

BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Pertama, hasil menunjukkan bahwa dari 30 sampel urin pasien infeksi saluran kemih di RSUD Dr. Moewardi Surakarta ada 25 sampel yang positif mengandung bakteri *Klebsiella sp.* sedangkan 5 sampel lainnya tidak mengandung bakteri *Klebsiella sp.*

Kedua, hasil dari uji sensitivitas menunjukkan bahwa pola sensitivitas dari keempat antibiotik terhadap bakteri *Klebsiella sp.* hasil isolasi sampel urin pasien infeksi saluran kemih di RSUD Dr. Moewardi Surakarta adalah antibiotik siprofloksasin 84% sensitif dan 16% resistensi, kotrimoksazol 60% sensitif dan 40% resistensi, fosfomisin 96% sensitif dan 4% resistensi serta amoksisilin-klavulanat 32% sensitif, 36% intermediet dan 32% resistensi.

B. Saran

Pertama, perlu dilakukan penelitian terhadap bakteri patogen lain seperti *E.coli*, *Proteus*, *Pseudomonas*, *Enterobacter* dan lain-lain yang terdapat pada pasien infeksi saluran kemih.

Kedua, perlu dilakukan penelitian dengan antibiotik lain yang dapat disesuaikan dengan bakteri penyebabnya ataupun infeksi lainnya sehingga tepat sasaran, dan dapat mengurangi efek yang tidak diinginkan.

Ketiga, perlu dilakukan kultur pada RSUD. Dr. Moewardi untuk mengurangi terjadinya resistensi.

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Lampiran 1. Hasil uji sensitivitas, perhitungan prosentase dan perhitungan diameter daya hambat (mm)

1. Hasil uji sensitivits tiap replikasi

No. Sampel	Replikasi	Diameter zona hambat antibiotik (mm) dan tingkat kepekaan antibiotik							
		Amc	PS	Fosfo	PS	Sipro	PS	Kotri	PS
1	1	12	R	29	S	38	S	28	S
	2	12	R	28	S	38	S	28	S
	3	12	R	28	S	38	S	28	S
2	1	23	S	29	S	35	S	24	S
	2	23	S	29	S	36	S	25	S
	3	24	S	29	S	36	S	27	S
3	1	25	S	22	S	31	S	24	S
	2	25	S	22	S	33	S	23	S
	3	25	S	22	S	31	S	23	S
4	1	17	R	0	R	0	R	24	S
	2	17	R	0	R	0	R	23	S
	3	17	R	0	R	0	R	23	S
5	1	15	I	25	S	23	S	20	S
	2	16	I	25	S	23	S	20	S
	3	16	I	25	S	23	S	22	S
6	1	19	S	37	S	0	R	0	R
	2	19	S	39	S	0	R	0	R
	3	19	S	39	S	0	R	0	R
7	1	17	I	25	S	36	S	29	S
	2	17	I	25	S	36	S	29	S
	3	17	I	26	S	37	S	29	S
8	1	17	I	36	S	29	S	0	R
	2	17	I	36	S	29	S	0	R
	3	17	I	36	S	29	S	0	R
9	1	20	R	38	S	26	S	0	R
	2	20	R	38	S	26	S	0	R
	3	20	R	36	S	26	S	0	R
10	1	17	R	27	S	34	S	0	R
	2	17	R	27	S	34	S	0	R
	3	19	R	27	S	34	S	0	R
11	1	10	R	28	S	40	S	29	S
	2	11	R	28	S	40	S	29	S
	3	10	R	28	S	40	S	29	S
13	1	17	I	26	S	38	S	27	S
	2	17	I	26	S	38	S	27	S
	3	17	I	27	S	38	S	27	S
18	1	19	S	21	S	35	S	25	S
	2	19	S	21	S	35	S	25	S
	3	19	S	22	S	36	S	25	S
19	1	18	S	22	S	31	S	24	S
	2	18	S	22	S	31	S	24	S
	3	19	S	22	S	33	S	24	S
20	1	17	I	29	S	29	S	23	S
	2	17	I	29	S	29	S	24	S
	3	17	I	29	S	29	S	24	S

No. Sampel	Replikasi	Diameter zona hambat antibiotik (mm) dan tingkat kepekaan antibiotik							
		Amc	PS	Fosfo	PS	Sipro	PS	Kotri	PS
21	1	15	I	20	S	27	S	0	R
	2	16	I	20	S	27	S	0	R
	3	16	I	20	S	27	S	0	R
22	1	18	S	29	S	30	S	29	S
	2	18	S	28	S	30	S	27	S
	3	18	S	29	S	30	S	27	S
23	1	12	R	25	S	36	S	27	S
	2	12	R	25	S	36	S	27	S
	3	11	R	25	S	36	S	26	S
24	1	11	R	28	S	36	S	25	S
	2	11	R	27	S	37	S	25	S
	3	11	R	29	S	37	S	25	S
25	1	17	I	27	S	36	S	0	R
	2	17	I	27	S	36	S	0	R
	3	17	I	27	S	36	S	0	R
26	1	19	S	30	S	0	R	0	R
	2	19	S	30	S	0	R	0	R
	3	18	S	32	S	0	R	0	R
27	1	17	I	30	S	36	S	0	R
	2	17	I	30	S	36	S	0	R
	3	17	I	31	S	36	S	0	R
28	1	20	S	27	S	0	R	29	S
	2	20	S	27	S	0	R	29	S
	3	21	S	28	S	0	R	29	S
29	1	11	R	36	S	29	S	0	R
	2	11	R	36	S	29	S	0	R
	3	11	R	38	S	29	S	0	R
30	1	15	I	20	S	27	S	0	R
	2	15	I	20	S	27	S	0	R
	3	16	I	22	S	27	S	0	R
ATCC 13883	1	21	S	19	S	27	S	25	S
	2	21	S	18	S	27	S	25	S
	3	23	S	17	S	28	S	23	S

Perhitungan Rumus Prosentase (%)

a. Amoksisilin-klavulanat

$$\text{Resisten} = \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\%$$

$$= \frac{8}{25} \times 100\% = 32\%$$

$$\text{Susceptible} = \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\%$$

$$= \frac{8}{25} \times 100\% = 32\%$$

$$\begin{aligned}\text{Intermediate} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{9}{25} \times 100\% = 36\%\end{aligned}$$

b. Fosfomisin

$$\begin{aligned}\text{Resisten} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{1}{25} \times 100\% = 4\%\end{aligned}$$

$$\begin{aligned}\text{Susceptible} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{24}{25} \times 100\% = 96\%\end{aligned}$$

c. Siprofloksasin

$$\begin{aligned}\text{Resisten} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{4}{25} \times 100\% = 16\%\end{aligned}$$

$$\begin{aligned}\text{Susceptible} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{21}{25} \times 100\% = 84\%\end{aligned}$$

d. Kotrimoksazol

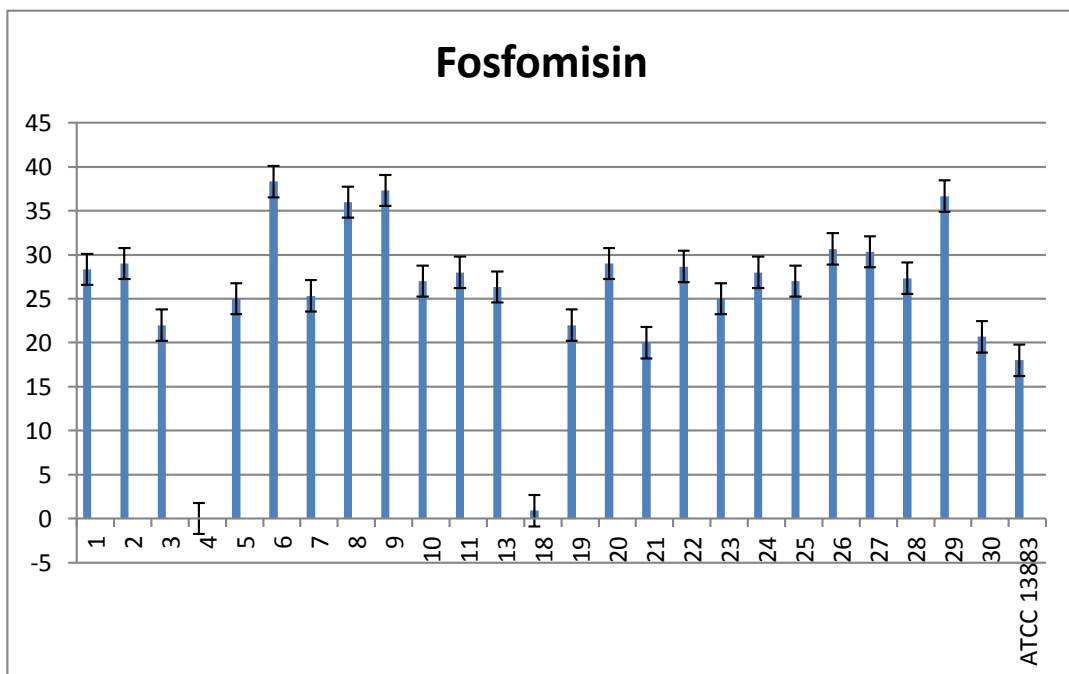
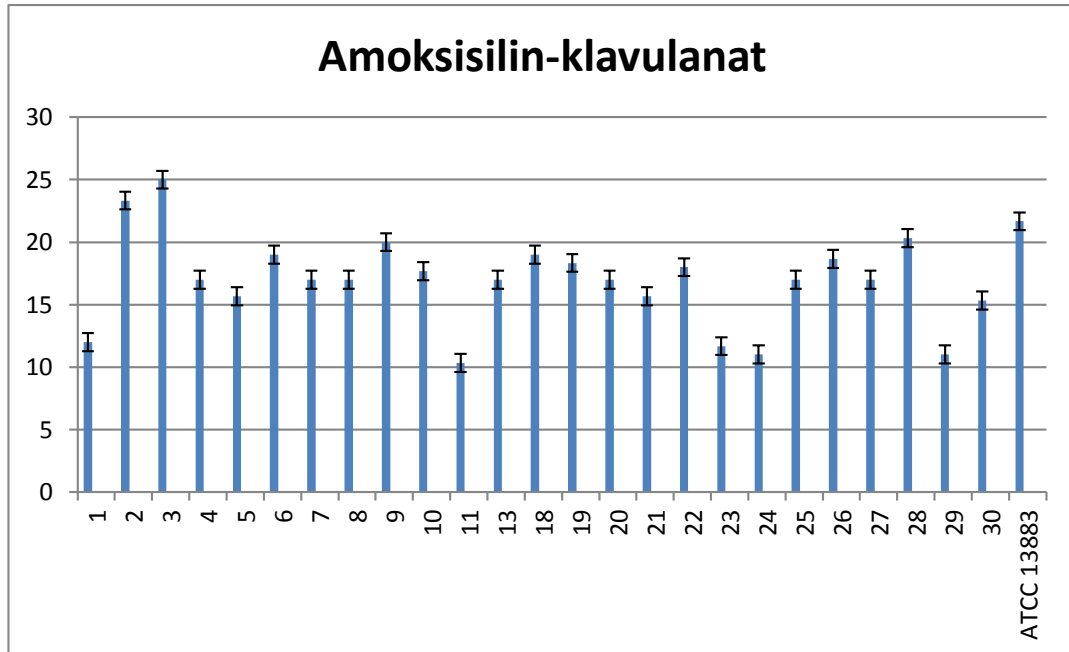
$$\begin{aligned}\text{Resisten} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{10}{25} \times 100\% = 40\%\end{aligned}$$

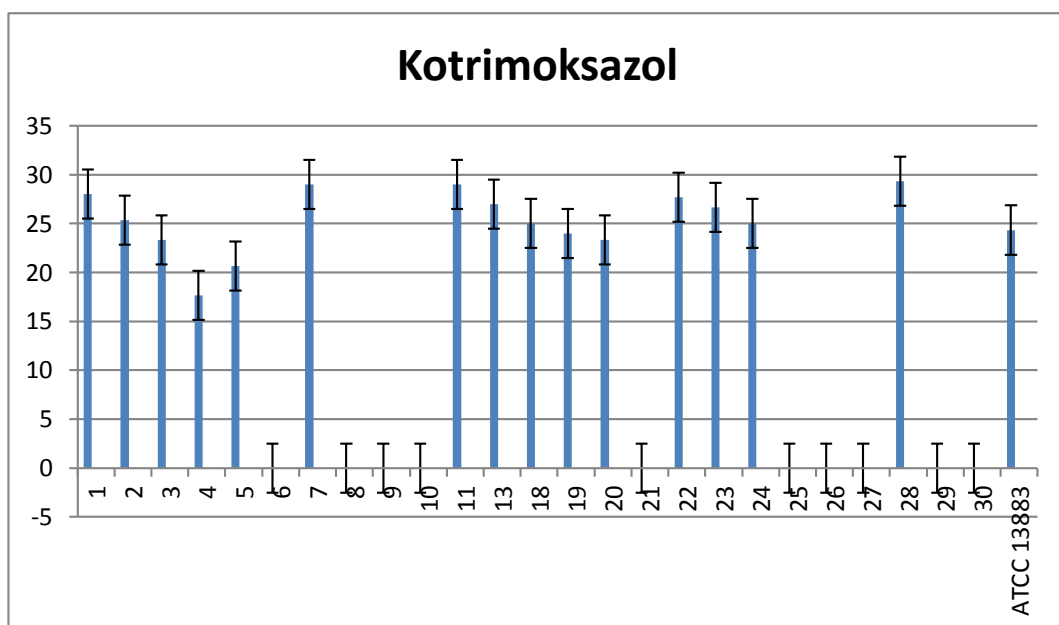
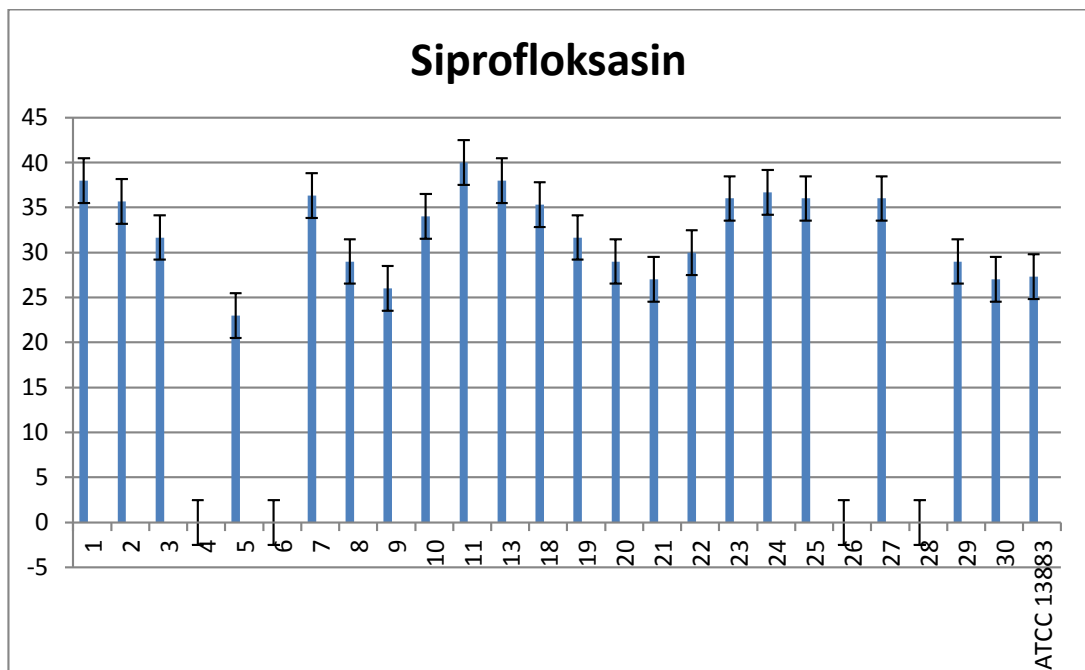
$$\begin{aligned}\text{Susceptible} &= \frac{\text{Jumlah total pola resisten}}{\text{Jumlah total sampel bakteri yang dilakukan}} \times 100\% \\ &= \frac{15}{25} \times 100\% = 60\%\end{aligned}$$

2. Hasil rata-rata dari uji sensitivitas

No Petri	Siprofloksasin		Kotrimoksazol		Fosfomisin		Amoksisilin-klavulanat	
	D (mm)	PS	D (mm)	PS	D (mm)	PS	D (mm)	PS
1	38±0,00	R	28±0,00	S	28,33±0,58	S	12±0,00	S
2	35,67±0,58	S	25,33±1,53	S	29±0,00	S	23,33±0,58	S
3	31,67±1,15	S	23,33±0,58	S	22±0,00	S	25±0,00	S
4	0±0,00	R	17,67±0,58	S	0±0,00	R	17±0,00	S
5	23±0,00	I	20,67±1,15	S	25±0,00	S	15,67±0,58	S
6	0±0,00	S	0±0,00	R	38,33±1,15	S	19±0,00	R
7	36,33±0,58	I	29±0,00	S	25,33±0,58	S	17±0,00	S
8	29±0,00	I	0±0,00	R	36±0,00	S	17±0,00	R
9	26±0,00	R	0±0,00	R	37,33±1,15	S	20±0,00	R
10	34±0,00	R	0±0,00	R	27±0,00	S	17,67±1,15	R
11	40±0,00	R	29±0,00	S	28±0,00	S	10,33±0,58	S
13	38±0,00	I	27±0,00	S	26,33±0,58	S	17±0,00	S
18	35,33±0,58	S	25±0,00	S	21,33±0,58	S	19±0,00	S
19	31,67±0,15	S	24±0,00	S	22±0,00	S	18,33±0,58	S
20	29±0,00	I	23,33±0,58	S	29±0,00	S	17±0,00	S
21	27±0,00	I	0±0,00	R	20±0,00	S	15,67±0,58	R
22	30±0,00	S	27,67±1,15	S	28,67±0,58	S	18±0,00	S
23	36±0,00	R	26,67±0,58	S	25±0,00	S	11,67±0,58	S
24	36,67±0,58	R	25±0,00	S	28±1,00	S	11±0,00	S
25	36±0,00	I	0±0,00	R	27±0,00	S	17±0,00	R
26	0±0,00	S	0±0,00	R	30,67±1,15	S	18,67±0,58	R
27	36±0,00	I	0±0,00	R	30,33±0,58	S	17±0,00	R
28	0±0,00	S	29,33±0,58	S	27,33±0,58	S	20,33±0,58	S
29	29±0,00	R	0±0,00	R	36,67±1,15	S	11±0,00	R
30	27±0,00	I	0±0,00	R	20,67±1,15	S	15,33±0,58	R
ATCC 13883	27,33±0,58	S	24,33±1,15	S	18±1,00	S	21,67±1,15	S
Total Rata-rata	712,67 38		405,33 15,59		666,89 25,65		442,67 17,03	

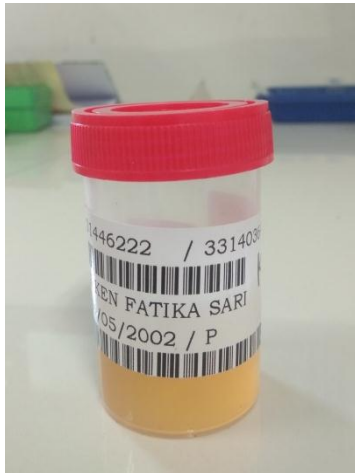
Lampiran 2. Hasil tabulasi analisis perbedaan bakteri *Klebsiella* sp. hasil isolasi dengan bakteri *Klebsiella* sp. ATCC





Lampiran 3. Sampel urine pasien infeksi saluran kemih di RSUD Dr. Moewardi

SAMPEL 1



SAMPEL 2



SAMPEL 3



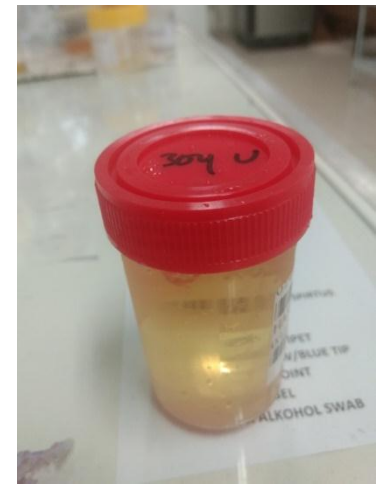
SAMPEL 4



SAMPEL 5



SAMPEL 6



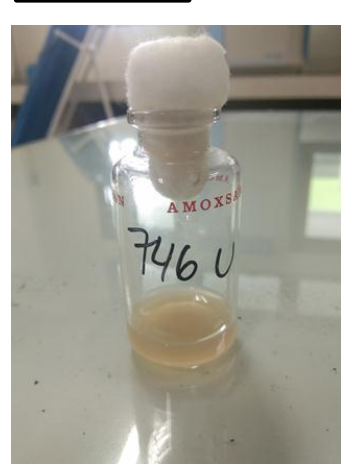
SAMPEL 7



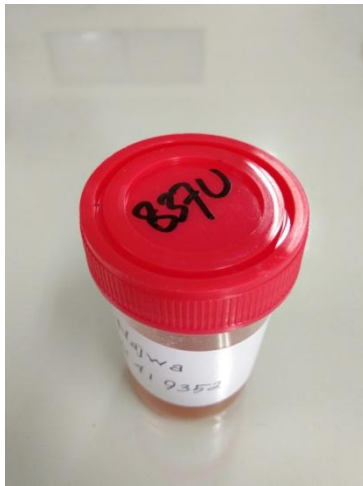
SAMPEL 8



SAMPEL 9



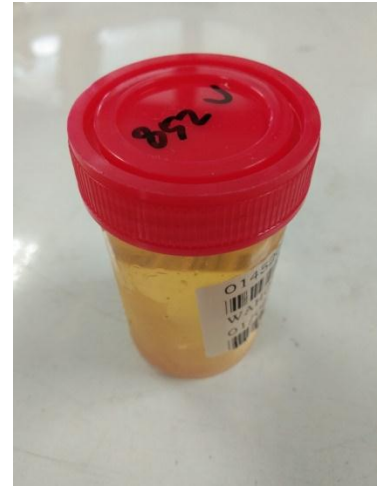
SAMPL 10



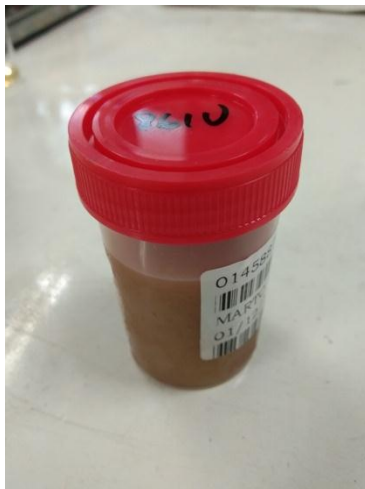
SAMPL 11



SAMPL 12



SAMPL 13



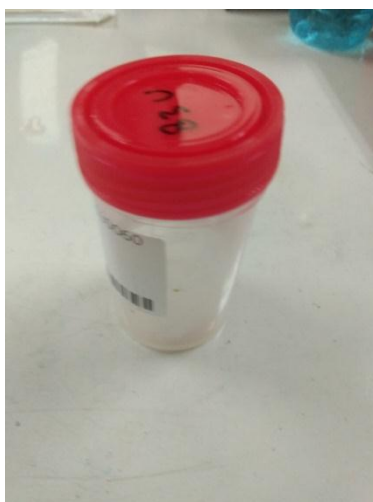
SAMPL 14



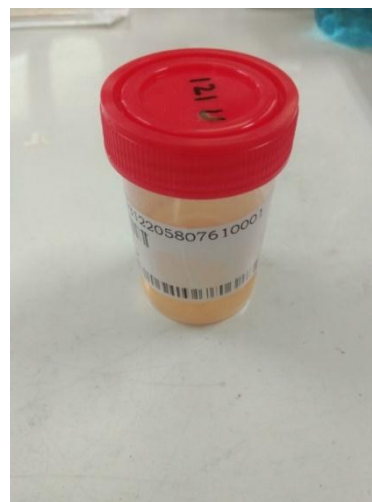
SAMPL 15



SAMPL 16



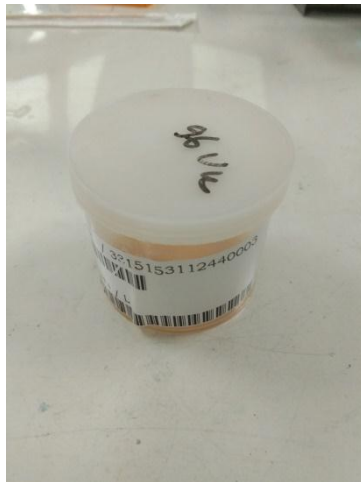
SAMPL 17



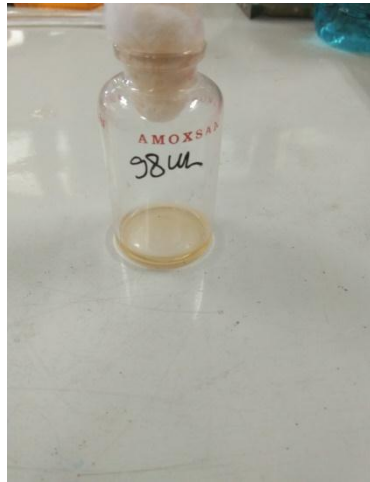
SAMPL 18



SAMPEL 19



SAMPEL 20



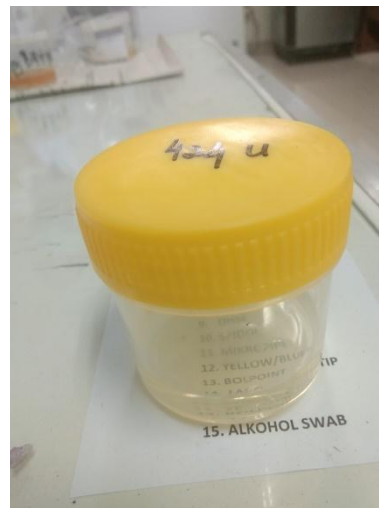
SAMPEL 21



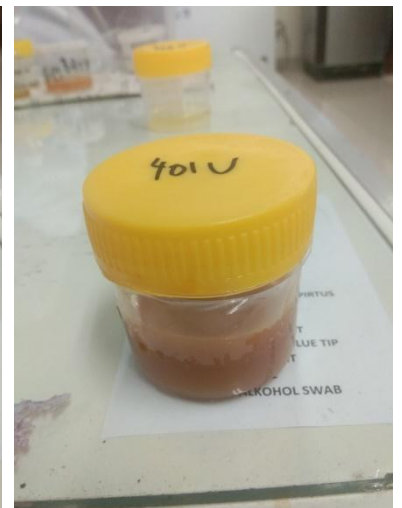
SAMPEL 22



SAMPEL 23



SAMPEL 24



SAMPEL 25



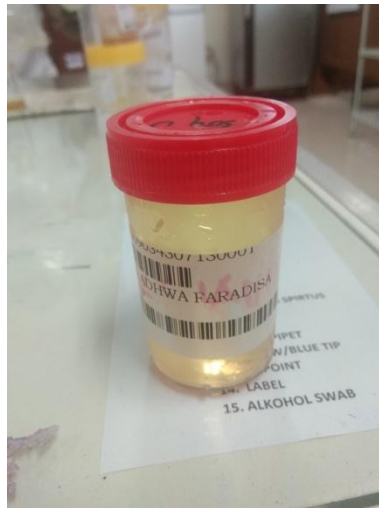
SAMPEL 26



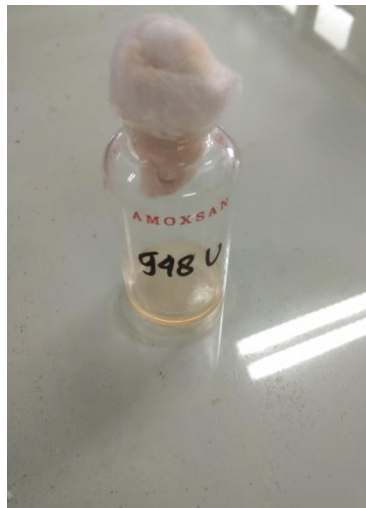
SAMPEL 27



SAMPL 28



SAMPL 29



SAMPL 30

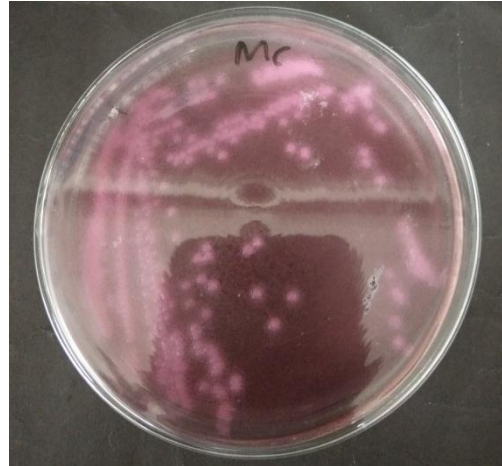


Lampiran 4. Hasil isolasi bakteri *Klebsiella* sp. pada media Mac Conkey Agar

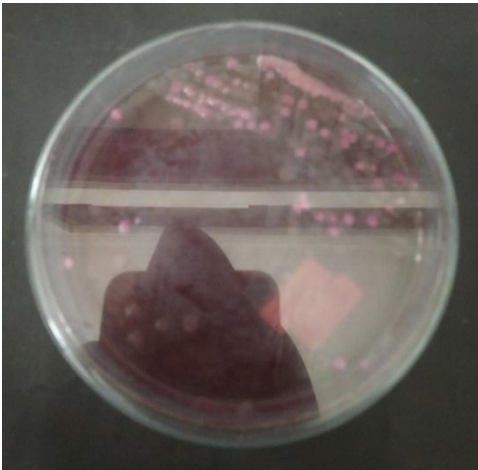
SAMPEL 1



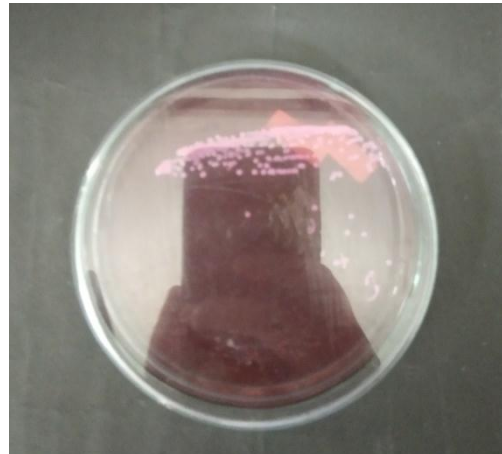
SAMPEL 2



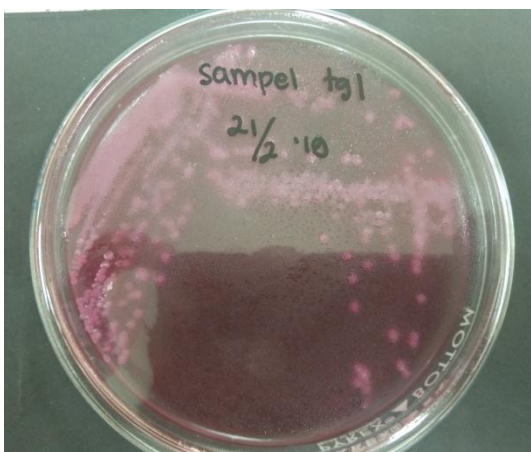
SAMPEL 3



SAMPEL 4



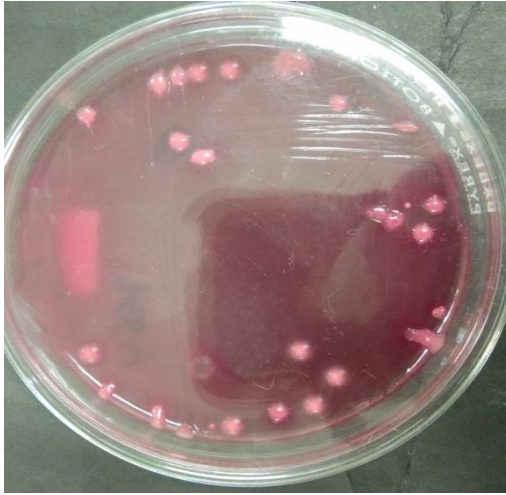
SAMPEL 5



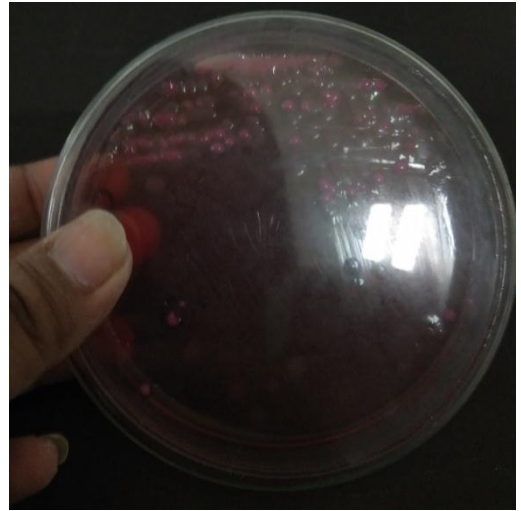
SAMPEL 6



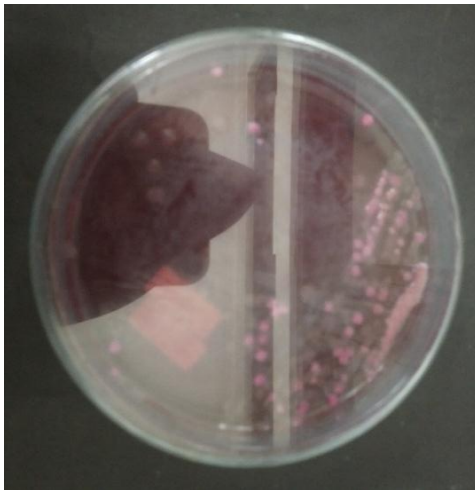
SAMP EL 7



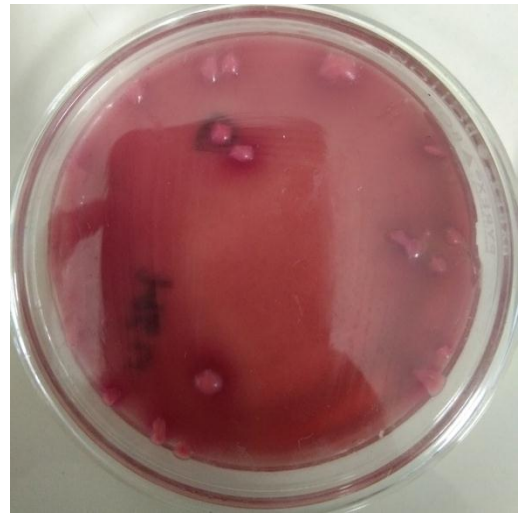
SAMP EL 8



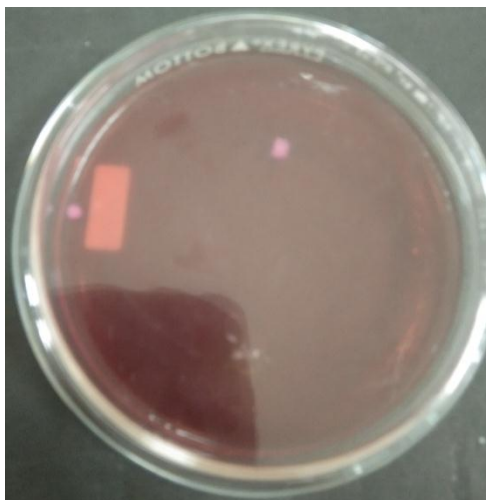
SAMP EL 9



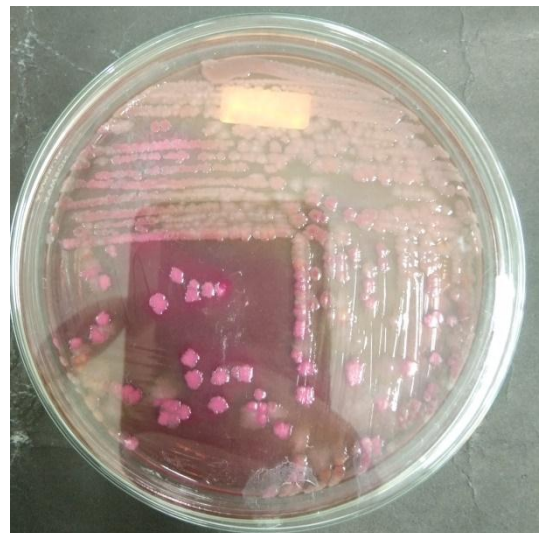
SAMP EL 10



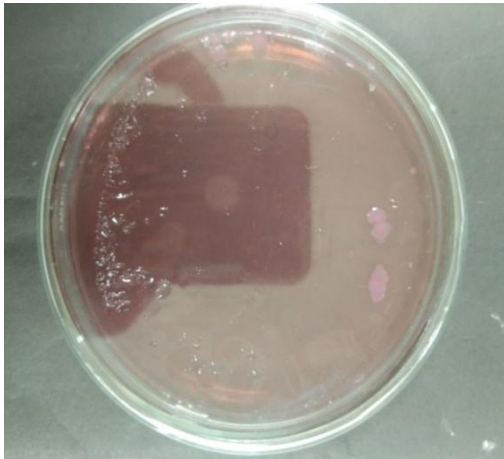
SAMP EL 11



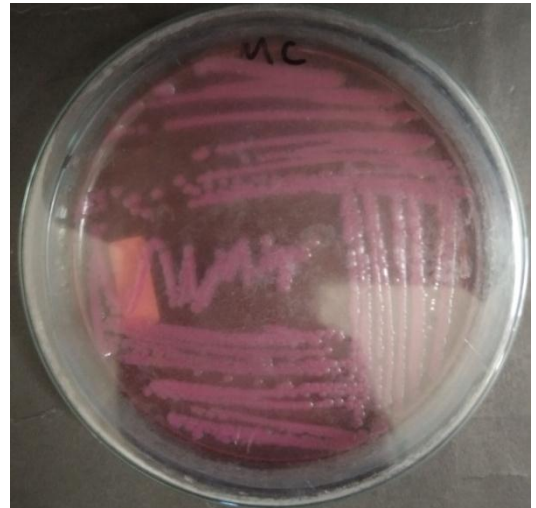
SAMP EL 12



SAMPPEL 13



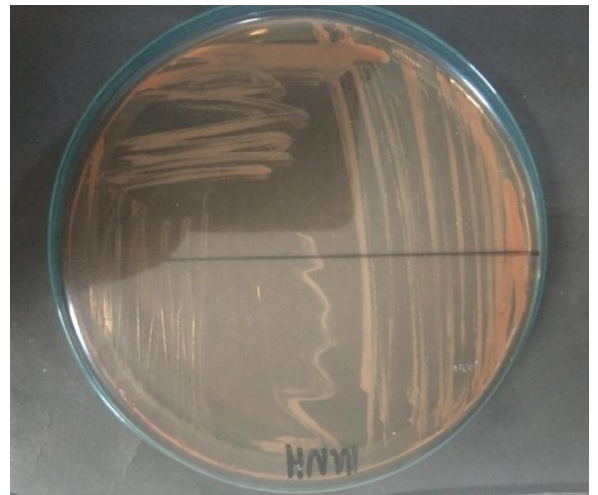
SAMPPEL 14



SAMPPEL 15



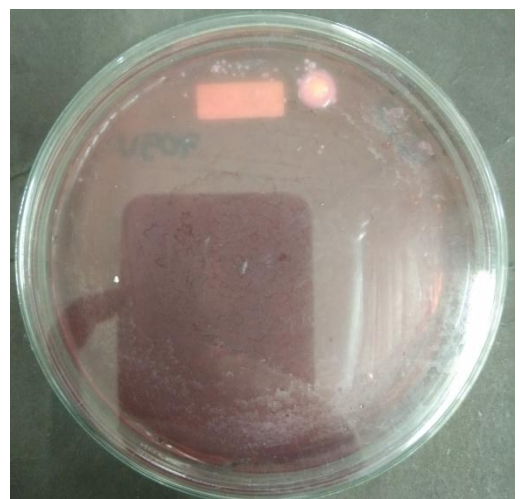
SAMPPEL 16



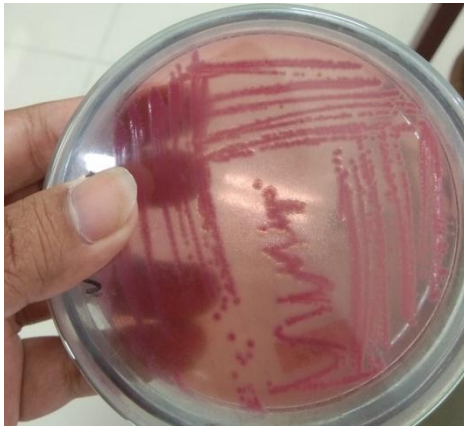
SAMPPEL 17



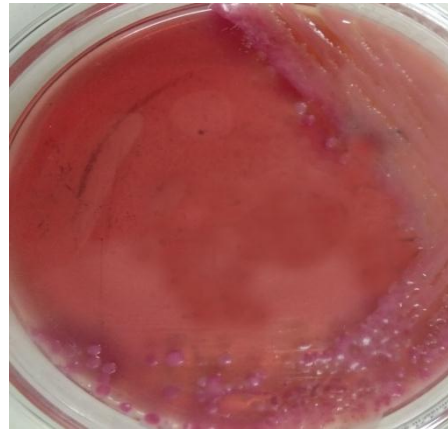
SAMPPEL 18



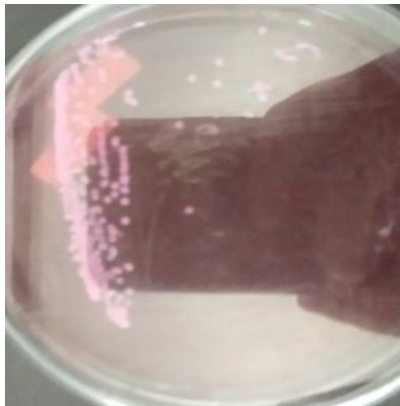
SAMPL 19



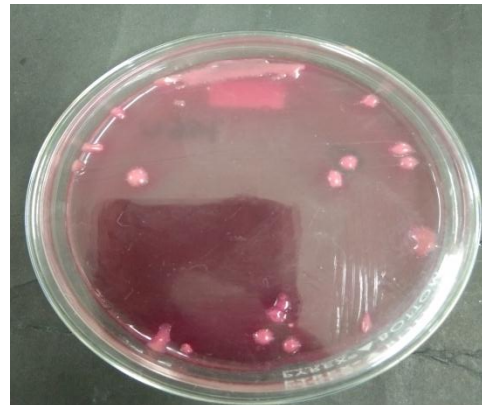
SAMPL 20



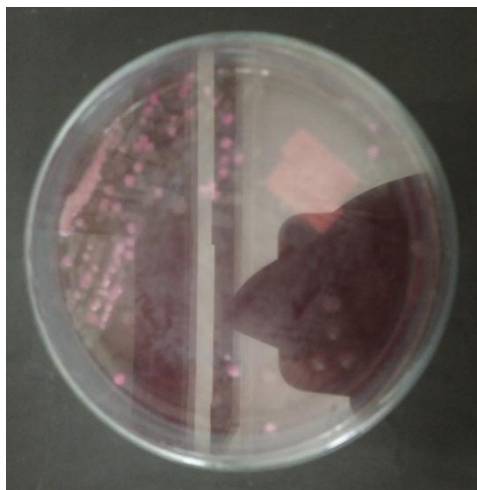
SAMPL 21



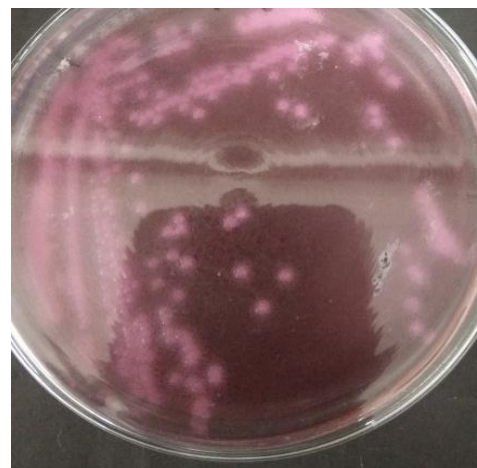
SAMPL 22



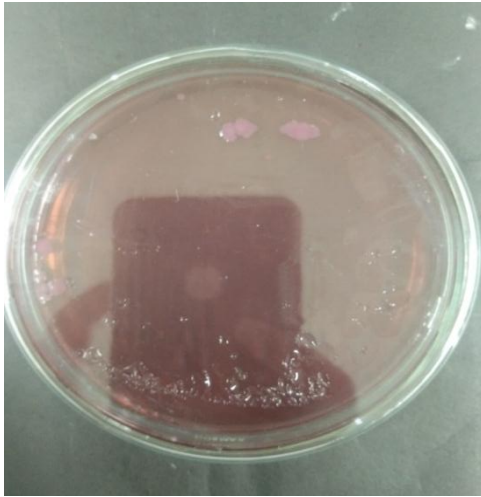
SAMPL 23



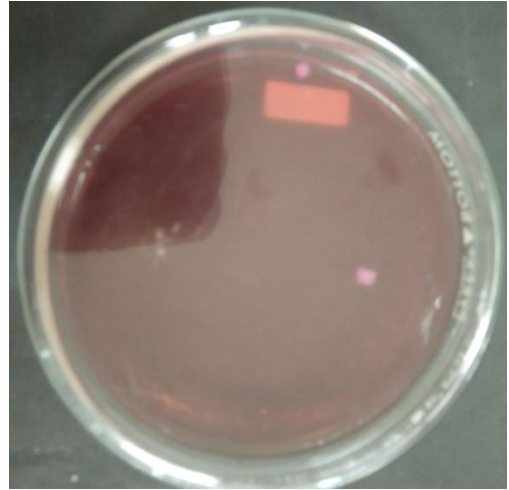
SAMPL 24



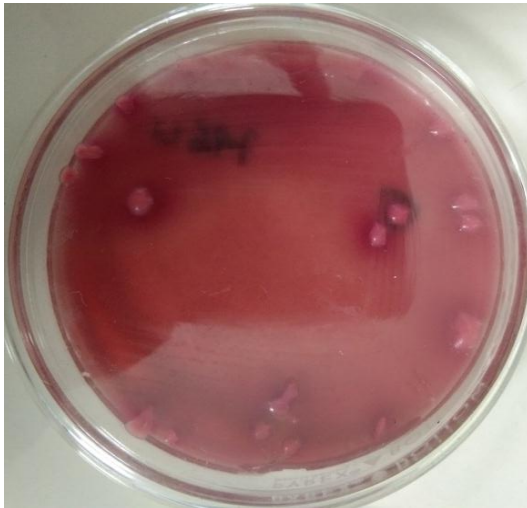
SAMPOL 25



SAMPOL 26



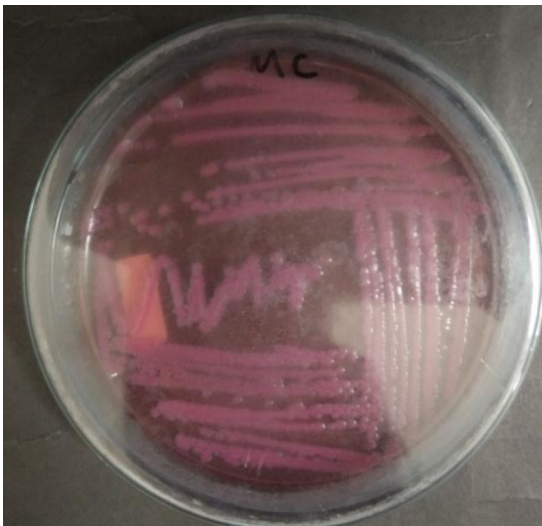
SAMPOL 27



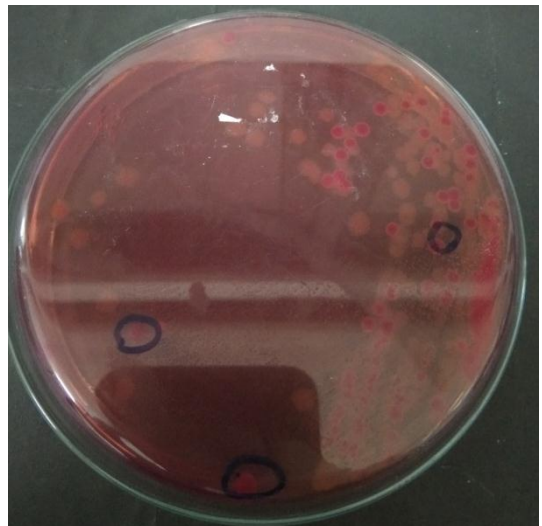
SAMPOL 28



SAMPOL 29

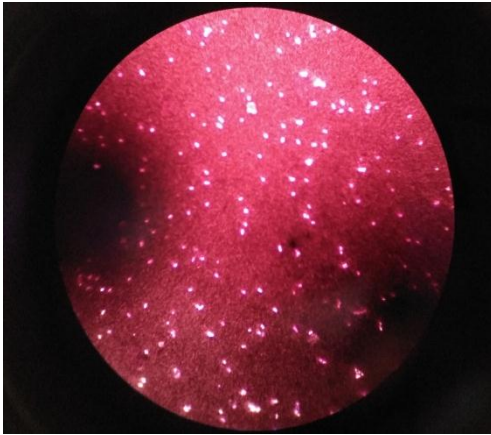


SAMPOL 30

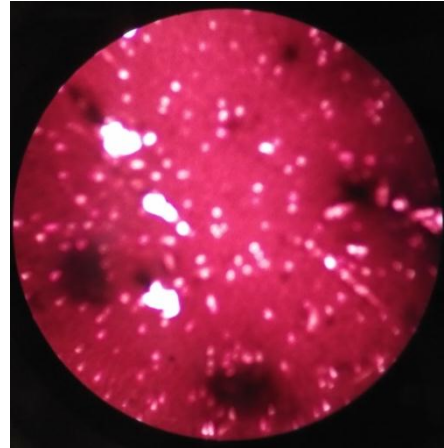


Lampiran 5. Hasil identifikasi pewarnaan kapsul bakteri *Klebsiella* sp.

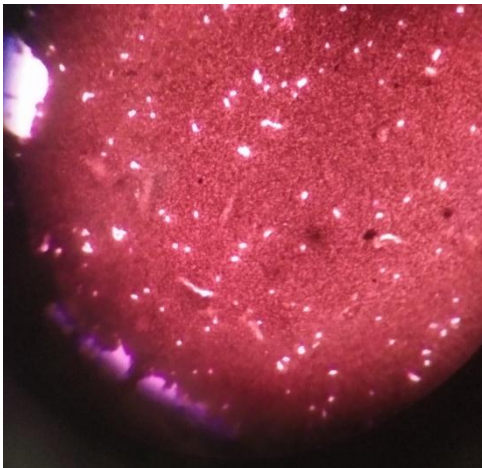
SAMPEL 1



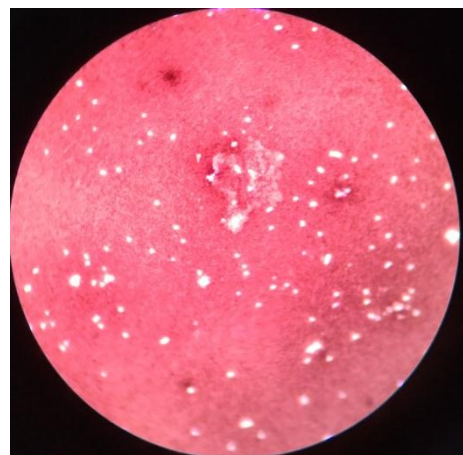
SAMPEL 2



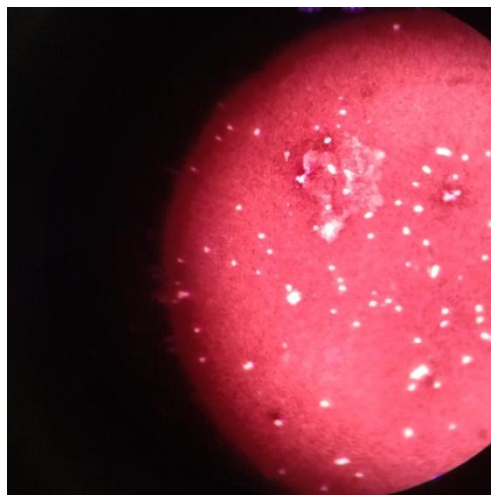
SAMPEL 3



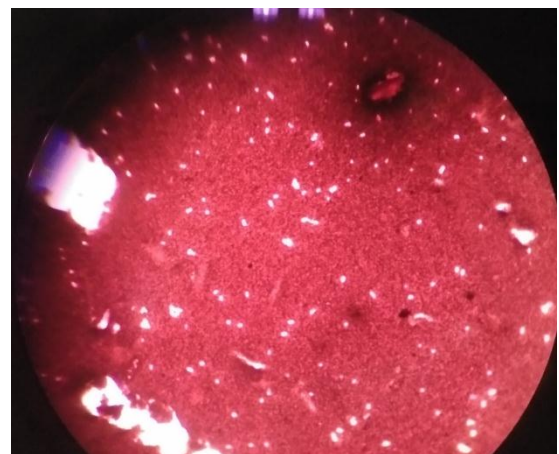
SAMPEL 4



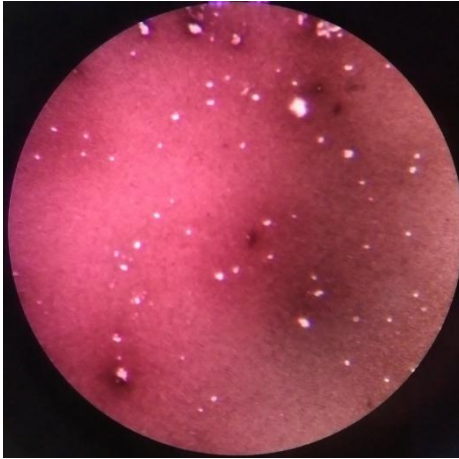
SAMPEL 5



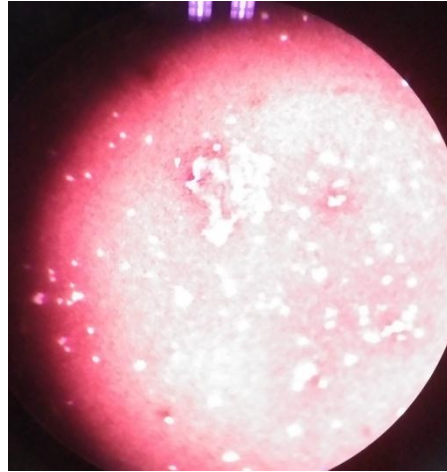
SAMPEL 6



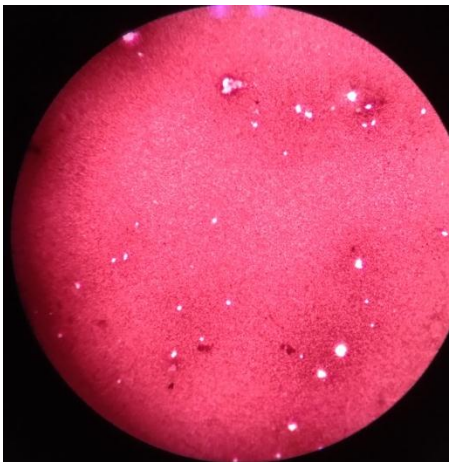
SAMPEL 7



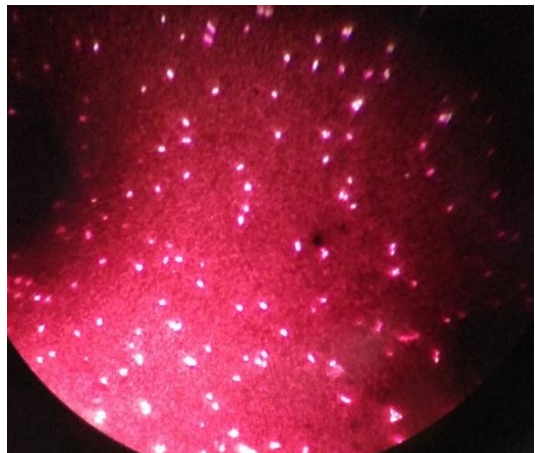
SAMPEL 8



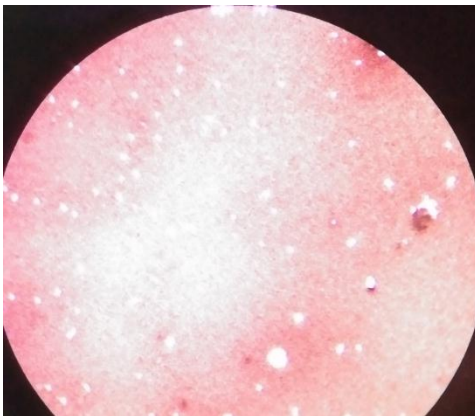
SAMPEL 9



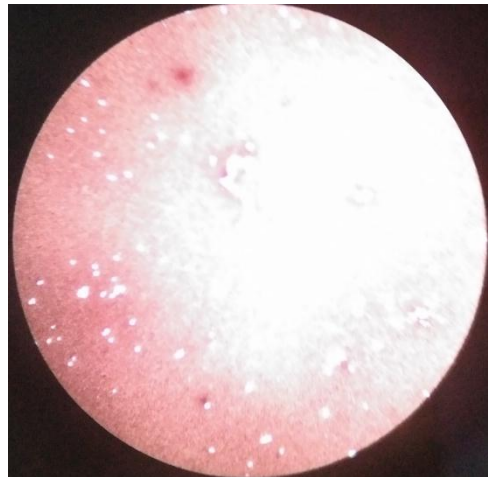
SAMPEL 10



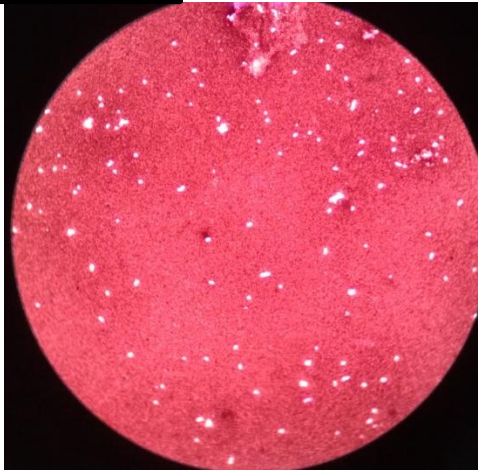
SAMPEL 11



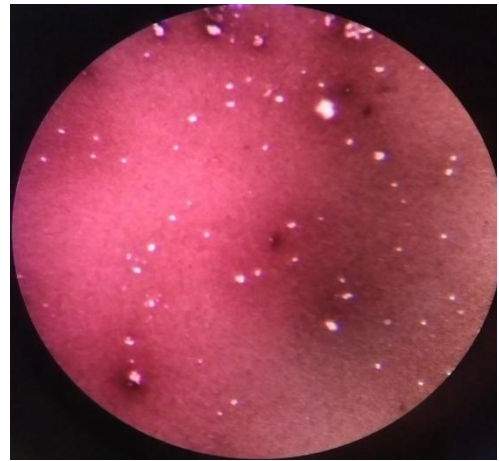
SAMPEL 13



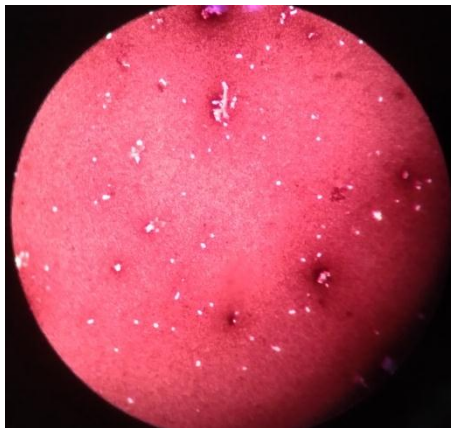
SAMPPEL 18



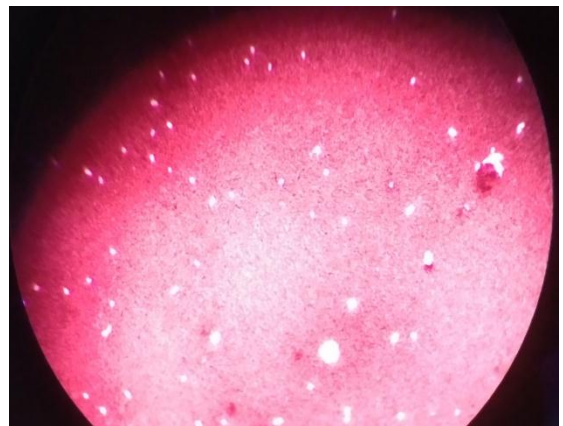
SAMPPEL 19



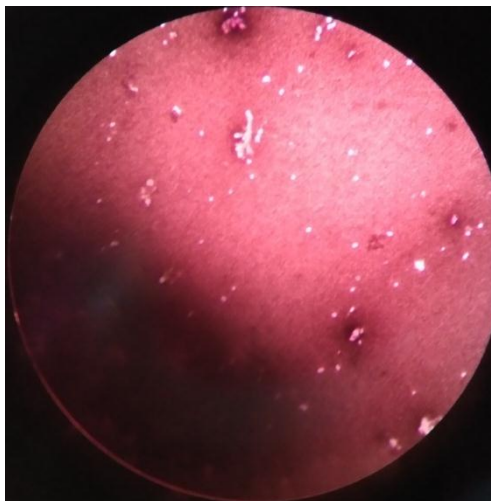
SAMPPEL 20



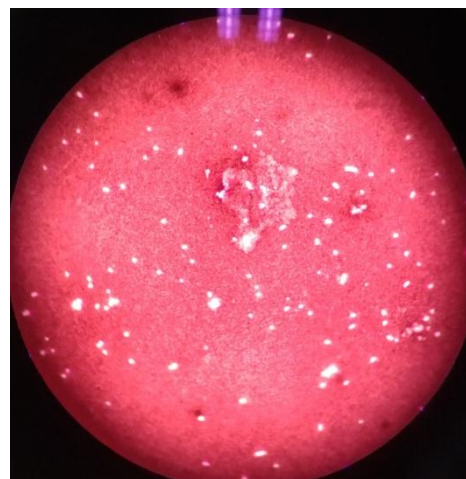
SAMPPEL 21



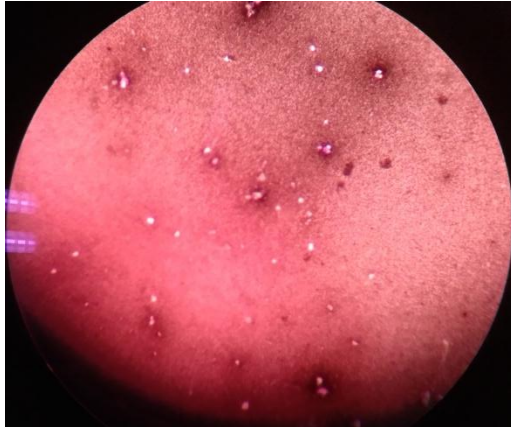
SAMPPEL 22



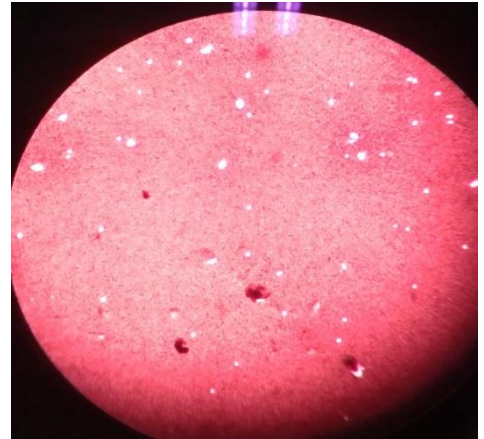
SAMPPEL 23



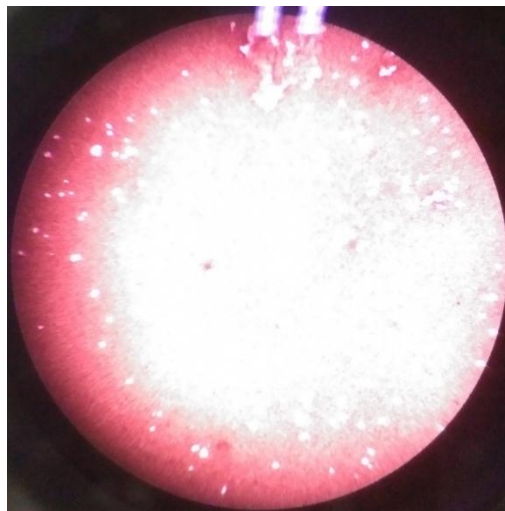
SAMPL 24



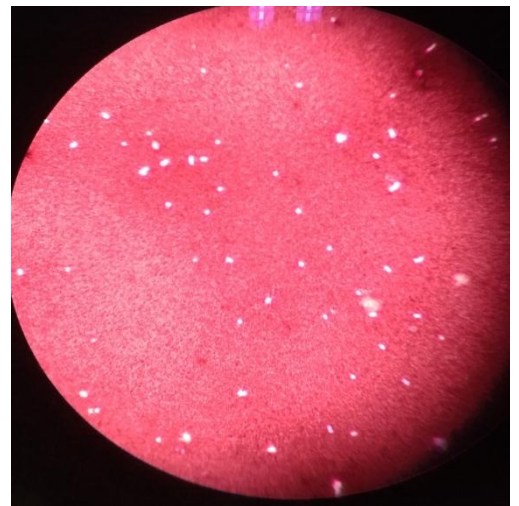
SAMPL 25



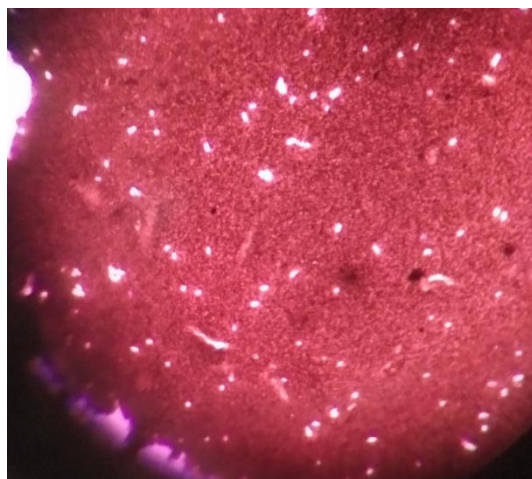
SAMPL 26



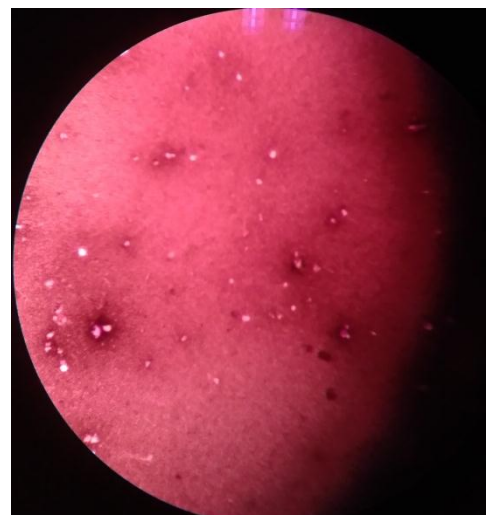
SAMPL 27



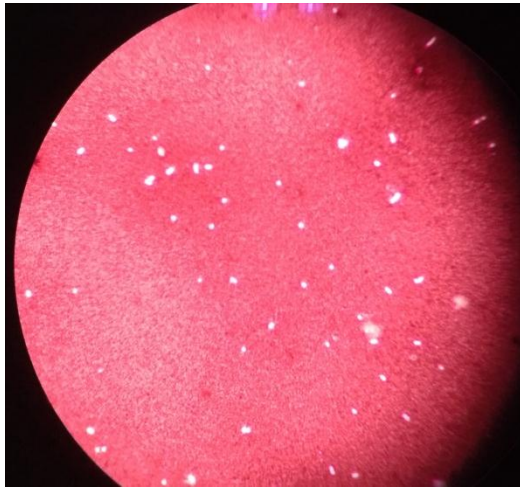
SAMPL 28



SAMPL 29

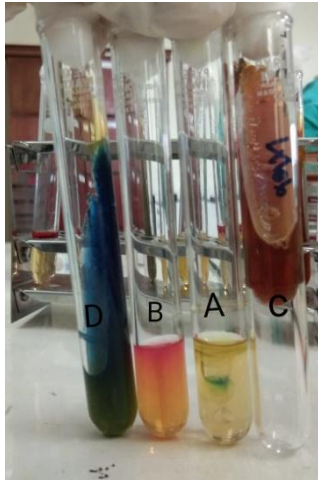


SAMPPEL 30



Lampiran 6. Hasil identifikasi bakteri *Klebsiella sp.* dengan uji biokimia

SAMPEL 1



SAMPEL 2



SAMPEL 3



SAMPEL 4



SAMPEL 5



SAMPEL 6



SAMPEL 7



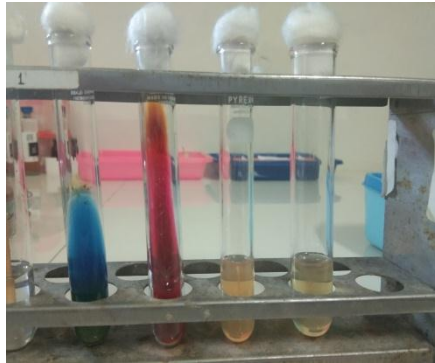
SAMPEL 8



SAMPEL 9



SAMPEL 10



SAMPEL 11



SAMPEL 13



SAMPEL 18



SAMPEL 19



SAMPEL 20



SAMPEL 21



SAMPEL 22



SAMPEL 23



SAMPL 24



SAMPL 25



SAMPL 26



SAMPL 27



SAMPL 28

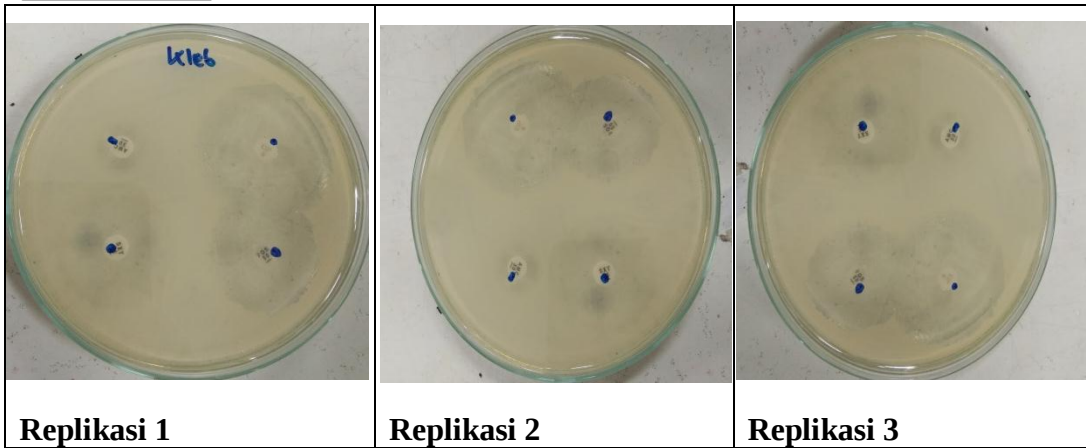
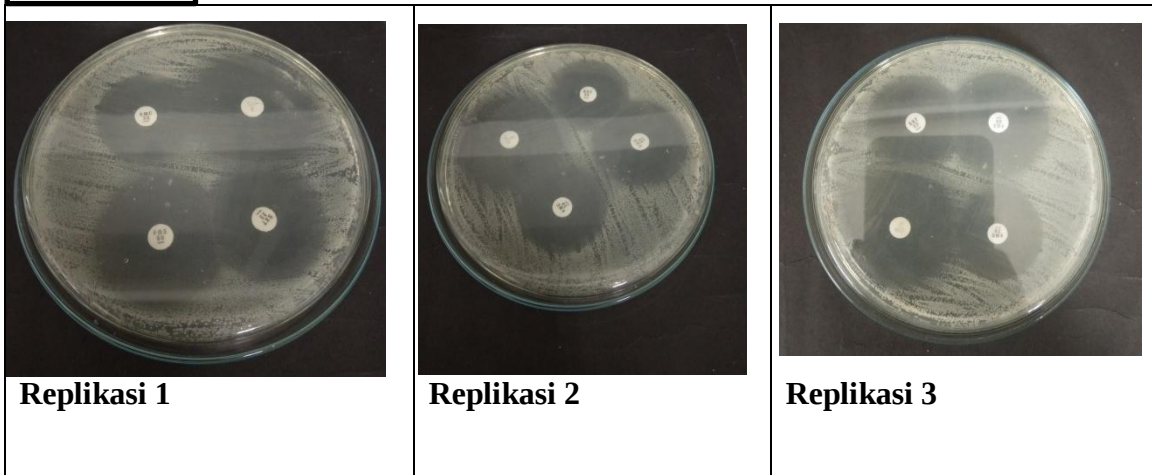
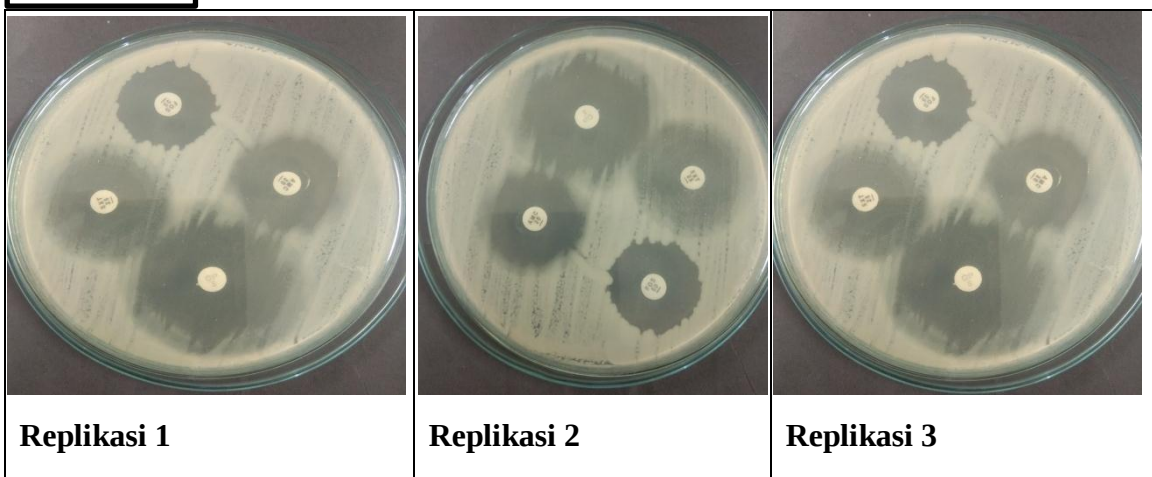


SAMPL 29



SAMPL 30



Lampiran 7. Hasil uji sensitivitas antibiotik terhadap *Klebsiella* sp.**SAMPEL 1****SAMPEL 2****SAMPEL 3**

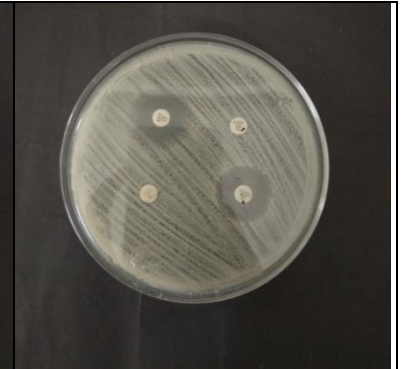
SAMPEL 4



, Replikasi 1

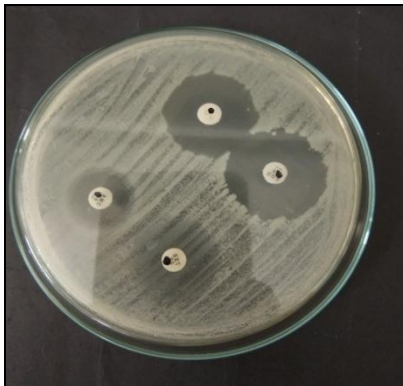


Replikasi 2



Replikasi 3

SAMPEL 5



Replikasi 1



Replikasi 2

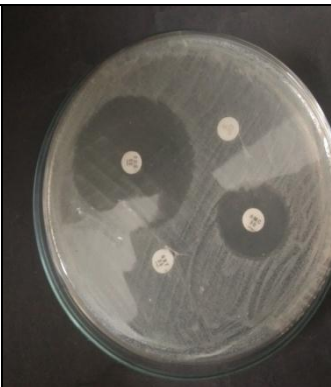


Replikasi 3

SAMPEL 6



Replikasi 1

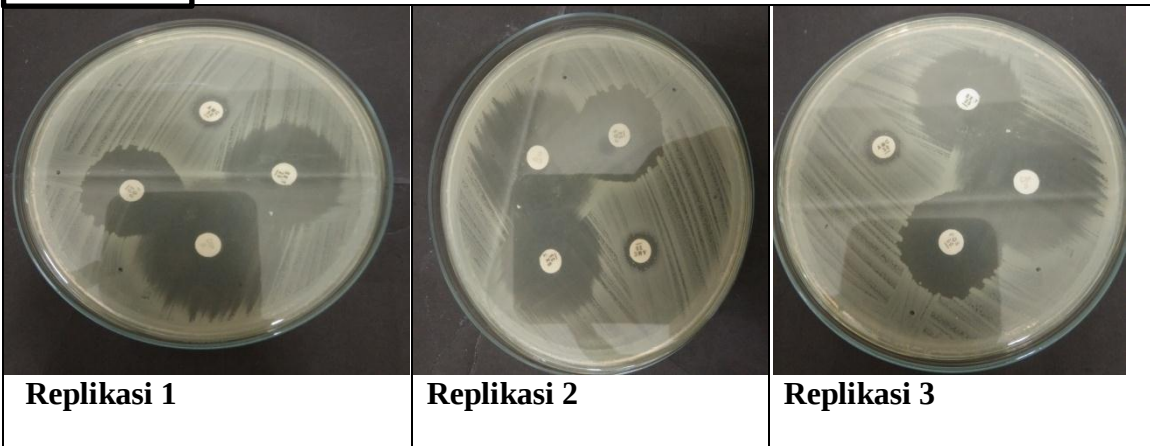


Replikasi 2

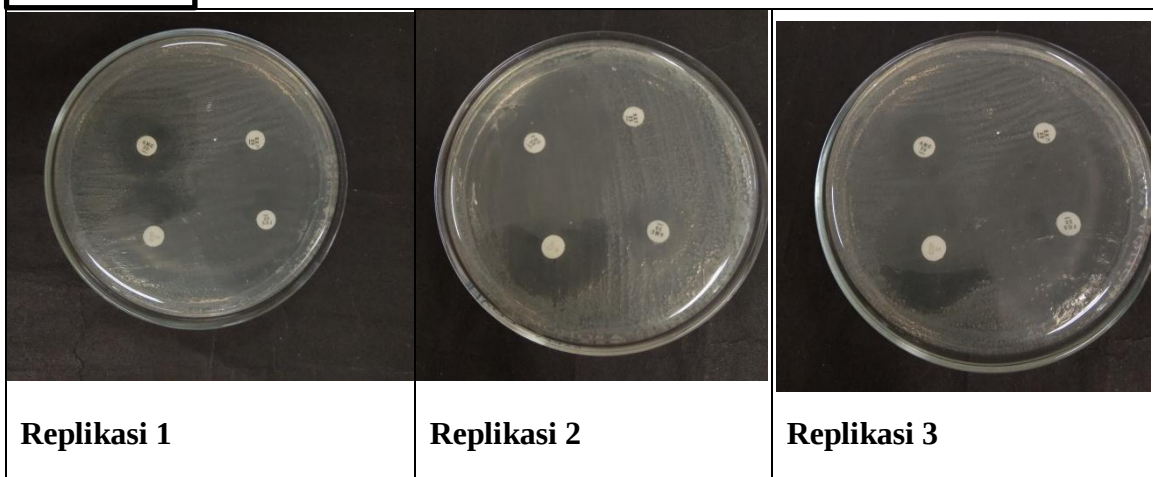


Replikasi 3

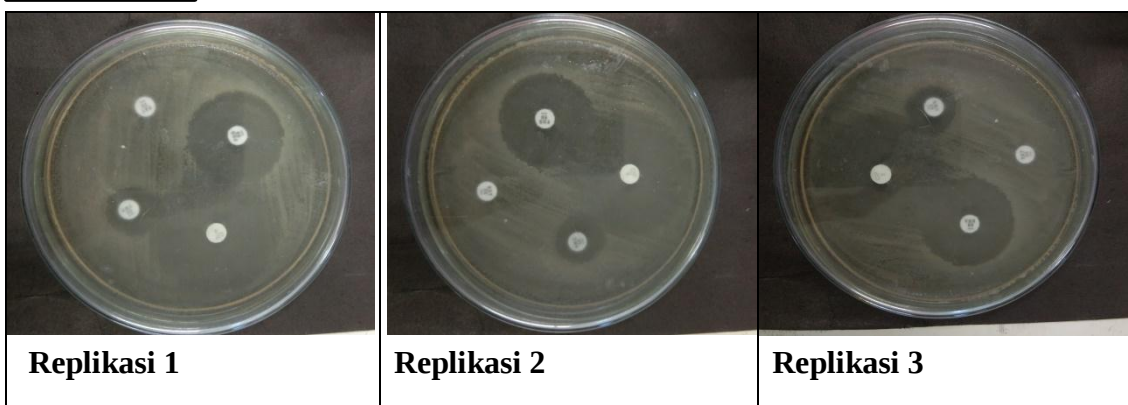
SAMPL 7



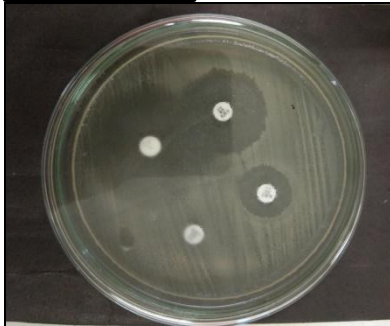
SAMPL 8



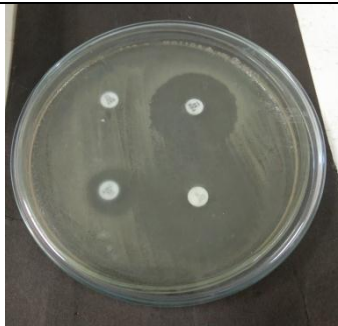
SAMPL 9



SAMPL 10



Replikasi 1



Replikasi 2



Replikasi 3

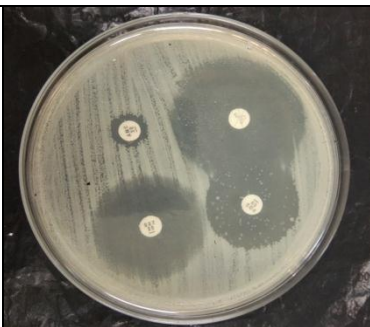
SAMPL 11



Replikasi 1



Replikasi 2



Replikasi 3

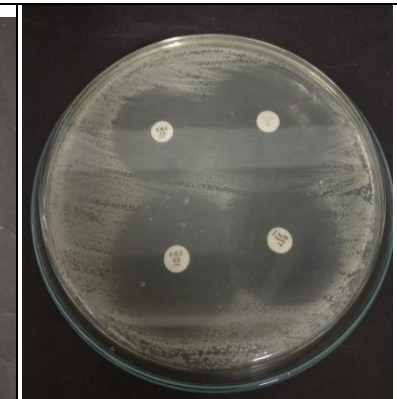
SAMPL 13



Replikasi 1



Replikasi 2

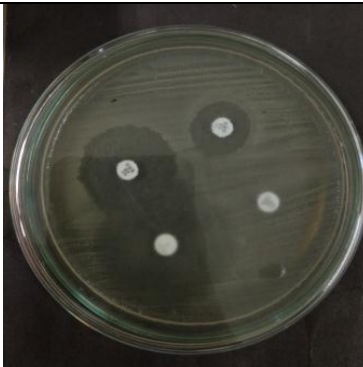


Replikasi 3

SAMPEL 18



Replikasi 1

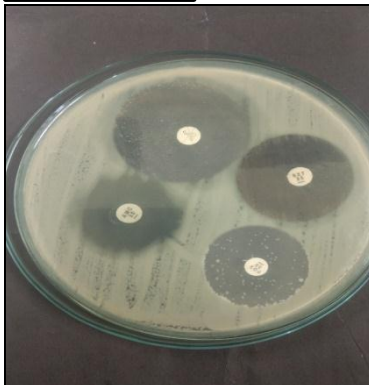


Replikasi 2



Replikasi 3

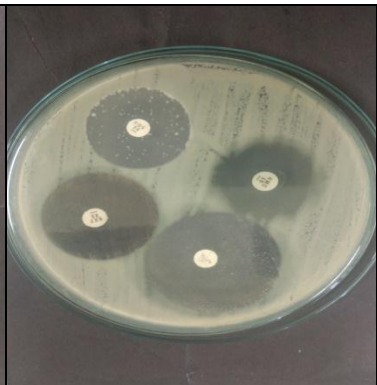
SAMPEL 19



Replikasi 1

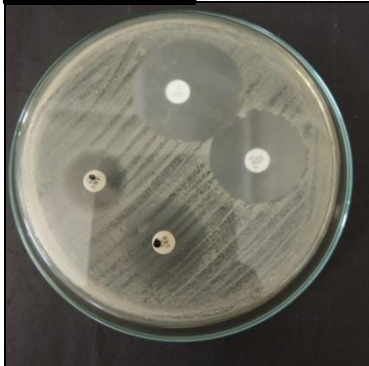


Replikasi 2

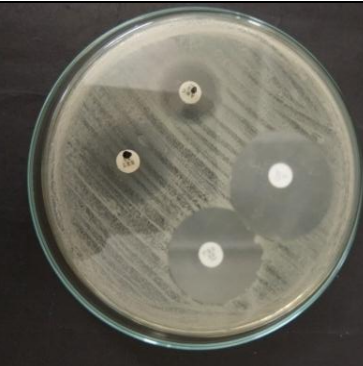


Replikasi 3

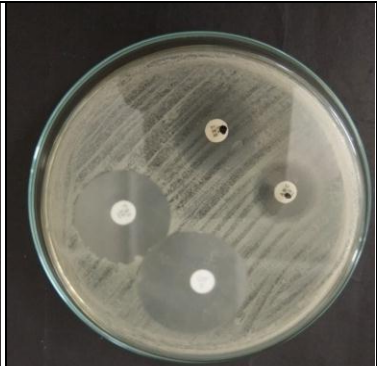
SAMPEL 20



Replikasi 1

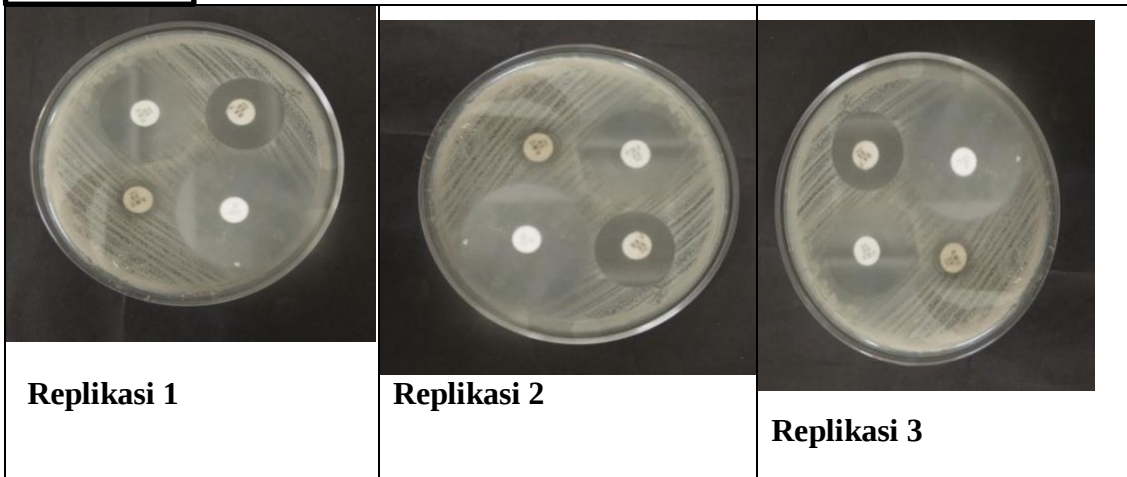


Replikasi 2

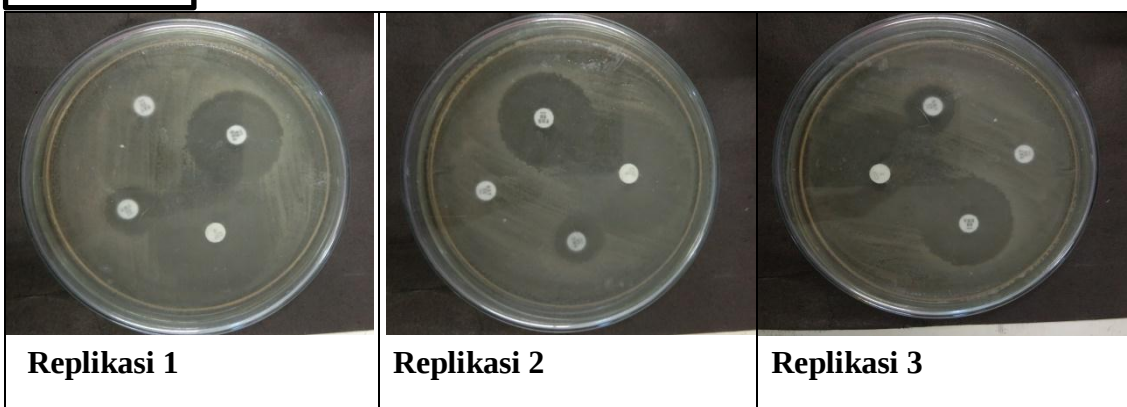


Replikasi 3

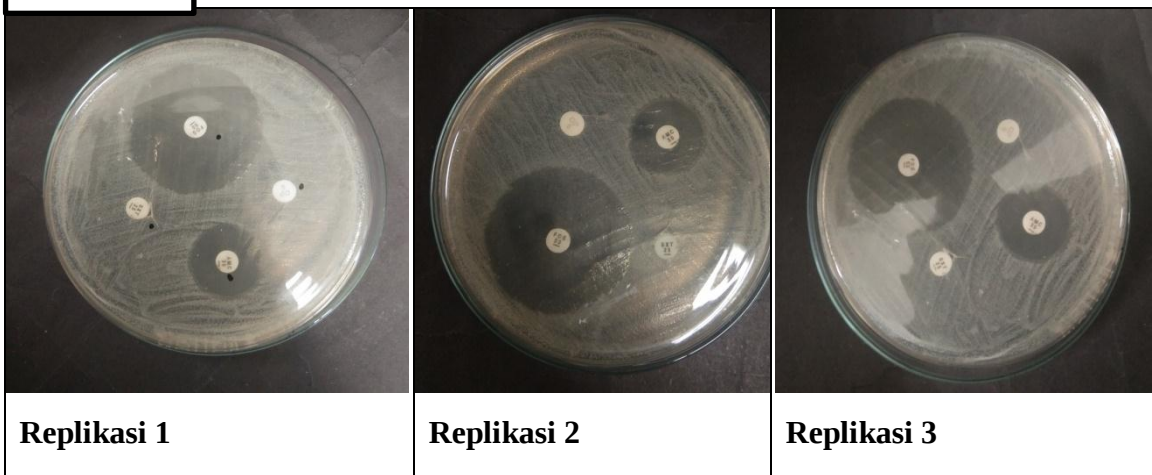
SAMPSEL 21



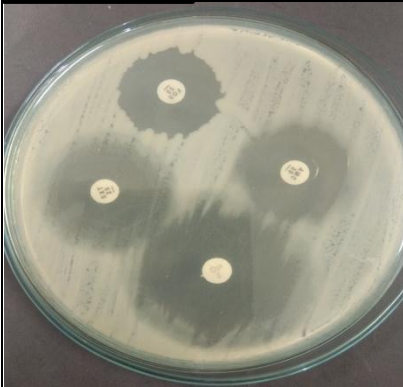
SAMPSEL 22



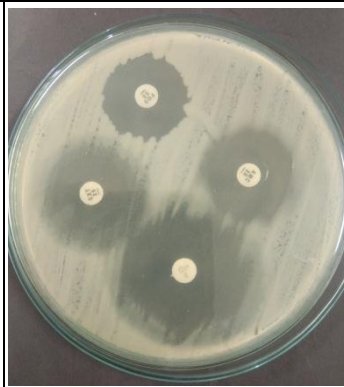
SAMPSEL 23



SAMPEL 24



Replikasi 1

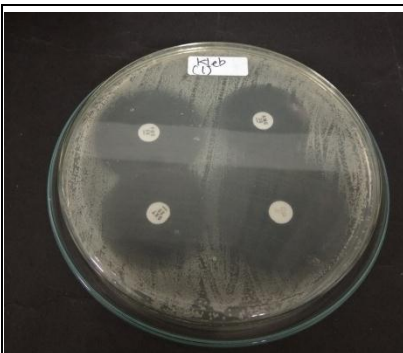


Replikasi 2

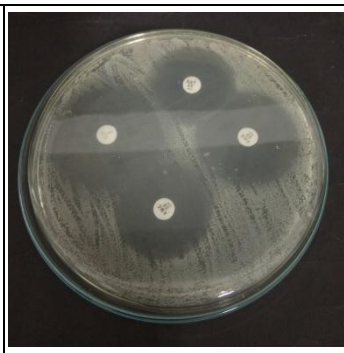


Replikasi 3

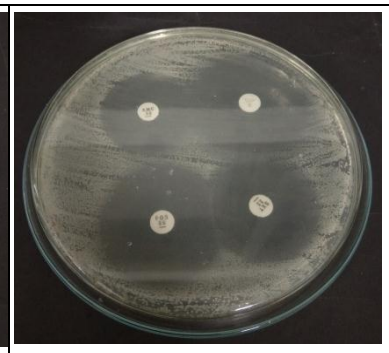
SAMPEL 25



Replikasi 1



Replikasi 2

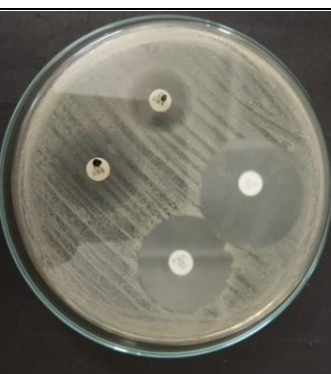


Replikasi 3

SAMPEL 26



Replikasi 1

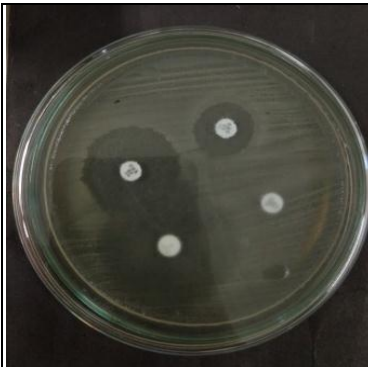


Replikasi 2



Replikasi 3

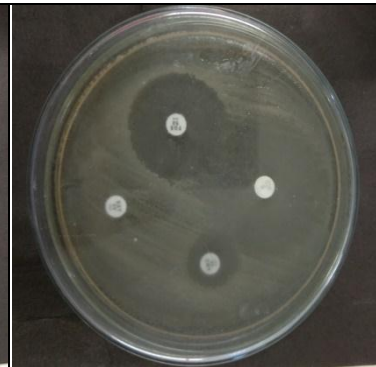
SAMPEL 27



Replikasi 1



Replikasi 2



Replikasi 3

SAMPEL 28



Replikasi 1



Replikasi 2



Replikasi 3

SAMPEL 29



Replikasi 1

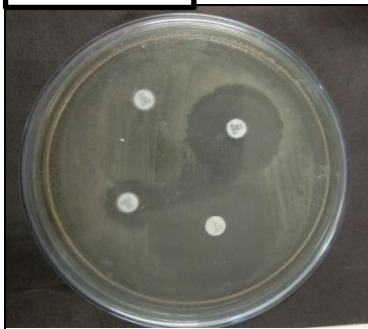


Replikasi 2



Replikasi 3

SAMPPEL 30



Replikasi 1



Replikasi 2



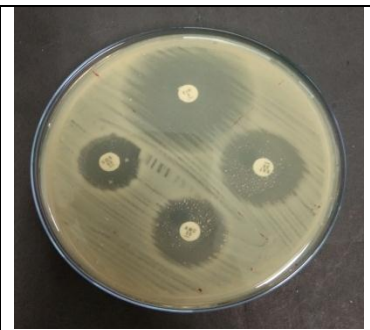
Replikasi 3

Klebsiella sp. ATCC 13883

Replikasi 1



Replikasi 2



Replikasi 3

Lampiran 8. Formulasi dan pembuatan media

1. Mac Conkey Agar

Pepton	17 g
Protease pepton	3 g
Lactose	10 g
Bile salts	1,5 g
Sodium chloride	5 g
Neutral red	0,03 g
Agar-agar	13,5 g
Aquadest	ad 1000 ml

pH 7,1 $\pm$ 0,2

2. Mueller Hinton Agar (MHA)

Ekstrak daging sapi	300 g
Asam kasein hidrolisata	17,5 g
Kanji	1,5 g
Agar	17,0 g
Aquadest	ad 1000 ml

pH 7,4 $\pm$ 0,2

Bahan-bahan diatas dilarutkan kedalam aquadest ad 1000 ml, dipanaskan sampai larut sempurna, kemudian disterilkan dengan autoklav pada suhu 121°C selama 15 menit dan dituang kedalam cawan petri (Bridson 1998).

3. Sulfida Indol Motility (SIM)

Pepton from casein	20 g
Pepton from meat	6 g
Ammonium iron (II) citrat	0,2 g

Sodium thiosulfat	0,2 g
Agar-agar	0,2 g
Aquadest	ad 1000 ml
pH 7,4 $\pm$ 0,2	

Bahan-bahan diatas dilarutkan kedalam aquadest ad 1000 ml, dipanaskan sampai larut sempurna, kemudian disterilkan dengan autoklav pada suhu 121°C selama 15 menit dan dituang dalam tabung reaksi (Bridson 1998).

4. Kligler's Iron Agar (KIA)

Pepton from casein	15 g
Pepton from meat	5 g
Ammonium Iron (II) citrat	0,5 g
Meat extract	3 g
Yeast extract	3 g
Sodium chloride	5 g
Laktosa	10 g
Glukosa	1 g
Sodium thiosulfat	0,5 g
Phenol red	0,024 g
Agar-agar	12 g
Aquadest	ad 1000 ml
pH 7,4	

Bahan-bahan diatas dilarutkan kedalam aquadest ad 1000 ml, dipanaskan sampai larut sempurna, kemudian disterilkan dengan autoklav pada suhu 121°C selama 15 menit dan dituang dalam tabung reaksi (Bridson 1998).

5. Urea

Ditimbang 21 gram serbuk urea, ditambahkan aquadest sampai 1000 mL, dipanaskan sampai mendidih, didinginkan 45°C-55°C, ditambahkan urea 40%. Dimasukkan kedalam tabung reaksi steril 10 mL, ditutup dengan

kapas lalu sterilkan dengan autoclave pada suhu 121°C selama 12 menit. Simpan medium pada suhu 8-15°C. pH media Urea adalah $6,4 \pm 0,2$ pada suhu 25°C

6. Citrat Agar

Ammonium hydrogen fosfat 1 g

Di-potassium hydrogen fosfat 1 g

Sodium chloride 5 g

Magnesium sulfat 0,2 g

Bromo thymol blue 0,08 g

Agar-agar 12,5 g

Aquadest ad 1000 ml

pH = 7,4

Bahan-bahan diatas dilarutkan kedalam aquadest ad 1000 ml, dipanaskan sampai larut sempurna, kemudian disterilkan dengan autoklav pada suhu 121°C selama 15 menit dan dituang dalam tabung reaksi (Bridson 1998).

Lampiran 9. Ethical Clearance

2/4/2019 Form A2



HEALTH RESEARCH ETHICS COMMITTEE
KOMISI ETIK PENELITIAN KESEHATAN
Dr. Moewardi General Hospital
RSUD Dr. Moewardi

School of Medicine Sebelas Maret University
Fakultas Kedokteran Universitas Sebelas Maret



ETHICAL CLEARANCE
KELAIKAN ETIK

Nomor : 134 / II / HREC / 2019

The Health Research Ethics Committee Dr. Moewardi General Hospital / School of Medicine Sebelas Maret
 Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi / Fakultas Kedokteran Universitas Sebelas Maret

Maret University Of Surakarta, after reviewing the proposal design, herewith to certify
 Surakarta, setelah menilai rancangan penelitian yang diusulkan, dengan ini menyatakan

That the research proposal with topic :
 Bahwa usulan penelitian dengan judul

Pola Sensitivitas Bakteri Klebsiella sp. Hasil Isolasi Urin Pasien Diduga Infeksi Saluran Kemih Terhadap Beberapa Antibiotik Di RSUD. Dr. Moewardi Surakarta

Principal investigator : Siti Aminah
 Peneliti Utama : 21154429A

Location of research : Laboratorium Patologi Klinik RSUD Dr. Moewardi Surakarta
 Lokasi Tempat Penelitian

Is ethically approved
 Dinyatakan layak etik

Issued on : 04 Feb 2019

Chairman
Ketua



Dr. Wahyu Dwi Atmoko, SpF
NIP. 19770224 201001 1 004



Lampiran 10. Surat keterangan selesai penelitian

KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI

UNIVERSITAS SEBELAS MARET**FAKULTAS KEDOKTERAN****LABORATORIUM MIKROBIOLOGI**

Alamat : Jl. Ir. Sutami No. 36 A Ketingan Surakarta 57126 Telp. (0271) 632489

SURAT KETERANGAN

No. /Mikro/Penelitian/2019

Bersama ini Kepala Laboratorium Mikrobiologi FK UNS Surakarta, menerangkan bahwa :

Nama : Siti Aminah

NIM : 211544294

Institusi : Universitas Setia Budi Surakarta

TELAH MENYELESAIKAN KEGIATAN PENELITIAN**DI LAB. MIKROBIOLOGI FK UNS**

Dengan judul penelitian :

Pola Sensitivitas Bakteri *Klebsiella sp.* Hasil Isolasi Urin Pasien Diduga Infeksi Saluran Kemih**Terhadap Beberapa Antibiotik Di RSUD Dr. Moewardi Surakarta.**

Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya.

Surakarta, 05 Juli 2019

Lab. Mikrobiologi FK UNS
Kepala,
Marwoto, dr., MSc. Sp. MK
NIP.19590203 198601 1 004