LAMPIRAN

Lampiran 1. Surat Keterangan *Ethical Clearance*

KEPK-RSDM

HEALTH RESEARCH ETHICS COMITTE
KOMISI ETIK PENELITIAN KESEHATAN

Dr. Moewardi General Hospital
RSUD Dr. Moewardi

ETHICAL CLEARANCE
KELAIKAN ETIK

Nomor : 236 / II / HREC / 2021

The Health Research Ethics Committee Dr. Moewardi
Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi

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

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

FORMULASI SEDIAAN EMULGEL DAN UJI AKTIVITAS TABIR SURYA ISOMIRISTISIN

Principal investigator   : Maria Leliana Jong
Peneliti Utama   23175267A

                                             Laboratorium 14 Farmakologi, Universitas Setia Budi
Location of research   : Surakarta
Lokasi Tempat Penelitian

Is ethically approved
Dinyatakan layak etik

Issued on : 08 Maret 2021

Chairman
Ketua

Dr. Wahyu Dwi Atmoko., Sp.F
19770224 201001 1 004

1/1

Lampiran 2. Surat Keterangan Hewan Uji

"ABIMANYU FARM"
√ Mencit putih jantan   √ Tikus Wistar   √ Swis Webster   √ Cacing
√ Mencit Balb/C   √ Kelinci New Zaeland
Ngampon RT 04 / RW 04, Mojosongo Kec. Jebres Surakarta. Phone 085 629 994 33 / Lab USB Ska

Yang bertanda tangan di bawah ini:
Nama : Sigit Pramono

Selaku pengelola Abimanyu Farm, menerangkan bahwa hewan uji yang digunakan untuk penelitian, oleh:

Nama   : Maria Leliana Jong
NIM   : 23175267A
Institusi   : Universitas Setia Budi Surakarta

Merupakan hewan uji dengan spesifikasi sebagai berikut:
Jenis hewan   : Kelinci New Zealand
Umur   : 2-3 bulan
Jenis kelamin   : Jantan
Jumlah   : 3 ekor
Keterangan   : Sehat
Asal-usul   : Unit Pengembangan Hewan Percobaan Boyolali

Yang pengembangan dan pengelolaannya disesuaikan standar baku penelitian. Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya.

Surakarta, 7 Februari 2022
Hormat kami

Sigit Pramono
"ABIMANYU FARM"

Lampiran 3. Hasil Uji pH Hari ke-1

Replikasi	F1	F2	K-
1	6,96	6,98	6,89
2	6,9	6,95	6,9
3	6,92	6,95	6,9
rata-rata	6,93	6,96	6,90
SD	0,03	0,02	0,01

Lampiran 4. Hasil Uji pH Hari ke-21

Replikasi	F1	F2	K-
1	6,75	6,8	6,5
2	6,7	6,89	6,53
3	6,78	6,85	6,58
Rata-Rata	6,74	6,85	6,54
SD	0,04	0,05	0,04

Lampiran 5. Data Uji Statistik Uji pH Formula Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	18	6,8183	,15034	6,50	6,98

One-Sample Kolmogorov-Smirnov Test

		pH
N		18
Normal Parameters[a,b]	Mean	6,8183
	Std. Deviation	,15034
Most Extreme Differences	Absolute	,239
	Positive	,141
	Negative	-,239
Kolmogorov-Smirnov Z		1,013
Asymp. Sig. (2-tailed)		,256

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Descriptive Statistics

Dependent Variable: pH

Formula	Hari	Mean	Std. Deviation	N
F1	Hari 1	6,9267	,03055	3
	Hari 21	6,7433	,04041	3
	Total	6,8350	,10540	6
F2	Hari 1	6,9600	,01732	3
	Hari 21	6,8467	,04509	3
	Total	6,9033	,06919	6
K (-)	Hari 1	6,8967	,00577	3
	Hari 21	6,5367	,04041	3
	Total	6,7167	,19886	6
Total	Hari 1	6,9278	,03270	9
	Hari 21	6,7089	,14146	9
	Total	6,8183	,15034	18

Levene's Test of Equality of Error Variances[a]

Dependent Variable: pH

F	df1	df2	Sig.
1,280	5	12	,334

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Formula + Hari + Formula * Hari

Post Hoc Tests

Multiple Comparisons

Dependent Variable: pH

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-,0683*	,01910	,010	-,1193	-,0174
	K (-)	,1183*	,01910	,000	,0674	,1693
F2	F1	,0683*	,01910	,010	,0174	,1193
	K (-)	,1867*	,01910	,000	,1357	,2376
K (-)	F1	-,1183*	,01910	,000	-,1693	-,0674
	F2	-,1867*	,01910	,000	-,2376	-,1357

Based on observed means.

 The error term is Mean Square(Error) = ,001.

*. The mean difference is significant at the ,05 level.

Homogeneous Subsets

pH

Tukey HSD[a,b]

Formula	N	Subset		
		1	2	3
K (-)	6	6,7167		
F1	6		6,8350	
F2	6			6,9033
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

 Based on observed means.

 The error term is Mean Square(Error) = ,001.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Lampiran 6. Hasil Uji Daya Sebar Hari ke-1

Formula	Beban	Hasil	Rata-rata	SD
F1	50	4,2	4,04	0,23
		3,78		
		4,15		
	100	5,13	4,70	0,37
		4,43		
		4,55		
	150	5,5	5,09	0,37
		4,78		
		5		
	200	5,88	5,43	0,39
		5,2		
		5,2		
F2	50	4,38	4,30	0,24
		4,03		
		4,5		
	100	4,75	4,64	0,26
		4,35		
		4,83		
	150	5,53	5,2	0,32
		4,9		
		5,25		
	200	5,95	5,58	0,38
		5,2		
		5,58		
F3	50	4,08	4,00	0,19
		3,78		
		4,13		
	100	4,48	4,50	0,04
		4,48		
		4,55		
	150	4,73	4,84	0,10
		4,9		
		4,9		
	200	5,1	5,21	0,10
		5,23		
		5,3		

Lampiran 7. Hasil Uji Daya Sebar Hari ke-21

Formula	Beban	Hasil	Rata-rata	SD
F1	50	4,45		
		4,65	4,39	0,29
		4,08		
	100	5		
		5,13	4,89	0,30
		4,55		
	150	5,3		
		5,5	5,48	0,17
		5,63		
	200	5,65		
		5,63	5,58	0,11
		5,45		
F2	50	4,43		
		4,3	4,39	0,08
		4,43		
	100	4,9		
		4,65	4,81	0,14
		4,88		
	150	5,35		
		5,63	5,48	0,14
		5,47		
	200	5,8		
		5,93	5,89	0,08
		5,95		
F3	50	4,65		
		4,7	4,6	0,13
		4,45		
	100	5,1		
		5,23	5,09	0,15
		4,93		
	150	5,5		
		5,53	5,46	0,10
		5,35		
	200	6		
		5,98	5,91	0,14
		5,75		

Lampiran 8. Data Uji Statistik Daya Sebar Formulasi Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
daya_sebar	24	4,9792	,55558	4,00	5,91

One-Sample Kolmogorov-Smirnov Test

		daya_sebar
N		24
Normal Parameters[a,b]	Mean	4,9792
	Std. Deviation	,55558
Most Extreme Differences	Absolute	,125
	Positive	,067
	Negative	-,125
Kolmogorov-Smirnov Z		,611
Asymp. Sig. (2-tailed)		,849

a. Test distribution is Normal.
b. Calculated from data.

Univariate Analysis of Variance

Descriptive Statistics

Dependent Variable: daya_sebar

Formula	Hari	Mean	Std. Deviation	N
F1	Hari 1	4,8150	,59657	4
	Hari 21	5,0850	,55441	4
	Total	4,9500	,55235	8
F2	Hari 1	4,9300	,57050	4
	Hari 21	5,1425	,67069	4
	Total	5,0363	,58751	8
K (-)	Hari 1	4,6375	,51448	4
	Hari 21	5,2650	,55585	4
	Total	4,9513	,59863	8
Total	Hari 1	4,7942	,52327	12
	Hari 21	5,1642	,54490	12
	Total	4,9792	,55558	24

Levene's Test of Equality of Error Variances[a]

Dependent Variable: daya_sebar

F	df1	df2	Sig.
,173	5	18	,969

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Formula + Hari + Formula * Hari

Post Hoc Tests

Multiple Comparisons

Dependent Variable: daya_sebar
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-,0862	,28956	,952	-,8252	,6527
	K (-)	-,0012	,28956	1,000	-,7402	,7377
F2	F1	,0862	,28956	,952	-,6527	,8252
	K (-)	,0850	,28956	,954	-,6540	,8240
K (-)	F1	,0012	,28956	1,000	-,7377	,7402
	F2	-,0850	,28956	,954	-,8240	,6540

Based on observed means.
 The error term is Mean Square(Error) = ,335.

Homogeneous Subsets

daya_sebar

Tukey HSD[a,b]

Formula	N	Subset
		1
F1	8	4,9500
K (-)	8	4,9513
F2	8	5,0363
Sig.		,952

Means for groups in homogeneous subsets are displayed.
 Based on observed means.
 The error term is Mean Square(Error) = ,335.
a. Uses Harmonic Mean Sample Size = 8,000.
b. Alpha = ,05.

Lampiran 9. Hasil Uji Daya Lekat Hari ke-1

Replikasi	F1	F2	K-
1	2,12	2,15	2,03
2	2,05	2,2	2,1
3	2,09	2,18	2,05
Rata-rata	2,09	2,18	2,06
SD	0,03	0,02	0,04

Lampiran 10. Hasil Uji Daya Lekat Hari ke-21

Replikasi	F1	F2	K-
1	2,27	2,37	2,18
2	2,15	2,26	2,2
3	2,18	2,2	2,14
Rata-rata	2,20	2,28	2,17
SD	0,06	0,09	0,03

Lampiran 11. Data Uji Statistik Uji Daya Lekat Formula Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
daya_lekat	18	2,1622	,08537	2,03	2,37

One-Sample Kolmogorov-Smirnov Test

		daya_lekat
N		18
Normal Parameters[a,b]	Mean	2,1622
	Std. Deviation	,08537
Most Extreme Differences	Absolute	,162
	Positive	,162
	Negative	-,082
Kolmogorov-Smirnov Z		,689
Asymp. Sig. (2-tailed)		,729

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Descriptive Statistics

Dependent Variable: daya_lekat

Formula	Hari	Mean	Std. Deviation	N
F1	Hari 1	2,0867	,03512	3
	Hari 21	2,2000	,06245	3
	Total	2,1433	,07685	6
F2	Hari 1	2,1767	,02517	3
	Hari 21	2,2767	,08622	3
	Total	2,2267	,07891	6
K (-)	Hari 1	2,0600	,03606	3
	Hari 21	2,1733	,03055	3
	Total	2,1167	,06890	6
Total	Hari 1	2,1078	,05995	9
	Hari 21	2,2167	,07228	9
	Total	2,1622	,08537	18

Levene's Test of Equality of Error Variances[a]

Dependent Variable: daya_lekat

F	df1	df2	Sig.
1,699	5	12	,209

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Formula + Hari + Formula * Hari

Post Hoc Tests

Multiple Comparisons

Dependent Variable: daya_lekat
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-,0833[*]	,02928	,036	-,1615	-,0052
	K (-)	,0267	,02928	,644	-,0515	,1048
F2	F1	,0833[*]	,02928	,036	,0052	,1615
	K (-)	,1100[*]	,02928	,007	,0319	,1881
K (-)	F1	-,0267	,02928	,644	-,1048	,0515
	F2	-,1100[*]	,02928	,007	-,1881	-,0319

Based on observed means.
 The error term is Mean Square(Error) = ,003.
*. The mean difference is significant at the ,05 level.

Homogeneous Subsets

daya_lekat

Tukey HSD[a,b]

Formula	N	Subset	
		1	2
K (-)	6	2,1167	
F1	6	2,1433	
F2	6		2,2267
Sig.		,644	1,000

Means for groups in homogeneous subsets are displayed.
 Based on observed means.
 The error term is Mean Square(Error) = ,003.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

Lampiran 12. Hasil Uji Viskositas Hari ke-1

Replikasi	F1	F2	K-
1	180	195	170
2	180	200	175
3	170	195	175
Rata-rata	176,7	196,7	173,3
SD	5,77	2,89	2,89

Lampiran 13. Hasil Uji Viskositas Hari ke-21

Replikasi	F1	F2	K-
1	200	205	180
2	210	200	175
3	195	220	190
Rata-rata	201,7	208,3	181,7
SD	7,64	10,41	7,64

Lampiran 14. Data Uji Statistik Uji Viskositas Formula Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
viskositas	18	189,7222	14,70016	170,00	220,00

One-Sample Kolmogorov-Smirnov Test

		viskositas
N		18
Normal Parameters[a,b]	Mean	189,7222
	Std. Deviation	14,70016
Most Extreme Differences	Absolute	,190
	Positive	,190
	Negative	-,140
Kolmogorov-Smirnov Z		,807
Asymp. Sig. (2-tailed)		,532

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Descriptive Statistics

Dependent Variable: viskositas

Formula	Hari	Mean	Std. Deviation	N
F1	Hari 1	176,6667	5,77350	3
	Hari 21	201,6667	7,63763	3
	Total	189,1667	14,97220	6
F2	Hari 1	196,6667	2,88675	3
	Hari 21	208,3333	10,40833	3
	Total	202,5000	9,35414	6
K (-)	Hari 1	173,3333	2,88675	3
	Hari 21	181,6667	7,63763	3
	Total	177,5000	6,89202	6
Total	Hari 1	182,2222	11,48671	9
	Hari 21	197,2222	14,16667	9
	Total	189,7222	14,70016	18

Levene's Test of Equality of Error Variances[a]

Dependent Variable: viskositas

F	df1	df2	Sig.
1,773	5	12	,193

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Formula + Hari + Formula * Hari

Post Hoc Tests

Multiple Comparisons

Dependent Variable: viskositas

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-13,3333*	3,90868	,013	-23,7612	-2,9055
	K (-)	11,6667*	3,90868	,028	1,2388	22,0945
F2	F1	13,3333*	3,90868	,013	2,9055	23,7612
	K (-)	25,0000*	3,90868	,000	14,5722	35,4278
K (-)	F1	-11,6667*	3,90868	,028	-22,0945	-1,2388
	F2	-25,0000*	3,90868	,000	-35,4278	-14,5722

Based on observed means.

The error term is Mean Square(Error) = 45,833.

*. The mean difference is significant at the ,05 level.

Homogeneous Subsets

viskositas

Tukey HSD[a,b]

Formula	N	Subset		
		1	2	3
K (-)	6	177,5000		
F1	6		189,1667	
F2	6			202,5000
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 45,833.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Lampiran 15. Hasil Pengujian Stabilitas pH (Sebelum di Cycling Test)

Replikasi	F1	F2	K-
1	6,96	6,98	6,89
2	6,9	6,96	6,9
3	6,92	6,95	6,9
Rata-rata	6,93	6,96	6,90
SD	0,03	0,02	0,01

Lampiran 16. Hasil Pengujian Stabilitas pH (Sesudah di Cycling Test)

Replikasi	F1	F2	K-
1	7	7,05	6,9
2	6,98	7,03	6,92
3	6,95	6,98	6,95
Rata-rata	6,98	7,02	6,92
SD	0,03	0,04	0,03

Lampiran 17. Data Uji Statistik Stabilitas pH Formula Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	18	6,9511	,04676	6,89	7,05

One-Sample Kolmogorov-Smirnov Test

		pH
N		18
Normal Parameters[a,b]	Mean	6,9511
	Std. Deviation	,04676
Most Extreme Differences	Absolute	,141
	Positive	,141
	Negative	-,102
Kolmogorov-Smirnov Z		,596
Asymp. Sig. (2-tailed)		,869

a. Test distribution is Normal.
b. Calculated from data.

Univariate Analysis of Variance

Descriptive Statistics

Dependent Variable: pH

Formula	Waktu_pemeriksaan	Mean	Std. Deviation	N
F1	Sebelum cycling test	6,9267	,03055	3
	Sesudah cycling test	6,9767	,02517	3
	Total	6,9517	,03710	6
F2	Sebelum cycling test	6,9633	,01528	3
	Sesudah cycling test	7,0200	,03606	3
	Total	6,9917	,03971	6
K (-)	Sebelum cycling test	6,8967	,00577	3
	Sesudah cycling test	6,9233	,02517	3
	Total	6,9100	,02191	6
Total	Sebelum cycling test	6,9289	,03371	9
	Sesudah cycling test	6,9733	,04899	9
	Total	6,9511	,04676	18

Levene's Test of Equality of Error Variances[a]

Dependent Variable: pH

F	df1	df2	Sig.
1,418	5	12	,286

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Formula + Waktu_pemeriksaan + Formula * Waktu_pemeriksaan

Post Hoc Tests

Multiple Comparisons

Dependent Variable: pH

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
F1	F2	-,0400*	,01447	,042	-,0786	-,0014
	K (-)	,0417*	,01447	,034	,0031	,0803
F2	F1	,0400*	,01447	,042	,0014	,0786
	K (-)	,0817*	,01447	,000	,0431	,1203
K (-)	F1	-,0417*	,01447	,034	-,0803	-,0031
	F2	-,0817*	,01447	,000	-,1203	-,0431

Based on observed means.

The error term is Mean Square(Error) = ,001.

*. The mean difference is significant at the ,05 level.

Homogeneous Subsets

pH

Tukey HSD[a,b]

Formula	N	Subset 1	2	3
K (-)	6	6,9100		
F1	6		6,9517	
F2	6			6,9917
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = ,001.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Lampiran 18. Hasil Pengujian Stabilitas Viskositas (Sebelum di Cycling Test)

Replikasi	F1	F2	K-
1	180	195	170
2	180	200	175
3	170	195	175
Rata-rata	176,7	196,7	173,3
SD	5,77	2,89	2,89

Lampiran 19. Hasil Pengujian Stabilitas Viskositas (Sesudah di Cycling Test)

Replikasi	F1	F2	K-
1	200	230	190
2	205	200	185
3	210	210	190
Rata-rata	205	213,3	188,3
SD	5	15,28	2,89

Lampiran 20. Data Uji Statistik Uji Stabilitas Viskositas Formula Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Viskositas	18	192,2222	16,01674	170,00	230,00

One-Sample Kolmogorov-Smirnov Test

		Viskositas
N		18
Normal Parameters[a,b]	Mean	192,2222
	Std. Deviation	16,01674
Most Extreme Differences	Absolute	,111
	Positive	,111
	Negative	-,083
Kolmogorov-Smirnov Z		,469
Asymp. Sig. (2-tailed)		,980

a. Test distribution is Normal.
b. Calculated from data.

Univariate Analysis of Variance

Descriptive Statistics

Dependent Variable: Viskositas

Formula	Waktu_pemeriksaan	Mean	Std. Deviation	N
F1	Sebelum cycling test	176,6667	5,77350	3
	Sesudah cycling test	205,0000	5,00000	3
	Total	190,8333	16,25320	6
F2	Sebelum cycling test	196,6667	2,88675	3
	Sesudah cycling test	213,3333	15,27525	3
	Total	205,0000	13,41641	6
K (-)	Sebelum cycling test	173,3333	2,88675	3
	Sesudah cycling test	188,3333	2,88675	3
	Total	180,8333	8,61201	6
Total	Sebelum cycling test	182,2222	11,48671	9
	Sesudah cycling test	202,2222	13,71840	9
	Total	192,2222	16,01674	18

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Viskositas

F	df1	df2	Sig.
3,447	5	12	,037

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Formula + Waktu_pemeriksaan + Formula * Waktu_pemeriksaan

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Viskositas

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-14,1667*	4,19435	,014	-25,3566	-2,9767
	K (-)	10,0000	4,19435	,082	-1,1900	21,1900
F2	F1	14,1667*	4,19435	,014	2,9767	25,3566
	K (-)	24,1667*	4,19435	,000	12,9767	35,3566
K (-)	F1	-10,0000	4,19435	,082	-21,1900	1,1900
	F2	-24,1667*	4,19435	,000	-35,3566	-12,9767

Based on observed means.

 The error term is Mean Square(Error) = 52,778.

*. The mean difference is significant at the ,05 level.

Homogeneous Subsets

Viskositas

Tukey HSD[a,b]

Formula	N	Subset	
		1	2
K (-)	6	180,8333	
F1	6	190,8333	
F2	6		205,0000
Sig.		,082	1,000

Means for groups in homogeneous subsets are displayed.

 Based on observed means.

 The error term is Mean Square(Error) = 52,778.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Lampiran 21. Perhitungan Nilai SPF (Sun Protection Factor)

Kontrol Positif Wardah *Sunscreen* Gel SPF 30

Panjang Gelombang	Serapan	EE X I	Abs X EE
290	2,2823	0,015	0,03423
295	2,4219	0,0817	0,19787
300	2,52	0,2874	0,72425
305	2,5656	0,3278	0,841
310	2,595	0,1864	0,48371
315	2,5361	0,037	0,09384
320	2,1392	0,018	0,03851
		Total	2,4134
		CF	12,4306
		SPF	30

Panjang Gelombang	Serapan	EE X I	Abs X EE
290	2,2951	0,015	0,03443
295	2,442	0,0817	0,19951
300	2,4931	0,2874	0,71652
305	2,5658	0,3278	0,84107
310	2,5585	0,1864	0,4769
315	2,4645	0,037	0,09119
320	2,1141	0,018	0,03805
		Total	2,39767
		CF	12,5122
		SPF	30

Panjang Gelombang	Serapan	EE X I	Abs X EE
290	2,3052	0,015	0,03458
295	2,4509	0,0817	0,20024
300	2,4875	0,2874	0,71491
305	2,5634	0,3278	0,84028
310	2,6629	0,1864	0,49636
315	2,524	0,037	0,09339
320	2,078	0,018	0,0374
		Total	2,41716
		CF	12,4112
		SPF	30

Perhitungan Nilai CF

CF = 30/ Total Abs x EE

Replikasi	Nilai CF
1	12,4306
2	12,5122
3	12,4112
Jumlah	37,354
Rata-rata	12,451
Nilai CF	**12,45**

Formula I Sediaan Emulgel Isomiristisin 0,5%

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,254	0,015	0,00381		
295	0,2455	0,0817	0,020057		
300	0,2385	0,2874	0,068545		
305	0,2319	0,3278	0,076017	12,45	**2,77**
310	0,2261	0,1864	0,042145		
315	0,2188	0,037	0,008096		
320	0,2152	0,018	0,003874		
		Total	0,222543		

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,2529	0,015	0,00379		
295	0,2441	0,0817	0,01994		
300	0,2368	0,2874	0,06806		
305	0,2308	0,3278	0,07566	12,45	**2,76**
310	0,2251	0,1864	0,04196		
315	0,2178	0,037	0,00806		
320	0,2143	0,018	0,00386		
		Total	0,22132		

Panjang Gelombang	Serapan	EE X I	Abs X I	CF	SPF
290	0,2524	0,015	0,00379		
295	0,2439	0,0817	0,01993		
300	0,2368	0,2874	0,06806		
305	0,2302	0,3278	0,07546	12,45	**2,75**
310	0,2242	0,1864	0,04179		
315	0,2175	0,037	0,00805		
320	0,2142	0,018	0,00386		
		Total	0,22092		

$$\text{Rata-rata Nilai SPF Formula I } 0,5\% = \frac{Replikasi\ 1 + Replikasi\ 2 + Replikasi\ 3}{3}$$

$$= \frac{2,77 + 2,76 + 2,75}{3}$$

$$= 2,76$$

Formula II Sediaan Emulgel Isomiristisin 1,0%

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,2644	0,015	0,003966		
295	0,2528	0,0817	0,020654		
300	0,2428	0,2874	0,069781		
305	0,2334	0,3278	0,076509	12,45	**2,80**
310	0,2252	0,1864	0,041977		
315	0,2145	0,037	0,007937		
320	0,2098	0,018	0,003776		
		Total	0,224599		

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,2649	0,015	0,00397		
295	0,2525	0,0817	0,02063		
300	0,2428	0,2874	0,06978		
305	0,2334	0,3278	0,07651	12,45	**2,80**
310	0,2251	0,1864	0,04196		
315	0,214	0,037	0,00792		
320	0,2092	0,018	0,00377		
		Total	0,22453		

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,2644	0,015	0,00397		
295	0,2524	0,0817	0,02062		
300	0,2425	0,2874	0,06969		
305	0,2334	0,3278	0,07651	12,45	**2,79**
310	0,2252	0,1864	0,04198		
315	0,2142	0,037	0,00793		
320	0,2092	0,018	0,00377		
		Total	0,22446		

Rata-rata nilai SPF Formula II 1,0% $= \dfrac{Replikasi\ 1 + Replikasi\ 2 + Replikasi\ 3}{3}$

$$= \frac{2,80 + 2,80 + 2,79}{3}$$

$$= 2,80$$

Formula III (Kontrol Negatif)

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,0305	0,015	0,000458		
295	0,0302	0,0817	0,002467		
300	0,0308	0,2874	0,008852		
305	0,0308	0,3278	0,010096	12,45	**0,37**
310	0,0309	0,1864	0,00576		
315	0,0312	0,037	0,001154		
320	0,0311	0,018	0,00056		
		Total	0,029347		

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,0314	0,015	0,00047		
295	0,0312	0,0817	0,00255		
300	0,031	0,2874	0,00891		
305	0,0306	0,3278	0,01003	12,45	**0,36**
310	0,0301	0,1864	0,00561		
315	0,0293	0,037	0,00108		
320	0,0286	0,018	0,00051		
		Total	0,02917		

Panjang Gelombang	Serapan	EE X I	Abs X EE	CF	SPF
290	0,0312	0,015	0,00047		
295	0,0307	0,0817	0,00251		
300	0,0302	0,2874	0,00868		
305	0,0297	0,3278	0,00974	12,45	**0,36**
310	0,0303	0,1864	0,00565		
315	0,0292	0,037	0,00108		
320	0,0281	0,018	0,00051		
		Total	0,02863		

$$\text{Rata-rata nilai SPF Formula II 1,0\%} = \frac{Replikasi\ 1 + Replikasi\ 2 + Replikasi\ 3}{3}$$

$$= \frac{0,37 + 0,36 + 0,36}{3}$$

$$= 0,36$$

Lampiran 22. Data Uji Statistik Nilai Sun Protection Factor Formula Emulgel Isomiristisin

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
SPF	12	8,9800	12,71731	,36	30,00

One-Sample Kolmogorov-Smirnov Test

		SPF
N		12
Normal Parameters[a,b]	Mean	8,9800
	Std. Deviation	12,71731
Most Extreme Differences	Absolute	,436
	Positive	,436
	Negative	-,249
Kolmogorov-Smirnov Z		1,512
Asymp. Sig. (2-tailed)		,210

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Descriptives

SPF

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1	3	2,7600	,01000	,00577	2,7352	2,7848	2,75	2,77
F2	3	2,7967	,00577	,00333	2,7823	2,8110	2,79	2,80
K (-)	3	,3633	,00577	,00333	,3490	,3777	,36	,37
K (+)	3	30,0000	,00000	,00000	30,0000	30,0000	30,00	30,00
Total	12	8,9800	12,71731	3,67117	,8998	17,0602	,36	30,00

Test of Homogeneity of Variances

SPF

Levene Statistic	df1	df2	Sig.
2,303	3	8	,154

ANOVA

SPF

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1779,028	3	593,009	14232224,533	,000
Within Groups	,000	8	,000		
Total	1779,028	11			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: SPF

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
F1	F2	-,03667*	,00527	,001	-,0535	-,0198
	K (-)	2,39667*	,00527	,000	2,3798	2,4135
	K (+)	-27,24000*	,00527	,000	-27,2569	-27,2231
F2	F1	,03667*	,00527	,001	,0198	,0535
	K (-)	2,43333*	,00527	,000	2,4165	2,4502
	K (+)	-27,20333*	,00527	,000	-27,2202	-27,1865
K (-)	F1	-2,39667*	,00527	,000	-2,4135	-2,3798
	F2	-2,43333*	,00527	,000	-2,4502	-2,4165
	K (+)	-29,63667*	,00527	,000	-29,6535	-29,6198
K (+)	F1	27,24000*	,00527	,000	27,2231	27,2569
	F2	27,20333*	,00527	,000	27,1865	27,2202
	K (-)	29,63667*	,00527	,000	29,6198	29,6535

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

SPF

Tukey HSD[a]

Formula	N	Subset for alpha = 0.05 1	2	3	4
K (-)	3	,3633			
F1	3		2,7600		
F2	3			2,7967	
K (+)	3				30,0000
Sig.		1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 23. Proses Pembuatan Sediaan Emulgel Isomiristisin

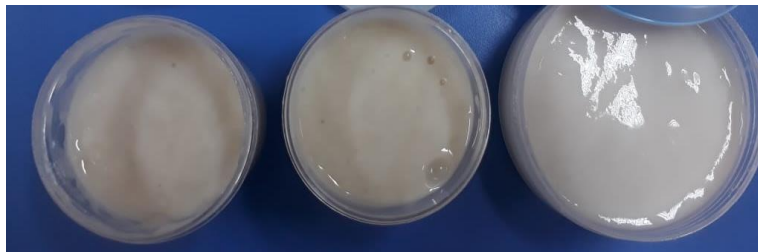Isomiristisin

Basis Gel

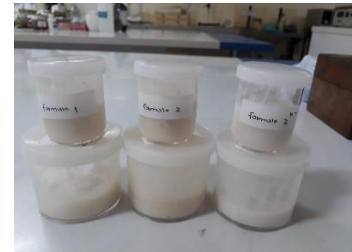Pembuatan Emulsi (Fase air dan Fase Minyak)

Emulgel

Lampiran 24. Pengujian Mutu Fisik Sediaan Emulgel Isomiristisin

Formula Sediaan Emulgel Hari ke-1
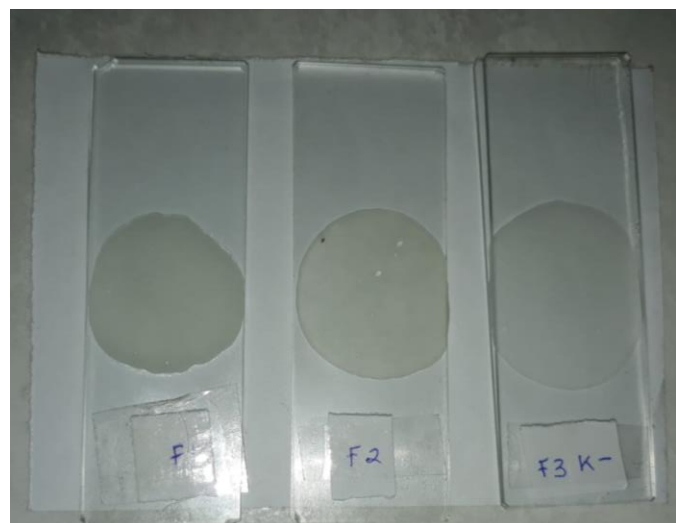

Formula Emulgel Hari ke-21

Uji Viskositas

Uji Daya Sebar
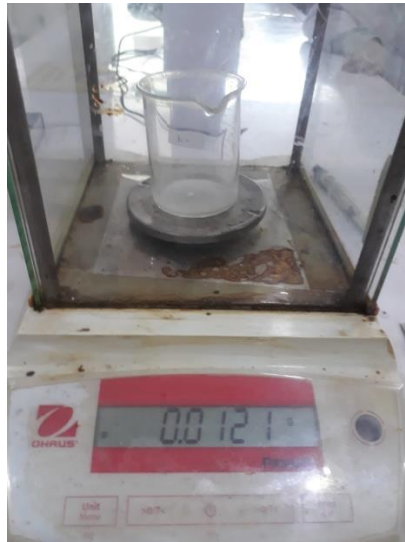

Uji Daya Lekat

Uji Homogenitas

Uji pH

Pengujian Stabilitas (*Cycling Test*)

Lampiran 25. Penentuan Aktivitas Tabir Surya Secara _In Vitro_

Penimbangan Sampel

Proses Ultrasonifikasi

Sampel

Lampiran 26. Penentuan Aktivitas Tabir Surya Secara *In Vivo*

Lampu Exoterra Solar Lamp 80 Watt

Wardah *Sunscreen* Gel SPF 30

Kelinci Putih Jantan *New Zealand*

Pencukuran Punggung Hewan Uji

Hasil Penyinaran

Lampiran 27. Perhitungan Luas Eritema

Perlakuan	Hasil Luas Eritema (cm)	Rata-rata	SD	Rata-rata ± SD
1	0,4			
	0,3			
	0,1	0,27	0,15	0,27 ± 0,15
2	0,2			
	0,3			
	0,2	0,23	0,06	0,23 ± 0,06
3	0,5			
	0,3			
	0,2	0,33	0,15	0,33 ± 0,15
4	-	-	-	-