoniae* Penghasil Enzim *Mettallo Beta Laktamase Resisten Karbapenem* dengan Metode Tes Sinergi Disk Ganda (DDST) di Rumah Sakit Umum Pusat Dr. Wahidin Sudirohusodo Makassar Tahun 2019"** sesuai dengan permohonan peneliti dari Dekan Fakultas Farmasi Unhasi, dengan nomor 1307/UN4.17/PL.00.00/2019, tertanggal 07 Mei 2019. Penelitian ini berlangsung selama bulan Juli s.d September 2019, dengan catatan selama penelitian berlangsung peneliti :

1. Wajib memakai ID Card selama berada di lingkungan rumah sakit
2. Wajib mematuhi peraturan dan tata tertib yang berlaku
3. Tidak mengganggu proses pelayanan terhadap pasien
4. Tidak diperkenankan membawa status pasien keluar dari Ruang Rekam Medik
5. Tidak diperbolehkan mengambil gambar pasien dan identitas pasien harus dirahasiakan.
6. Setelah selesai penelitian wajib melapor ke Bagian Diklit

Demikian untuk di pergunakan sebagaimana mestinya.

Direktur SDM dan Pendidikan,



Catatan :

1. Pelaksanaan sesuai ketentuan
2. Kerahasiaan data terjaga
3. Hasil penelitian diserahkan ke Bag. Diklit

Lampiran 6. Laboratory Report

Card Type: GN Bar Code: 2410721103136735 Testing Instrument: 0000148FF0F6 (8459)
 Card Type: AST-GN93 Bar Code: 6830868203136645 Testing Instrument: 0000148FF0F6 (8459)
 Setup Technologist: Laboratory Supervisor(LabSuper)

Bionumber: 6607734753565010

Organism Quantity:

Selected Organism: Klebsiella pneumoniae ssp pneumoniae

Comments:	CARBAPENEMASE RESISTEN DETECTED

Identification Information	Card: GN	Lot Number: 2410721103	Expires: Nov 17, 2019 12:00 CST
	Completed: May 7, 2019 14:43 CDT	Status: Final	Analysis Time: 3.83 hours
Organism Origin	VITEK 2		
Selected Organism	99% Probability	Klebsiella pneumoniae ssp pneumoniae	
	Bionumber: 6607734753565010	Confidence: Excellent identification	
SRF Organism			
Analysis Organisms and Tests to Separate:			
Analysis Messages:			
Contraindicating Typical Biopattern(s)			

Susceptibility Information	Card: AST-GN93	Lot Number: 6830868203	Expires: Apr 12, 2020 13:00 CDT		
	Completed: May 7, 2019 19:36 CDT	Status: Final	Analysis Time: 8.72 hours		
Antimicrobial	MIC	Interpretation	Antimicrobial	MIC	Interpretation
ESBL	NEG	-	+Cefotaxime		R
Ampicillin	>= 32	R	Aztreonam	<= 1	*R
+Amoxicillin		R	Ertapenem	>= 8	R
Ampicillin/Sulbactam	>= 32	R	Meropenem	>= 16	R
Piperacillin/Tazobactam	>= 128	R	Amikacin	<= 2	S
Cefazolin			Gentamicin	>= 16	R
Urine	>= 64	R	Ciprofloxacin	1	S
Other	>= 64	R	Tigecycline	1	S
Cefepime	8	SDD	Trimethoprim/Sulfamethoxazole	>= 320	R
Ceftazidime	>= 64	R	Nitrofurantoin	32	S
Ceftriaxone	>= 64	R			

+ = Deduced drug * = AES modified ** = User modified SDD = Susceptible-dose dependent (SDD) implies that susceptibility of an isolate is dependent on the dosing regimen used. For further information, please refer to CLSI Performance Standards, or Product information.

AES Findings:	Last Modified: Sep 23, 2018 16:53 CDT	Parameter Set: Global CLSI-based+Natural Resistance (2018)
Confidence Level:	Consistent	