BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Berdasarkan hasil pengamatan dapat disimpulkan bahwa :

Pertama, simvastatin tidak mempengaruhi aktivitas antibiotik seftriakson, siprofloksasin, klindamisin, trimetroprim dan polimiksin terhadap *Staphylococcus aureus* ATCC 25923 secara in vitro.

Kedua, tidak ada kombinasi antibiotik seftriakson, siprofloksasin, klindamisin, trimetroprim dan polimiksin masing-masing 100 μg/ml dengan simvastatin 15 μg/ml, 150 μg/ml, 600 μg/ml yang mengalami peningkatan aktivitas antibakteri paling optimal terhadap *Staphylococcus aureus* ATCC 25923 secara in vitro.

B. Saran

Pertama, perlu dilakukan penelitian lebih lanjut tentang aktivitas antibakteri simvastatin dengan menggunakan pelarut dan metode yang berbeda.

Kedua, perlu dilakukan penelitian lebih lanjut tentang aktivitas antibakteri simvastatin yang dikombinasikan dengan antibiotik seftriakson, siprofloksasin, klindamisin, trimetroprim dan polimiksin dengan pelarut dan metode yang berbeda.

Ketiga, perlu dilakukan penanganan yang lebih teliti dengan faktor-faktor yang mempengaruhi hasil aktivitas pengujian simvastatin sebagai antibakteri.

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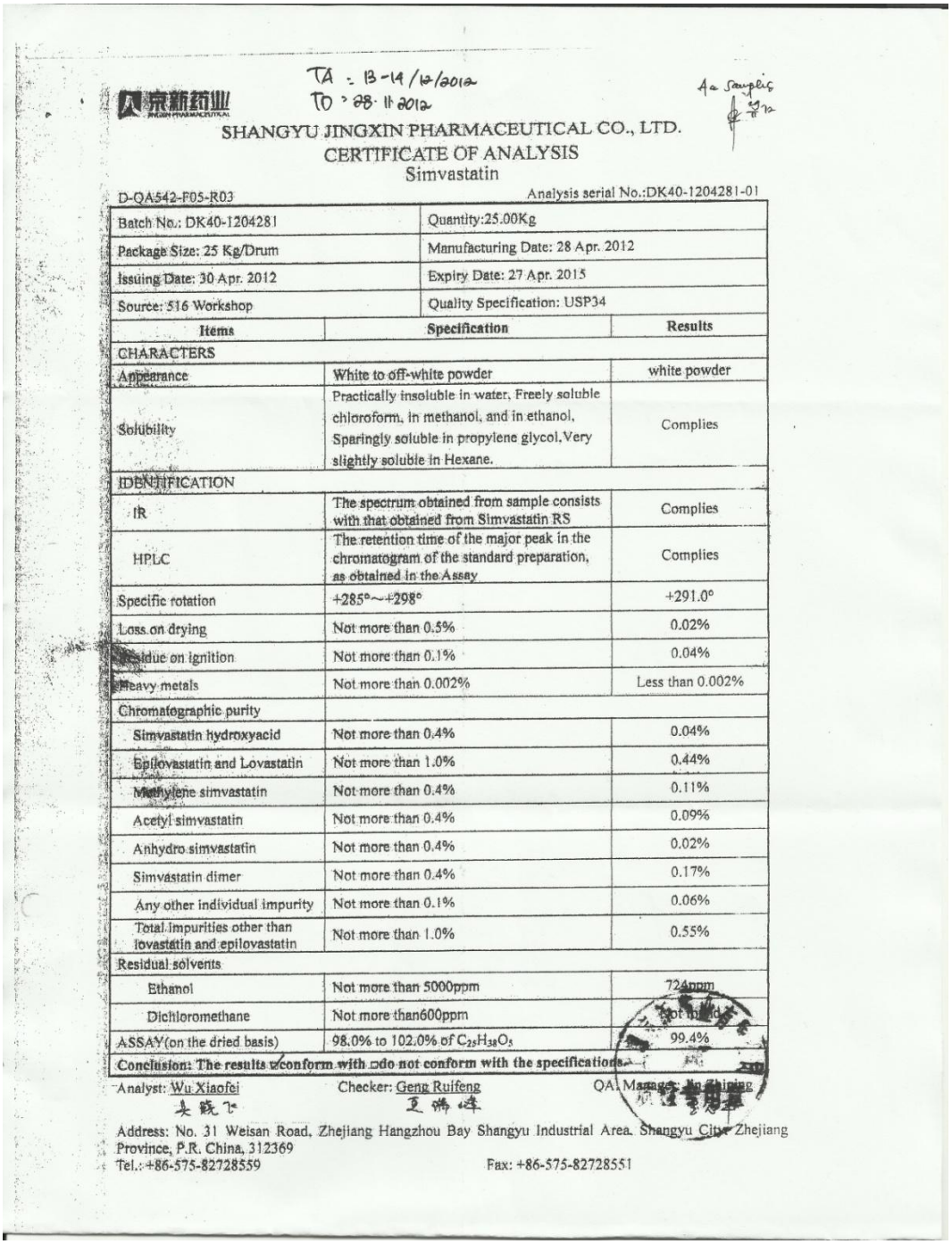
LAMPIRAN

Lampiran 1. Certificate Of Analysis Simvastatin



TA : 13-14/12/2012
TO : 28-11-2012
As Sample

SHANGYU JINGXIN PHARMACEUTICAL CO., LTD.

CERTIFICATE OF ANALYSIS

Simvastatin

D-QA542-F05-R03 Analysis serial No.:DK40-1204281-01

Batch No.: DK40-1204281	Quantity:25.00Kg	
Package Size: 25 Kg/Drum	Manufacturing Date: 28 Apr. 2012	
Issuing Date: 30 Apr. 2012	Expiry Date: 27 Apr. 2015	
Source: 516 Workshop	Quality Specification: USP34	
Items	**Specification**	**Results**
CHARACTERS		
Appearance	White to off-white powder	white powder
Solubility	Practically insoluble in water, Freely soluble chloroform, in methanol, and in ethanol, Sparingly soluble in propylene glycol,Very slightly soluble in Hexane.	Complies
IDENTIFICATION		
IR	The spectrum obtained from sample consists with that obtained from Simvastatin RS	Complies
HPLC	The retention time of the major peak in the chromatogram of the standard preparation, as obtained in the Assay	Complies
Specific rotation	+285°~+298°	+291.0°
Loss on drying	Not more than 0.5%	0.02%
Residue on ignition	Not more than 0.1%	0.04%
Heavy metals	Not more than 0.002%	Less than 0.002%
Chromatographic purity		
Simvastatin hydroxyacid	Not more than 0.4%	0.04%
Epilovastatin and Lovastatin	Not more than 1.0%	0.44%
Methylene simvastatin	Not more than 0.4%	0.11%
Acetyl simvastatin	Not more than 0.4%	0.09%
Anhydro simvastatin	Not more than 0.4%	0.02%
Simvastatin dimer	Not more than 0.4%	0.17%
Any other individual impurity	Not more than 0.1%	0.06%
Total impurities other than lovastatin and epilovastatin	Not more than 1.0%	0.55%
Residual solvents		
Ethanol	Not more than 5000ppm	724ppm
Dichloromethane	Not more than600ppm	Not detected
ASSAY(on the dried basis)	98.0% to 102.0% of $C_{25}H_{38}O_5$	99.4%
Conclusion: The results □conform with □do not conform with the specifications.		

Analyst: Wu Xiaofei 吴晓飞 Checker: Geng Ruifeng 耿瑞峰 QA Manager: Ju Zhiping

Address: No. 31 Weisan Road, Zhejiang Hangzhou Bay Shangyu Industrial Area, Shangyu City, Zhejiang Province, P.R. China, 312369
Tel.: +86-575-82728559 Fax: +86-575-82728551

Lampiran 2. Certificate Of Analysis Siprofloksazin

As Sample

TD : 01-04-2013
TA : 04-06-05-2013

浙江国邦药业有限公司
ZHEJIANG GUOBANG PHARMACEUTICAL CO., LTD

质量检验报告书
CERTIFICATE OF ANALYSIS

检品名称 Product	盐酸环丙沙星 Ciprofloxacin HCL	批 号 Batch No	101-130225-1 ✓
包 装 Packaging Size	25Kg/桶 (drum)	数 量 Quantity	400Kg
生产日期 MFG Date	25/02/2013 (d/m/y)	检测日期 Testing Date	01/03/2013 (d/m/y)
执行标准 According to	美国药典 (USP35)	失效日期 Expiry Date	24/02/2016(d/m/y)

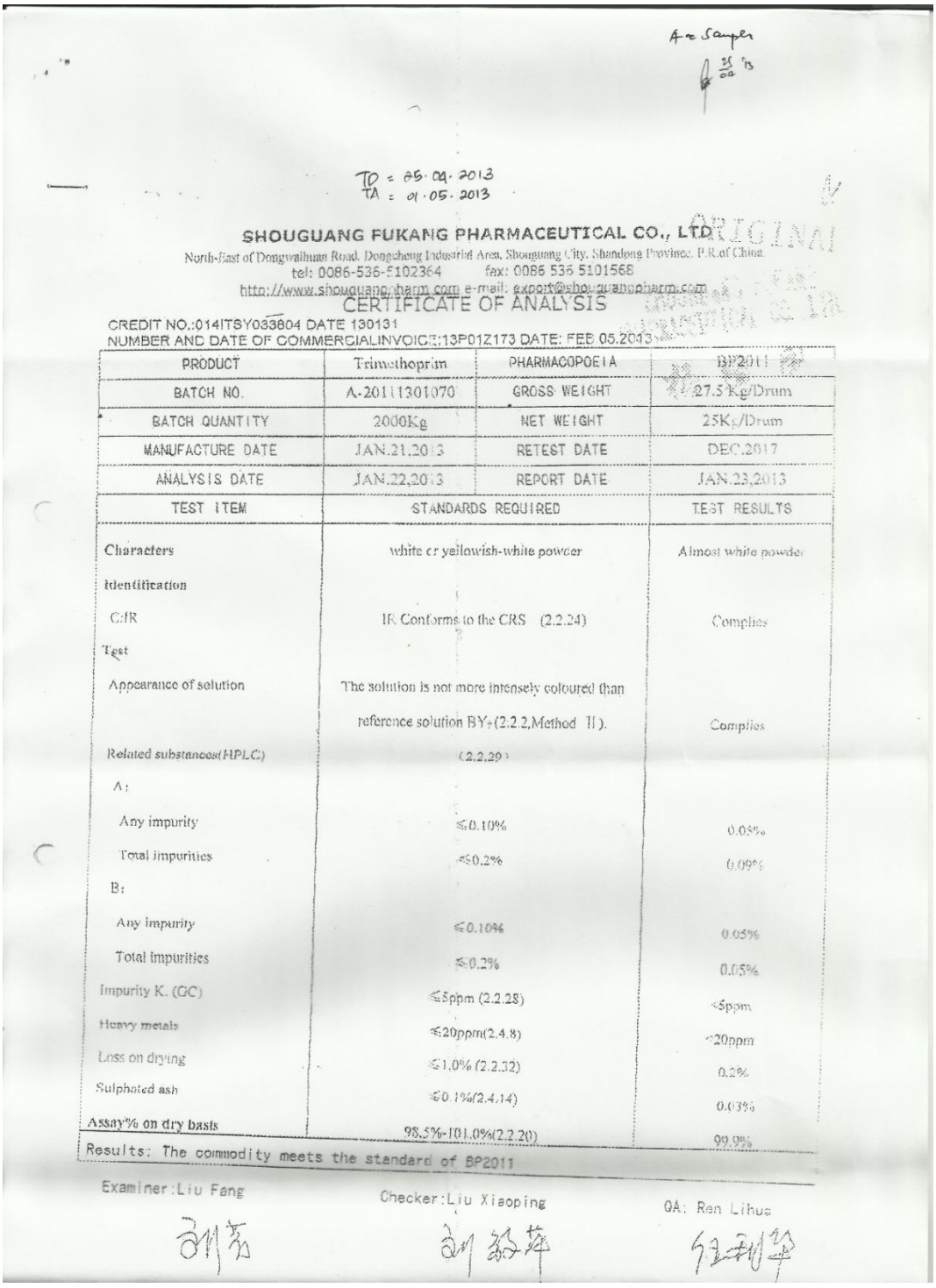
检验项目(Tests)	标准规定(Acceptance Criteria)		结 果(Results)
外观 Description	微黄色至淡黄色结晶性粉末 Faintly yellowish to light yellow crystalline powder		符 合 Conforms
溶解性 Solubility	在水中略溶，微溶于醋酸和甲醇，在乙醇中极微溶，几乎不溶于丙酮、乙醚、乙酸乙酯、正己烷和二氯甲烷。Sparingly soluble in water, slightly soluble in acetic acid and methanol, very slightly soluble in dehydrated alcohol, practically insoluble in acetone, in acetonitrile, in ethyl acetate, in hexane, and in methylene chloride		
鉴 别 Identification	(1) IR 红外光吸收图谱应与对照品的图谱一致 IR Conforms to the spectrum of Ciprofloxacin Hydrochloride RS (2) HPLC 在含量测定项下，供试品溶液主峰保留时间应与对照品溶液主峰保留时间一致 HPLC The retention time of the major peak of the Sample solution corresponds to that of the Standard solution, as obtained in the Assay (3) 应显氯化物的鉴别反应 Responds to the tests for chloride		符 合 Conforms
酸 度 pH	3.0～4.5 (1g/40ml water)		3.6
水 分 Water	4.7～6.7%		5.7%
炽灼残渣 Residue on ignition	≤ 0.1%		0.05%
硫 酸 盐 Sulphate	≤ 0.04%		< 0.04%
重 金 属 Heavy metals	≤ 0.002%		< 0.002%
氟喹啉酸 (TLC) Limit of fluoroquinolonic acid	≤ 0.2%		< 0.2%
色谱纯度 (HPLC) Chromatographic purity	(1) 乙二胺类环丙沙星 Ciprofloxacin ethylenediamine analog	≤0.2%	0.10%
	(2) 其它单个杂质 Any other single impurity	≤0.2%	0.06%
	(3) 所有杂质 The sum of all impurities	≤0.5%	0.21%
含量 (HPLC) Assay	按无水物计算，含 $C_{17}H_{18}FN_3O_3 \cdot HCl$ 应为 98.0%～102.0% 98.0%～102.0% (On the anhydrous substance)		99.9%
残留溶剂 Residual solvents	(1) 乙醇 Ethanol	≤5000ppm	453ppm
	(2) 甲苯 Toluene	≤890ppm	未检出 Not detected

结论 本品按美国药典 35 版标准检验，结果符合规定
Conclusion: Conforms to USP 35 specification for ciprofloxacin hydrochloride

备注(note): 松密度(bulk density) 0.26g/ml

Reported by Li Na Li Na
Reviewed by Pang Yanhua Pang Yanhua
Approved by Wu Qinghua Wu Qinghua

Lampiran 3. Certificate Of Analysis Trimetoprim



A.a Sampel

TD = 25.04.2013
TA = 01.05.2013

SHOUGUANG FUKANG PHARMACEUTICAL CO., LTD

North-East of Dongwaihuan Road, Dongcheng Industrial Area, Shouguang City, Shandong Province, P.R.of China.
tel: 0086-536-5102364 fax: 0086 536 5101568
http://www.shouguangpharm.com e-mail: export@shouguangpharm.com

ORIGINAL

CERTIFICATE OF ANALYSIS

CREDIT NO.:014ITSY033804 DATE 130131
NUMBER AND DATE OF COMMERCIALINVOICE:13P01Z173 DATE: FEB 05,2013

PRODUCT	Trimethoprim	PHARMACOPOEIA	BP2011
BATCH NO.	A-20111301070	GROSS WEIGHT	27.5Kg/Drum
BATCH QUANTITY	2000Kg	NET WEIGHT	25Kg/Drum
MANUFACTURE DATE	JAN.21,2013	RETEST DATE	DEC.2017
ANALYSIS DATE	JAN.22,2013	REPORT DATE	JAN.23,2013

TEST ITEM	STANDARDS REQUIRED	TEST RESULTS
Characters	white or yellowish-white powder	Almost white powder
Identification		
C;IR	IR Conforms to the CRS (2.2.24)	Complies
Test		
Appearance of solution	The solution is not more intensely coloured than reference solution BY7(2.2.2,Method II).	Complies
Related substances(HPLC)	(2.2.29)	
A:		
Any impurity	≤0.10%	0.05%
Total impurities	≤0.2%	0.09%
B:		
Any impurity	≤0.10%	0.05%
Total impurities	≤0.2%	0.05%
Impurity K. (GC)	≤5ppm (2.2.28)	<5ppm
Heavy metals	≤20ppm(2.4.8)	<20ppm
Loss on drying	≤1.0% (2.2.32)	0.2%
Sulphated ash	≤0.1%(2.4.14)	0.03%
Assay% on dry basis	98.5%-101.0%(2.2.20)	99.9%

Results: The commodity meets the standard of BP2011

Examiner:Liu Fang Checker:Liu Xiaoping QA: Ren Lihua

Lampiran 4. Certificate Of Analysis Klimdamisin

TD : 30.04.2013
TA : 07.05.2013

南阳普康药业有限公司
NANYANG PUKANG PHARMACEUTICAL CO., LTD.
检验报告书
CERTIFICATE OF ANALYSIS

编号:Q/PKY. GTY09123-L1301 报告书号：k-2013037

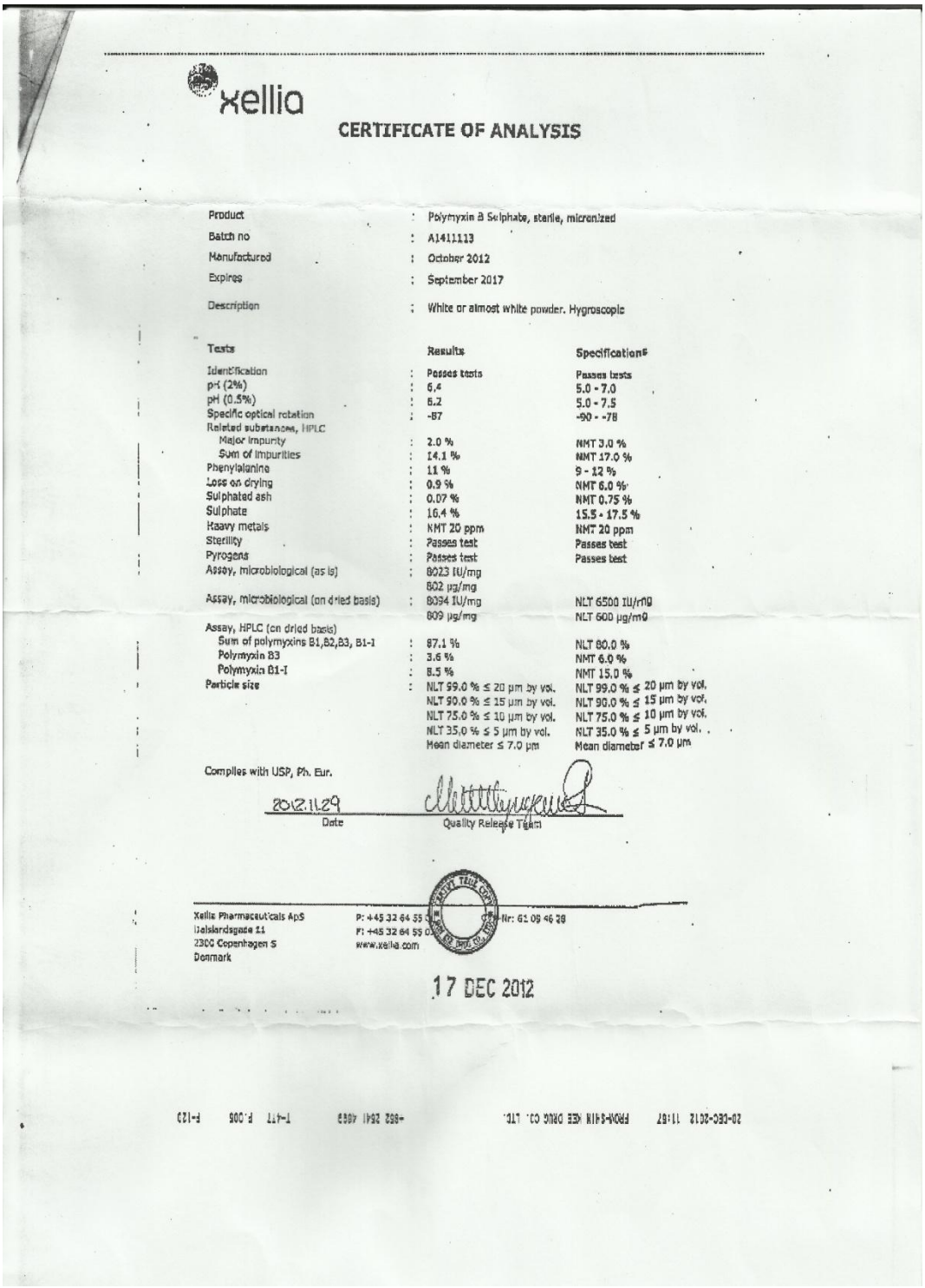
品名 COMMODITY	盐酸克林霉素 CLINDAMYCIN HCL	包装 PACKING	25 公斤/桶 25KG PER CARDBOARDDRUM
出厂批号 BATCH NO.	2013021521	数量 QUANTITY	701.1KG
有效日期 EXP.DATE	2017.02.14	生产日期 DATE OF MANUFACTURE	2013.02.15
依据 ACCORDING TO	USP35	报告日期 DATE OF ANALYSIS	2013.02.17

检验项目 Items	标准规定 Criteria	检验结果 Results
性状 Characteristics	应为白色结晶性粉末 A white or almost white, crystalline powder	A white crystalline powder
鉴别 Identification	Infrared Absorption	Infrared Absorption
结晶性 Crystallinity	meets the requirements	meets the requirements
酸度 Acidity	100mg/ml solution PH 3.0～5.5	4.3
水分 Water	between3.0～ 6.0%	4.2%
有关物质 Related compounds	clindamycin B	≤ 2.0% 1.4%
	7-epiclindamycin	≤ 4.0% 0.7%
	other individual related compound	≤ 1.0% 0.2%
	total of all related compounds	≤ 6.0% 3.0%
有机溶剂残留量 Residual solvents	Ethanol	≤ 3000ppm 0
	Acetone	≤ 3000ppm 261ppm
	Chloroform	≤ 30ppm 0
	N, N-Dimethylformamide	≤ 500ppm 0
含量测定 Assay	not less than 800 μg per mg	860 μg /mg

结论 Conclusion 本品依据 USP35 检验其结果符合规定 MEETS THE STANDARD OF USP35

检验员 [illegible] 复核员 [illegible] 负责人 [illegible]

Lampiran 5. Certificate Of Analysis Polimiksin B Sulfat



xellia

CERTIFICATE OF ANALYSIS

Product	:	Polymyxin B Sulphate, sterile, micronized
Batch no	:	A1411113
Manufactured	:	October 2012
Expires	:	September 2017
Description	:	White or almost white powder. Hygroscopic

Tests		Results	Specifications
Identification	:	Passes tests	Passes tests
pH (2%)	:	6.4	5.0 - 7.0
pH (0.5%)	:	6.2	5.0 - 7.5
Specific optical rotation	:	-87	-90 - -78
Related substances, HPLC			
Major impurity	:	2.0 %	NMT 3.0 %
Sum of impurities	:	14.1 %	NMT 17.0 %
Phenylalanine	:	11 %	9 - 12 %
Loss on drying	:	0.9 %	NMT 6.0 %
Sulphated ash	:	0.07 %	NMT 0.75 %
Sulphate	:	16.4 %	15.5 - 17.5 %
Heavy metals	:	NMT 20 ppm	NMT 20 ppm
Sterility	:	Passes test	Passes test
Pyrogens	:	Passes test	Passes test
Assay, microbiological (as is)	:	8023 IU/mg 802 µg/mg	
Assay, microbiological (on dried basis)	:	8934 IU/mg 809 µg/mg	NLT 6500 IU/mg NLT 600 µg/mg
Assay, HPLC (on dried basis)			
Sum of polymyxins B1,B2,B3, B1-I	:	87.1 %	NLT 80.0 %
Polymyxin B3	:	3.6 %	NMT 6.0 %
Polymyxin B1-I	:	8.5 %	NMT 15.0 %
Particle size	:	NLT 99.0 % ≤ 20 µm by vol. NLT 90.0 % ≤ 15 µm by vol. NLT 75.0 % ≤ 10 µm by vol. NLT 35.0 % ≤ 5 µm by vol. Mean diameter ≤ 7.0 µm	NLT 99.0 % ≤ 20 µm by vol. NLT 90.0 % ≤ 15 µm by vol. NLT 75.0 % ≤ 10 µm by vol. NLT 35.0 % ≤ 5 µm by vol. Mean diameter ≤ 7.0 µm

Complies with USP, Ph. Eur.

2012.11.29
Date

Quality Release Team

Xellia Pharmaceuticals ApS
Dalslandsgade 11
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P: +45 32 64 55 00
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www.xellia.com

Nr: 61 09 46 28

17 DEC 2012

20-DEC-2012 11:47 FROM-SAIN KEE DRUG CO. LTD. +852 2541 4059 T-417 P.005 F-123

Lampiran 6. Perhitungan pembuatan larutan uji

A. Simvastatin

- Pembuatan larutan stock simvastatin 600 μg/mL dengan cara melarutkan 60 mg serbuk simvastatin dalam 100mL pelarut chloroform.
- Pembuatan larutan uji 150 μg/mL dengan cara melakukan pengenceran I

  V1 . N1 = V2 . N2

  V1 . 600 = 100 . 150

  $V1 = \frac{(100 \times 150)}{600}$

  V1 = 25

  Jadi diambil 25 mL dari larutan stock 600 μg/mL dilarutkan kedalam 100 mL pelarut chloroform.
- Pembuatan larutan uji 15 μg/mL dengan cara melakukan pengenceran II

  V1 . N1 = V2 . N2

  V1 . 150 = 100 . 15

  $V1 = \frac{(100 \times 15)}{150}$

  V1 = 10

  Jadi diambil 10 mL dari larutan 150 μg/mL dilarutkan kedalam 100 mL pelarut chloroform.

B. Seftriakzon

- Pembuatan larutan stock seftriakzon 10000 μg/mL dengan cara melarutkan 1 gram bubuk injeksi kering seftriakzon dalam 100 mL aquadest.
- Pembuatan larutan uji 1000 μg/mL dengan cara melakukan pengenceran I

  V1 . N1 = V2 . N2

  V1 . 10000 = 100 . 1000

  $V1 = \frac{(100 \times 1000)}{10000}$

V1 = 10

Jadi diambil 10 mL dari larutan stock dilarutkan kedalam 100 mL pelarut aquadest.

- Pembuatan larutan uji 100 μg/mL dengan cara melakukan pengenceran II

V1 . N1 = V2 . N2

V1 . 1000 = 100 . 100

$$V1 = \frac{(100 \times 100)}{1000}$$

V1 = 10

Jadi diambil 10 mL dari larutan uji 1000 μg/mL dilarutkan kedalam 100 mL pelarut aquadest.

C. Siprofloksazin

- Pembuatan larutan stock siprofloksazin 1000 μg/mL dengan cara melarutkan 100mg serbuk siprfloksazin dalam 100mL pelarut aquadest.
- Pembuatan larutan uji 100 μg/mL dengan cara melakukan pengenceran I

V1 . N1 = V2 . N2

V1 . 1000 = 100 . 100

$$V1 = \frac{(100 \times 100)}{1000}$$

V1 = 10

Jadi diambil 10 mL dari larutan stock 1000 μg/mL dilarutkan kedalam 100 mL pelarut aquadest.

D. Klindamisin

- Pembuatan larutan stock klindamisin 1000 μg/mL dengan cara melarutkan 100mg serbuk klindamisin dalam 100mL pelarut aquadest.
- Pembuatan larutan uji 100 μg/mL dengan cara melakukan pengenceran I

V1 . N1 = V2 . N2

V1 . 1000 = 100 . 100

$$V1 = \frac{(100 \times 100)}{1000}$$

$$V1 = 10$$

Jadi diambil 10 mL dari larutan stock 1000 μg/mL dilarutkan kedalam 100 mL pelarut aquadest.

E. Polimiksin

- Pembuatan larutan stock Polimiksin 1000 μg/mL dengan cara melarutkan 100mg serbuk polimiksin dalam 100mL pelarut aquadest.
- Pembuatan larutan uji 100 μg/mL dengan cara melakukan pengenceran I

$$V1 \cdot N1 = V2 \cdot N2$$

$$V1 \cdot 1000 = 100 \cdot 100$$

$$V1 = \frac{(100 \times 100)}{1000}$$

$$V1 = 10$$

Jadi diambil 10 mL dari larutan stock 1000 μg/mL dilarutkan kedalam 100 mL pelarut aquadest.

F. Trimetoprim

- Pembuatan larutan stock Polimiksin 500 μg/mL dengan cara melarutkan 50 mg serbuk polimiksin dalam 100mL pelarut aquadest.
- Pembuatan larutan uji 100 μg/mL dengan cara melakukan pengenceran I

$$V1 \cdot N1 = V2 \cdot N2$$

$$V1 \cdot 500 = 100 \cdot 100$$

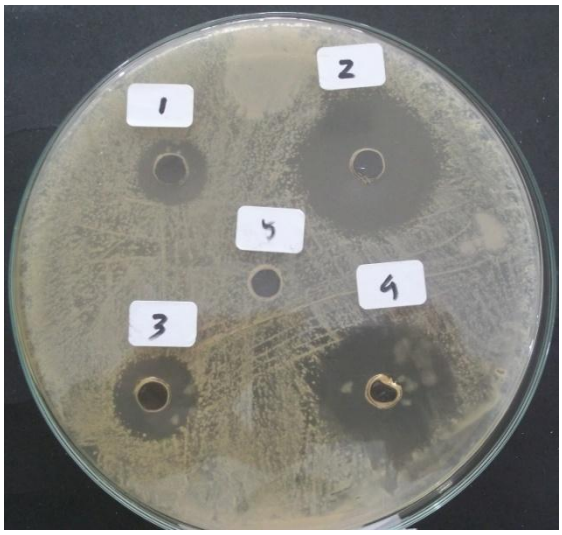
$$V1 = \frac{(100 \times 100)}{500}$$

$$V1 = 20$$

Jadi diambil 20 mL dari larutan stock 500 μg/mL dilarutkan kedalam 100 mL pelarut aquadest.

Lampiran 7. Gambar diameter zona hambat antibiotik

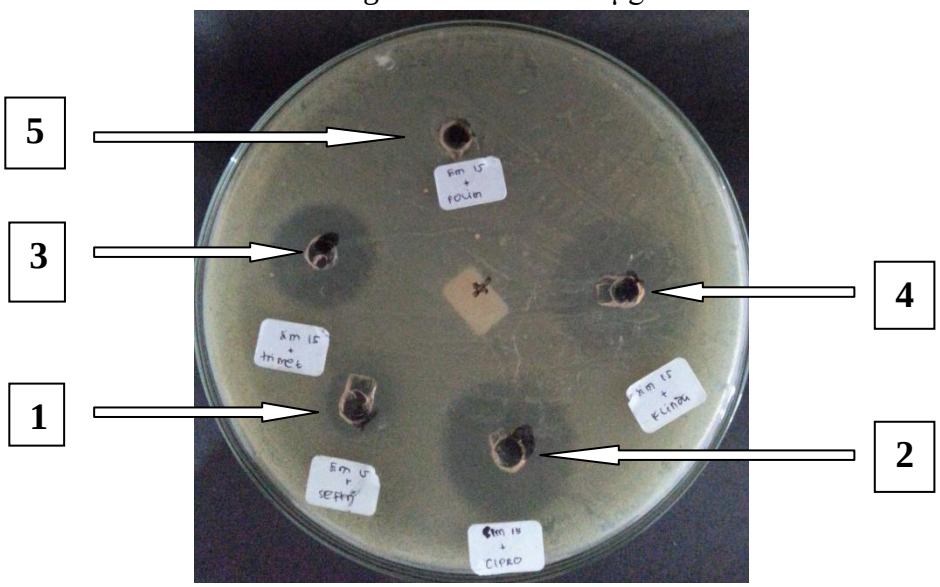
A. Gambar antibioitik seftriakzon, siprofloksazin, trimetoprim, klindamisin dan polimiksin



Keterangan gambar :

1. **Antibiotik Seftriakzon 100 µg/mL**
2. **Antibiotik Siprofloksazin 100 µg/mL**
3. **Antibiotik Trimetoprim 100 µg/mL**
4. **Antibiotik Klindamisin 100 µg/mL**
5. **Antibiotik Polimiksin 100 µg/mL**

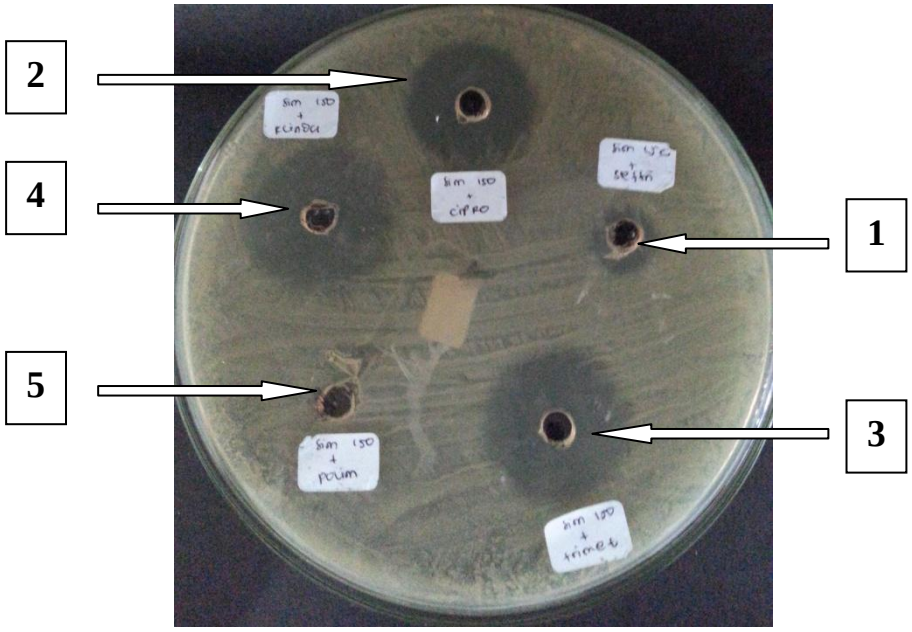
B. Gambar antibioitik seftriakzon, siprofloksazin, trimetoprim, klindamisin dan polimiksin dikombinasikan dengan simvastatin 15 µg/mL.



Keterangan gambar :

1. **Antibiotik Seftriakzon 100 µg/mL + simvastatin 15 µg/mL**
2. **Antibiotik Siprofloksazin 100 µg/mL + simvastatin 15 µg/mL**
3. **Antibiotik Trimetoprim 100 µg/mL + simvastatin 15 µg/mL**
4. **Antibiotik Klindamisin 100 µg/mL + simvastatin 15 µg/mL**
5. **Antibiotik Polimiksin 100 µg/mL + simvastatin 15 µg/mL**

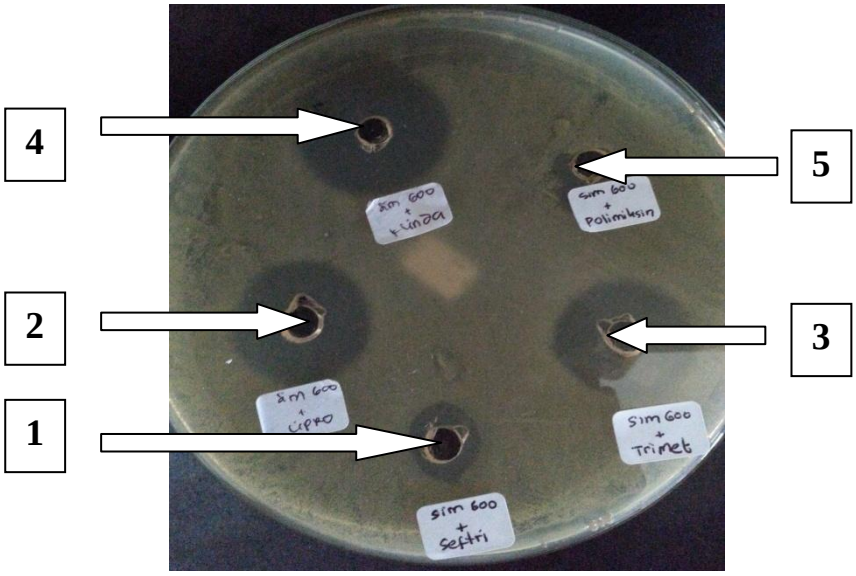
C. Gambar antibioitik seftriakzon, siprofloksazin, trimetoprim, klindamisin dan polimiksin dikombinasikan dengan simvastatin 150 µg/mL.



Keterangan gambar :

1. **Antibiotik Seftriakzon 100 µg/mL + simvastatin 150 µg/mL**
2. **Antibiotik Siprofloksazin 100 µg/mL + simvastatin 150 µg/mL**
3. **Antibiotik Trimetoprim 100 µg/mL + simvastatin 150 µg/mL**
4. **Antibiotik Klindamisin 100 µg/mL + simvastatin 150 µg/mL**
5. **Antibiotik Polimiksin 100 µg/mL + simvastatin 150 µg/mL**

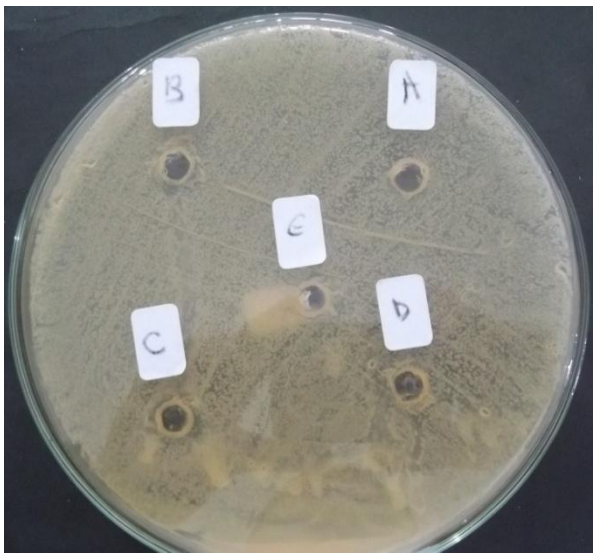
D. Gambar antibioitik seftriakzon, siprofloksazin, trimetoprim, klindamisin dan polimiksin dikombinasikan dengan simvastatin 600 µg/mL.



Keterangan gambar :

1. **Antibiotik Seftriakzon 100 µg/mL + simvastatin 600 µg/mL**
2. **Antibiotik Siprofloksazin 100 µg/mL + simvastatin 600 µg/mL**
3. **Antibiotik Trimetoprim 100 µg/mL + simvastatin 600 µg/mL**
4. **Antibiotik Klindamisin 100 µg/mL + simvastatin 600 µg/mL**
5. **Antibiotik Polimiksin 100 µg/mL + simvastatin 600 µg/mL**

E. Gambar simvastatin 15 µg/mL, simvastatin 150 µg/mL, simvastatin 600 µg/mL, chloroform dan aquadest steril.



Keterangan gambar :

A. Simvastatin 15 µg/mL
B. Simvastatin 150 µg/mL
C. Simvastatin 600 µg/mL
D. Chloroform
E. Aquadest steril

Lampiran 8. Perhitungan SPSS

A. Seftriakzon

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Diameter	12	18.17	1.403	16	20

One-Sample Kolmogorov-Smirnov Test

		Diameter
N		12
Normal Parameters[a,,b]	Mean	18.17
	Std. Deviation	1.403
Most Extreme Differences	Absolute	.214
	Positive	.214
	Negative	-.203
Kolmogorov-Smirnov Z		.741
Asymp. Sig. (2-tailed)		.642

a. Test distribution is Normal.

b. Calculated from data.

Test of Homogeneity of Variances

Diameter

Levene Statistic	df1	df2	Sig.
.478	3	8	.706

ANOVA

Diameter

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.333	3	2.111	1.101	.403
Within Groups	15.333	8	1.917		
Total	21.667	11			

B. Siprofloksazin

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Diameter	12	31.50	4.622	18	36

One-Sample Kolmogorov-Smirnov Test

		Diameter
N		12
Normal Parameters[a,,b]	Mean	31.50
	Std. Deviation	4.622
Most Extreme Differences	Absolute	.293
	Positive	.165
	Negative	-.293
Kolmogorov-Smirnov Z		1.015
Asymp. Sig. (2-tailed)		.254

a. Test distribution is Normal.

b. Calculated from data.

Test of Homogeneity of Variances

Diameter

Levene Statistic	df1	df2	Sig.
5.330	3	8	.026

ANOVA

Diameter

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	70.333	3	23.444	1.139	.390
Within Groups	164.667	8	20.583		
Total	235.000	11			

C. Trimetoprim

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Diameter	12	28.67	2.535	24	33

One-Sample Kolmogorov-Smirnov Test

		Diameter
N		12
Normal Parameters[a,,b]	Mean	28.67
	Std. Deviation	2.535
Most Extreme Differences	Absolute	.201
	Positive	.133
	Negative	-.201
Kolmogorov-Smirnov Z		.695
Asymp. Sig. (2-tailed)		.720

a. Test distribution is Normal.

b. Calculated from data.

Test of Homogeneity of Variances

Diameter

Levene Statistic	df1	df2	Sig.
1.398	3	8	.312

ANOVA

Diameter

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34.000	3	11.333	2.473	.136
Within Groups	36.667	8	4.583		
Total	70.667	11			

D. Klindamisin

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Diameter	12	35.33	1.371	33	38

One-Sample Kolmogorov-Smirnov Test

		Diameter
N		12
Normal Parameters[a,,b]	Mean	35.33
	Std. Deviation	1.371
Most Extreme Differences	Absolute	.179
	Positive	.179
	Negative	-.154
Kolmogorov-Smirnov Z		.621
Asymp. Sig. (2-tailed)		.835

a. Test distribution is Normal.

b. Calculated from data.

Test of Homogeneity of Variances

Diameter

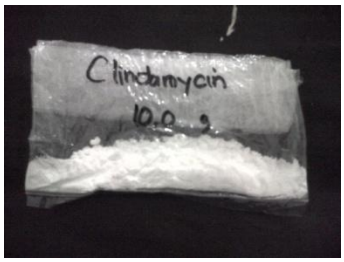
Levene Statistic	df1	df2	Sig.
1.032	3	8	.429

ANOVA

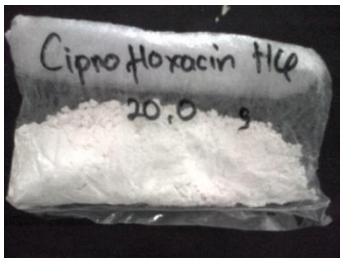
Diameter

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.000	3	2.667	1.684	.247
Within Groups	12.667	8	1.583		
Total	20.667	11			

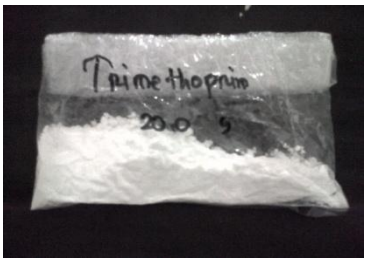
Lampiran 9. Serbuk bahan uji



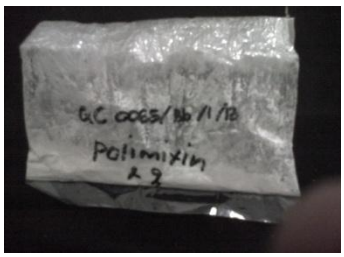
Klindamisin



Siprofloksazin

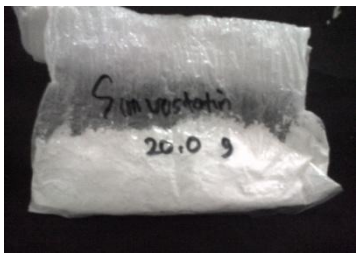


Trimetoprim



Polimiksin

Seftriakson



Simvastatin

Lampiran 10. Surat permohonan sampel antibiotik dan simvastatin

PT IFARS PHARMACEUTICAL LABORATORIES
Jl. Raya Solo - Sragen km 14,9 Karanganyar - Solo 57762
INDONESIA
Telp. (0271) 8200888 (Hunting), 827724, 656220
Fax. (0271) 656230

Nomor : IF/VII/2013/21.033/059
Lamp. : 1 lembar
Hal : Bahan baku Ciproflocaxin HCl, Trimethoprim, Simvastatin dan Clindamycin

Surakarta, 27 Juli 2013

Kepada Yth. :
Dekan Fakultas Farmasi
Universitas Setia Budi
Jl. Let. Jend. Sutoyo
Solo 57127

Dengan hormat,
Bersama ini kami kirimkan bahan baku Ciproflocaxin HCl, Trimethoprim, Simvastatin masing-masing sebanyak 20 g (Dua Puluh gram) dan Clindamycin sebanyak 10 g (Sepuluh gram) beserta foto copy Certificate of Analysis untuk mahasiswa sebagaimana tercantum dalam surat saudara nomor: 699.11/FF.0/A/SPM/VII/2013 pada tanggal 11 Juli 2013

Demikian agar dapat diterima dan diteruskan kepada mahasiswa yang bersangkutan.

Hormat kami,
PT IFARS Pharmaceutical Laboratories
Penanggung Jawab Produksi

PT IFARS
PHARMACEUTICAL LABORATORIES
SURAKARTA - INDONESIA

Dra. Agustini, Apt.

TANDA TERIMA

Telah terima dari :

Nama/Instansi	: Agus Prianto (mahasiswa Fak Farmasi USB Solo)
Uang sejumlah	: Rp. 260.000 (dua ratus enam puluh ribu rupiah)
Keperluan	: Membeli bahan baku Polimixin B suphate sebanyak 2 gram untuk penelitian Tugas Akhir.

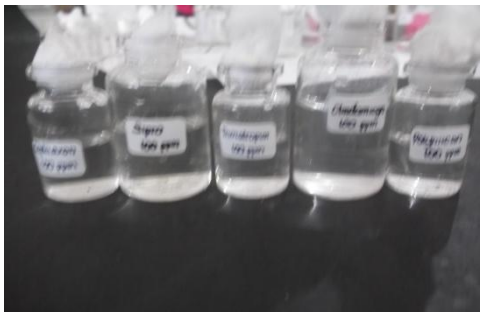
Semarang, 3 September 2013

Diterima oleh,

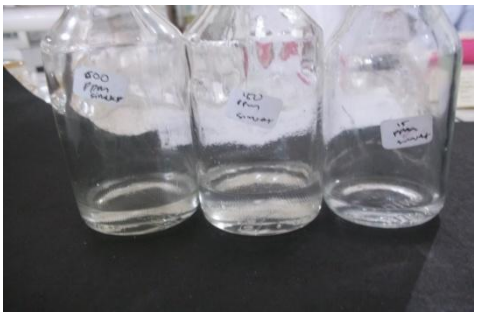
P.T. erela
erlangga ethical laboratories

(Agus Tri Mardijati)

Lampiran 11. Gambar larutan uji

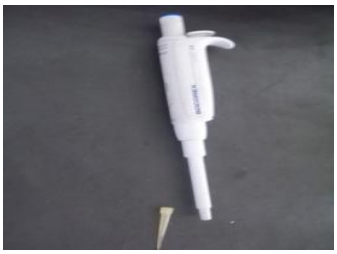


Larutan uji antibiotik

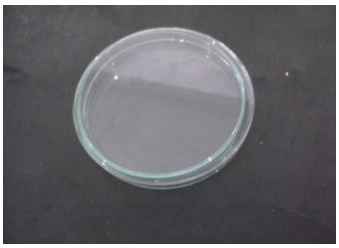


Larutan uji simvastatin

Lampiran 12. Gambar alat



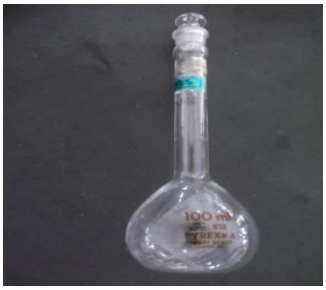
Mikropipet



Cawan Petri

Lidi Steril

Boor drop



Labu takar

Lampiran 13. Pembuatan Larutan standar Mc Farland

Larutan H_2SO_4 0,36 N sebanyak 99,5 ml dicampurkan dengan larutan $BaCl_2.2H_2O$ 1,175% sebanyak 0,5 ml dalam erlenmeyer. Kemudian dikocok sampai terbentuk larutan yang keruh. Kekeruhan ini dipakai sebagai standar kekeruhan suspensi bakteri uji (Wiyono 2012).

Lampiran 14. Komposisi media

1. Brain Heart Infusion (BHI)

Infus dari otak sapi	200,0 g
Infus dari hati sapi	250,0 g
Protease peptone	10,0 g
Dektrosa	2,0 g
Nacl	5,0 g
Dinatrium fosfate	5,0 g
Aquadest	ad 1000,0 ml
pH	7,4

Reagen-reagen dilarutkan dalam aquadest sebanyak 1000 ml dipanaskan sampai larut sempurna, kemudian disterilkan dengan autoklaf pada suhu 121^0C selam 15 menit dan dituangkan dalam cawan petri (Depkes 1994).

2. Formulasi dan pembuatan *Vogel Jhonson Agar* (VJA)

Tryptone	10,0 g
Ekstrak ragi	5,0 g
Dipotasium pospat	5,0 g
Manitol	10,0 g

Lithium clorida	5,0 g
Glisine	10,0 g
Fenol merah	0,025 g
Agar-agar	13,0 g
Aquadest	1000 ml
pH	7,2

Reagen-reagen diatas dilarutkan dalam aquadest sebanyak 1000 ml dipanaskan sampai larut sempurna, kemudian disterilkan dengan autoklaf pada suhu 121^0C selam 15 menit. Didinginkan pada suhu 50^0C dan ditambahkan kalium tellurit, kemudian dituangkan dalam cawan petri (Depkes 1994).

3. Formulasi dan pembuatan Moeler Hintlon (MHA)

Beef, dehidrated infusion	300 g
Casein hydrolysate	17,5 g
Strach	1,5 g
Agar-agar	17 g

Suspensikan 38 g bahan di atas dalam 1 liter aquadest, panaskan sampai larut sempurna. Sterilisasi pada autoclave pada suhu 121^oC selama 15 menit (Depkes 1994).