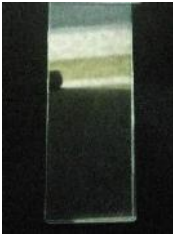


LAMPIRAN

Lampiran A. Gambar Uji Organoleptik Basis *Spray Gel*

Formula 1	Formula 2	Formula 3
		

Lampiran B. Gambar Uji Homogenitas Basis *Spray Gel*

Formula 1	Formula 2	Formula 3
		

Lampiran C. Gambar Uji Pola Penyemprotan Basis *Spray Gel*

Formula	Jarak		
	5 cm	10 cm	15 cm
1			
2			
3			

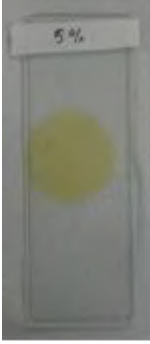
Lampiran D. Gambar Uji Daya Lekat Basis *Spray Gel*

Formula		
1	2	3
		
		
		

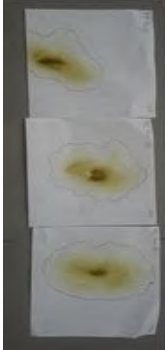
Lampiran E. Gambar Uji Organoleptik Sediaan *Spray Gel* Ekstrak Sambiloto



Lampiran F. Gambar Uji Organoleptik Sediaan *Spray Gel* Ekstrak Sambiloto

Formula 1	Formula 2	Formula 3
		

Lampiran G. Gambar Uji Pola Penyemprotan Sediaan *Spray Gel*
Ekstrak Sambiloto

Formula	Jarak		
	5 cm	10 cm	15 cm
1			
2			
3			

Lampiran H. Gambar Uji Daya Lekat Sediaan *Spray Gel* Ekstrak Sambiloto

Formula		
1	2	3
		
		
		

Lampiran I. Tabel Uji *Pump Delivery* Basis Sediaan *Spray Gel*

Pengujian	Bobot Sediaan yang Keluar (gram)		
	Formula 1	Formula 2	Formula 3
1	0,15	0,17	0,18
2	0,15	0,17	0,16
3	0,14	0,16	0,15
4	0,14	0,15	0,16
5	0,15	0,17	0,15
6	0,15	0,17	0,14
7	0,14	0,17	0,16
8	0,15	0,16	0,16
9	0,14	0,16	0,17
10	0,15	0,17	0,16
Rata-rata	0,146	0,165	0,159
SD	0,005	0,007	0,011
%CV	3,42%	4,24%	6,92%

Lampiran J. Tabel Uji *Pump Delivery* Sediaan *Spray Gel* Ekstrak Sambiloto

Pengujian	Bobot Sediaan yang Keluar (gram)		
	Formula 1	Formula 2	Formula 3
1	0,14	0,15	0,11
2	0,15	0,16	0,11
3	0,14	0,16	0,11
4	0,14	0,17	0,11
5	0,15	0,17	0,11
6	0,14	0,16	0,12
7	0,15	0,16	0,11
8	0,14	0,16	0,12
9	0,15	0,17	0,12
10	0,15	0,16	0,12
Rata-rata	0,145	0,162	0,114
SD	0,005	0,006	0,005
%CV	3,44%	3,7%	4,38%

Lampiran K. Data statistic pH Basis Sediaan *Spray Gel*

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.751	2	1.376	24.623	.001
Within Groups	.335	6	.056		
Total	3.086	8			

Post Hoc Tests

Multiple Comparisons

pH

LSD

(I) Pengujian	(J) Pengujian	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-1.06000*	.19299	.002	-1.5322	-.5878
	Formula 3	-1.26000*	.19299	.001	-1.7322	-.7878
Formula 2	Formula 1	1.06000*	.19299	.002	.5878	1.5322
	Formula 3	-.20000	.19299	.340	-.6722	.2722
Formula 3	Formula 1	1.26000*	.19299	.001	.7878	1.7322
	Formula 2	.20000	.19299	.340	-.2722	.6722

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

Lampiran L. Data statistic viskositas Basis Sediaan *Spray Gel*

ANOVA

Viskosits

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.258E7	2	1.629E7	2136.867	.000
Within Groups	45733.333	6	7622.222		
Total	3.262E7	8			

Post Hoc Tests

Multiple Comparisons

Viskosits

LSD

(I) Pengujian	(J) Pengujian	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-1463.333*	71.285	.000	-1637.76	-1288.91
	Formula 3	-4563.333*	71.285	.000	-4737.76	-4388.91
Formula 2	Formula 1	1463.333*	71.285	.000	1288.91	1637.76
	Formula 3	-3100.000*	71.285	.000	-3274.43	-2925.57
Formula 3	Formula 1	4563.333*	71.285	.000	4388.91	4737.76
	Formula 2	3100.000*	71.285	.000	2925.57	3274.43

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

Lampiran M. Data statistic pH Sediaan *Spray Gel* Ekstrak
Sambiloto

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.235	2	.118	11.028	.010
Within Groups	.064	6	.011		
Total	.299	8			

Post Hoc Tests

Multiple Comparisons

pH

LSD

(I) Pengujian	(J) Pengujian	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-.38667*	.08428	.004	-.5929	-.1804
	— Formula 3	-.12000	.08428	.204	-.3262	.0862
Formula 2	Formula 1	.38667*	.08428	.004	.1804	.5929
	— Formula 3	.26667*	.08428	.019	.0604	.4729
Formula 3	Formula 1	.12000	.08428	.204	-.0862	.3262
	— Formula 2	-.26667*	.08428	.019	-.4729	-.0604

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

Lampiran N. Data Statistic Viskositas Sediaan *Spray Gel* Ekstrak
Sambiloto

ANOVA

Viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.430E7	2	2.215E7	6645.510	.000
Within Groups	20000.000	6	3333.333		
Total	4.432E7	8			

Post Hoc Tests

Multiple Comparisons

Viskositas

LSD

(I) Pengujian	(J) Pengujian	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-2910.000*	47.140	.000	- 3025.35	- 2794.65
	Formula 3	-5430.000*	47.140	.000	- 5545.35	- 5314.65
Formula 2	Formula 1	2910.000*	47.140	.000	2794.65	3025.35
	Formula 3	-2520.000*	47.140	.000	- 2635.35	- 2404.65
Formula 3	Formula 1	5430.000*	47.140	.000	5314.65	5545.35
	Formula 2	2520.000*	47.140	.000	2404.65	2635.35

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

Lampiran O. Alat dan Instrumen yang Digunakan



Lampiran P. Tabel Absorban Andrografolit

Konsentrasi (ppm)	Absorban
2	0,08
4	0,16
6	0,246
8	0,322
10	0,406
12	0,495

Lampiran Q. Tabel Perhitungan Jumlah Komulatif Zat Terpenetrasi
Per Luas Area

Formula 1						
t	y	C	Qb,	FK	Qb'	Q
15	0,026	0,729	16,763	0,158	16,921	9,401
30	0,027	0,753	17,320	0,164	17,483	9,713
45	0,027	0,753	17,320	0,164	17,483	9,713
60	0,029	0,801	18,433	0,174	18,608	10,338
90	0,033	0,898	20,661	0,195	20,856	11,587
120	0,045	1,189	27,344	0,258	27,602	15,335
180	0,048	1,262	29,015	0,274	29,289	16,272
240	0,050	1,310	30,128	0,285	30,413	16,896

Formula 2						
t	y	C	Qb,	FK	Qb'	Q
15	0,015	0,462	10,637	0,101	10,737	5,965
30	0,022	0,632	14,535	0,137	14,672	8,151
45	0,024	0,680	15,649	0,148	15,797	8,776
60	0,024	0,680	15,649	0,148	15,797	8,776
90	0,028	0,777	17,877	0,169	18,045	10,025
120	0,031	0,850	19,547	0,185	19,732	10,962
180	0,035	0,947	21,775	0,206	21,981	12,211
240	0,040	1,068	24,559	0,232	24,791	13,773

Formula 3						
t	y	C	Qb,	FK	Qb'	Q
15	0,011	0,366	8,409	0,079	8,489	4,716
30	0,018	0,535	12,308	0,116	12,424	6,902
45	0,019	0,559	12,864	0,122	12,986	7,214
60	0,019	0,559	12,864	0,122	12,986	7,214
90	0,021	0,608	13,978	0,132	14,110	7,839
120	0,021	0,608	13,978	0,132	14,110	7,839
180	0,022	0,632	14,535	0,137	14,672	8,151
240	0,023	0,656	15,092	0,143	15,235	8,464

Lampiran R. Contoh Perhitungan Jumlah Kumulatif Zat Terpenetrasi Per Luas Area

- Menit ke-15

$$y = 0,0413x - 0,0041$$

$$\text{Absorban (y)} = 0,026$$

$$\begin{aligned}\text{Konsentrasi zat aktif (C)} &= (y - a)/b \\ &= (0,026 + 0,0041)/0,0413 \\ &= 0,729 \mu\text{g/ml}\end{aligned}$$

$$\begin{aligned}\text{Jumlah zat aktif yang terabsorpsi (Qb')} &= C \times \text{Volume cairan reseptor} \\ &= 0,729 \mu\text{g/ml} \times 23 \text{ ml} \\ &= 16,763 \mu\text{g}\end{aligned}$$

$$\begin{aligned}\text{Faktor Koreksi (FK)} &= C \times \text{Volume sampel} \\ &= 0,729 \mu\text{g/ml} \times (5/23) \\ &= 0,158\end{aligned}$$

$$\begin{aligned}\text{Jumlah zat aktif yang terabsorpsi setelah dikoreksi (Qb)} & \\ &= \text{FK} \times \text{Qb'}\end{aligned}$$

$$= 0,158 \times 16,763 \mu\text{g} = 16,921 \mu\text{g}$$

$$\begin{aligned}\text{Jumlah kumulatif zat terpenetrasi per luas area (Q)} & \\ &= \text{Qb} / \text{Luas membrane}\end{aligned}$$

$$= 16,921 \mu\text{g} / 1,8 \text{ cm}^2 = 9,401 \mu\text{g/cm}^2$$

$$\begin{aligned}\% \text{penetrasi} &= \text{Q} / \text{konsentrasi zat aktif} \times 100\% \\ &= (9,401 \mu\text{g/cm}^2 / 410,41 \mu\text{g}) \times 100\% \\ &= 2,2906 \%\end{aligned}$$

Lampiran S. Contoh Perhitungan Fluks

$$J = \frac{Q}{t}$$

Keterangan :

J = Fluks pada jam ke-n ($\mu\text{g cm}^{-2} \text{ jam}^{-1}$)

Q = Jumlah kumulatif terpenetrasi pada jam ke-n ($\mu\text{g cm}^{-2}$)

t = Waktu (jam)

• Menit ke-15 (jam ke-0,25)

$$J = Q/t$$

$$= 9,401 \mu\text{g cm}^{-2} / 0,25 \text{ jam}$$

$$= 37,6025 \mu\text{g cm}^{-2} \text{ jam}^{-1}$$

Lampiran T. Surat Kode Etik



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
UNIVERSITAS PADJADJARAN
KOMISI ETIK PENELITIAN
RESEARCH ETHICS COMMITTEE

Jl. Prof. Eykhan No. 38 Bandung 40132
 Telp. & Fax: 022-25318697 email: kepk@unpad.ac.id, website: kepk@unpad.ac.id

Persetujuan Etik
ETHICAL APPROVAL

Nomor: **637 JUNG/KEP/EC/2019**

No. Reg.: 0219040524

Komisi Etik Penelitian Universitas Padjadjaran Bandung, telah mengkaji dengan teliti proposal penelitian yang menggunakan subjek Hewan Coba dalam penelitian yang berjudul:

The Research Ethics Committee Universitas Padjadjaran Bandung, has been thoroughly reviewed proposal for research with animal subjects in research entitled:

***FORMULASI SEDIAAN SPRAY GEL EKTRAK SAMBILOTO (ANDROGRAPHIS PANICULATA NESS.)**

Nama Peneliti Utama Principal Researcher	: Abdul Karim Amullah
Pembimbing/Peneliti Lain Supervisor/Other Researcher	: Yanni Dhiari Mardhiani, M.BSc., Apt. Rahma Ziska, M.Si.
Nama Institusi Institution	: Program Sarjana Program Studi Farmasi Fakultas Farmasi Sekolah Tinggi Farmasi Bandung

proposai tersebut dapat disetujui pelaksanaannya.
herby declare that the proposal is approved.



Ditetapkan di : Bandung
 Issued in
 Tanggal : 10-05-2019
 Date

Ketua
Chairman



Dr. Melva Diftamayanti, dr., SpAK., M.Kes
 NIP. 19630519 198712 2 001

Keterangan/notes:
 Persetujuan etik ini berlaku selama satu tahun sejak tanggal ditetapkan.
 This ethical clearance is effective for one year from the due date.
 Pada akhir penelitian, laporan pelaksanaan penelitian harus diserahkan ke Komisi Etik Penelitian.
 In the end of the research, progress and final summary report should be submitted to the Research Ethics Committee.
 Jika ada perubahan atau penyimpangan protokol dan/atau pelaksanaan penelitian, harus mengajukan kembali permohonan kajian etik penelitian.
 If there be any protocol modification or deviation and/or extension of the study, the Principal Investigator is required to resubmit the protocol for approval.
 Jika ada kejadian serius yang tidak diinginkan (KTD) harus segera dilaporkan ke Komisi Etik Penelitian.
 If there are Serious Adverse Events (SAE) should be immediately reported to the Research Ethics Committee.