

Lampiran 1. Perhitungan Uji Perolehan Kembali

Formula	Berat mikrokapsul (g)	Total bahan Pembentuk (g)	UPK (%)
I	1,681	2	84,05%,
II	2,6864	3	89,54%
III	3,9216	4	98,02%.

Perhitungan :**Formula I**

$$\%UPK = \frac{1,681}{2,000} \times 100\% = 84,05\%$$

Formula II

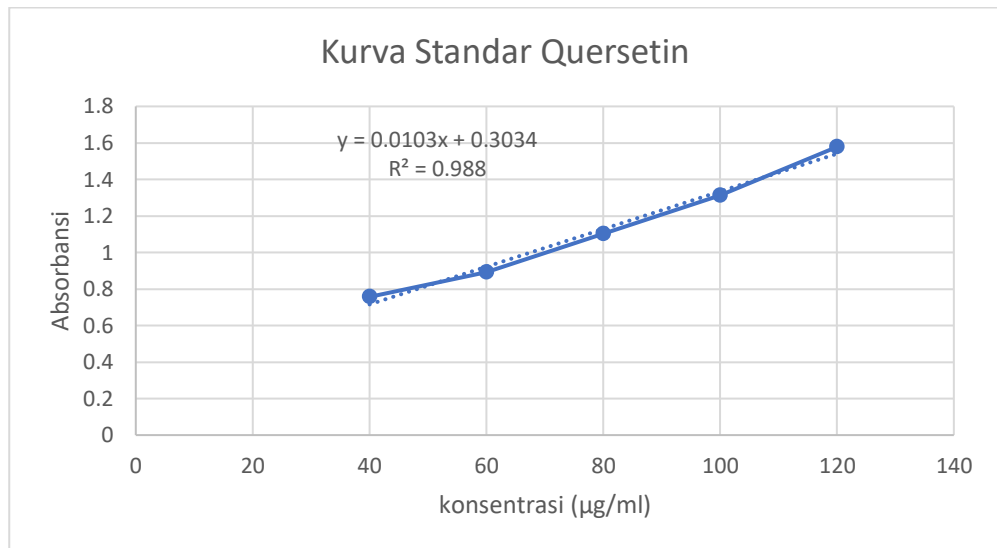
$$\%UPK = \frac{2,6864}{3,000} \times 100\% = 89,54\%$$

Formula III

$$\%UPK = \frac{3,921}{4,000} \times 100\% = 98.02\%$$

Lampiran 2. Hasil Perhitungan Efisiensi Enkapsulasi

1. Kurva Baku Standar Kuersetin

2. Kadar Flavanoid dalam Ekstrak dan dalam Tiap Formula Mikrokapsul
Kombinasi ekstrak Daun Katuk & Rimpang Kunyit

Formula	Konsentrasi	Absorbansi	Konsentrasi Total Flavanoid (µg/ml)
Ekstrak	100 ppm	1.188	85.883
	100 ppm	1.195	86.563
Rata-rata			86.223
Formula I	100 ppm	0.756	43.941
	100 ppm	0.800	48.213
Rata-rata			46.077
Formula II	100 ppm	0.861	54.135
	100 ppm	0.846	52.679
Rata-rata			53.407
Formula III	100 ppm	0.956	63.359
	100 ppm	0.942	62
Rata-rata			62.6795

Contoh Perhitungan Formula I

$$\text{Kandungan Total Flavanoid F1} = \frac{(y-a)}{b} = \frac{(0.756-0.3034)}{0.0103} = 43.941 \mu\text{g/ml}$$

3. Efisiensi Enkapsulasi oleh Mikrokapsul

Formula	A	B	% Enkapsulasi
Ekstrak	86.223		
I		46.077	53.439
II		53.407	61.940
III		62.679	72.694

Keterangan :

A = Kadar flavanoid dalam tiap gram ekstrak

B = Kadar flavanoid dalam tiap gram mikrokapsul

Rumus Perhitungan efisiensi penyerapan dalam mikrokapsul :

$$\text{Efisiensi Penjerapan (\%)} = \frac{\text{Kadar flavanoid tiap gram mikrokapsul}}{\text{Kadar flavanoid tiap gram ekstrak}} \times 100\%$$

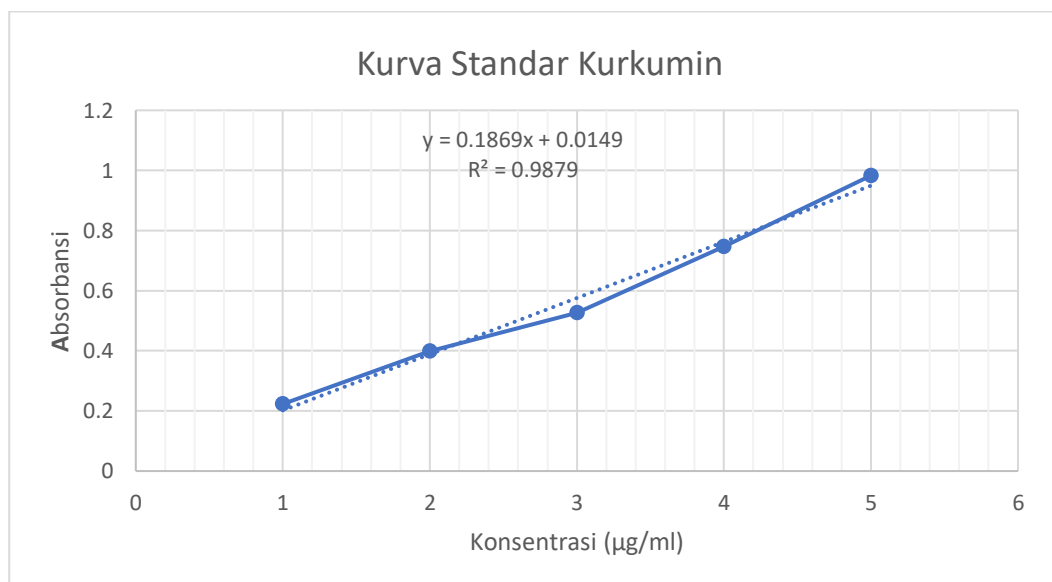
Perhitungan Efisiensi Enkapsulasi :

$$\text{Formula I} = \frac{46.077}{86.223} \times 100 = 53.439\%$$

$$\text{Formula II} = \frac{53.407}{86.223} \times 100 = 61.940\%$$

$$\text{Formula III} = \frac{62.679}{86.223} \times 100 = 72.694\%$$

4. Kurva Kalibrasi Standar Kurkumin



5. Kadar Kurkumin dalam Ekstrak dan dalam Tiap Formula Mikrokapsul Kombinasi ekstrak Daun Katuk & Rimpang Kunyit

Formula	Konsentrasi	Absorbansi	Kandungan Kurkumin (µg/ml)
Ekstrak	100 ppm	3.144	16.635
	100 ppm	3.124	16.817
Rata-rata			16.726
Formula I	100 ppm	0.469	2.429
	100 ppm	0.467	2.418
Rata-rata			2.423
Formula II	100 ppm	0.533	2.772
	100 ppm	0.534	2.777
Rata-rata			2.774
Formula III	100 ppm	0.850	4.468
	100 ppm	0.846	4.446
Rata-rata			4.457

6. Efisiensi Enkapsulasi oleh Mikrokapsul

Formula	A	B	% Enkapsulasi
Ekstrak	16.726		
I		2.423	14.486
II		2.774	16.584
III		4.457	26.674

Keterangan :

A = Kadar Kurcumin dalam tiap gram ekstrak

B = Kadar Kurkumin dalam tiap gram mikrokapsul

Rumus Perhitungan efisiensi penyerapan dalam mikrokapsul :

$$\text{Efisiensi Penjerapan (\%)} = \frac{\text{Kadar kurkumin tiap gram mikrokapsul}}{\text{Kadar kurkumin tiap gram ekstrak}} \times 100\%$$

Perhitungan Efisiensi Enkapsulasi :

$$\text{Formula I} = \frac{2.423}{16.726} \times 100 = 14,486\%$$

$$\text{Formula II} = \frac{2.774}{16.726} \times 100 = 16.584\%$$

$$\text{Formula III} = \frac{4.457}{16.726} \times 100 = 26.674\%$$

Lampiran 3. Hasil Uji Stabilitas Fisik Mikro kapsul

Formula	Hari Pengujian	Hasil Pengujian	Gambar Mikro kapsul
I	0	serbuk mikro kapsul berwarna coklat jingga dengan bentuk butiran bulat serta bau simplisia yang khas	
	7	Tidak Terdapat perubahan organoleptis	
	14	Tidak Terdapat perubahan organoleptis	
	21	Tidak Terdapat perubahan organoleptis	

	28	Tidak Terdapat perubahan organoleptis	
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Formula	Hari Pengujian	Hasil Pengujian	Gambar Mikrokapsul
II	0	serbuk mikrokapsul berwarna Cokelat jingga dengan bentuk butiran bulat serta bau simplisia yang khas	
	7	Tidak Terdapat perubahan organoleptis	
	14	Tidak Terdapat perubahan organoleptis	

	21	Tidak Terdapat perubahan organoleptis	
	28	Tidak Terdapat perubahan organoleptis	

Formula	Hari Pengujian	Hasil Pengujian	Gambar Mikro kapsul
III	0	serbuk mikro kapsul berwarna coklat jingga dengan bentuk butiran bulat serta bau simplisia yang khas	
	7	Tidak Terdapat perubahan organoleptis	

	14	Tidak Terdapat perubahan organoleptis	
	21	Tidak Terdapat perubahan organoleptis	
	28	Tidak Terdapat perubahan organoleptis	

Lampiran 4. Distribusi Ukuran Partikel Formula I

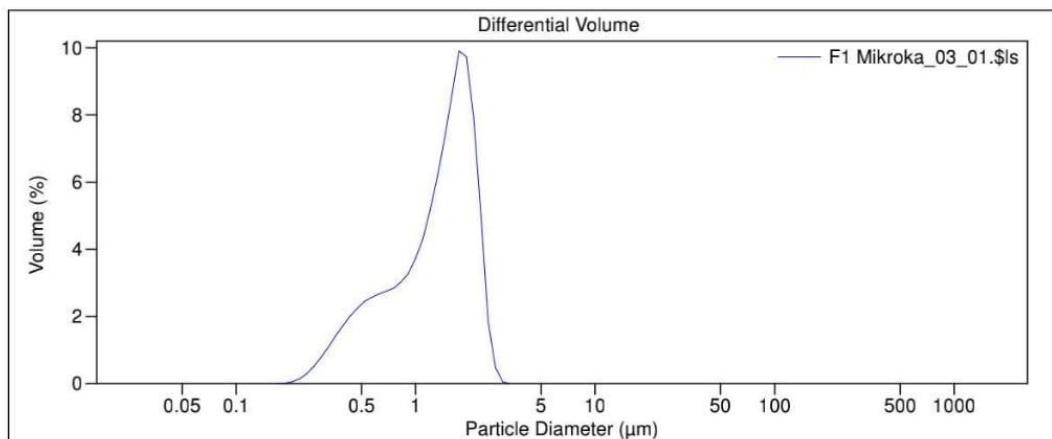


LS Particle Size Analyzer

17 Jun 2022 14:30

Beckman Coulter LS 13 320

File name:	D:\Penguian sampel\2022\Juni\Wet sample\F1 Mikroka_03_01.\$ls		
File ID:	F1 Mikroka_03_01.\$ls		
Sample ID:	F1 Mikrokapsul		
Operator:	Anggun		
Run number:	3		
Optical model:	Fraunhofer.rf780d PIDS: Submicron-only, Extended range		
Residual:	0.41%		
LS 13 320	Universal Liquid Module		
Start time:	14:29 17 Jun 2022	Run length:	51 seconds
Pump speed:	51%	PIDS Obscur:	35%
Obscuration:	5%		
Fluid:	H2O		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic)		F1 Mikroka_03_01.\$ls	
Calculations from 0.017 µm to 2000 µm			
Volume:	100%	S.D.:	0.608 µm
Mean:	1.354 µm	Variance:	0.370 µm ²
Median:	1.400 µm	C.V.:	44.9%
Mean/Median ratio:	0.967	Skewness:	-0.022 Left skewed
Mode:	1.748 µm	Kurtosis:	-0.972 Platykurtic
d ₁₀ :	0.491 µm	d ₅₀ :	1.400 µm
		d ₉₀ :	2.142 µm
<10%	<25%	<50%	<75%
0.491 µm	0.829 µm	1.400 µm	1.832 µm
			2.142 µm

Lampiran 5. Distribusi Ukuran Partikel Formula II

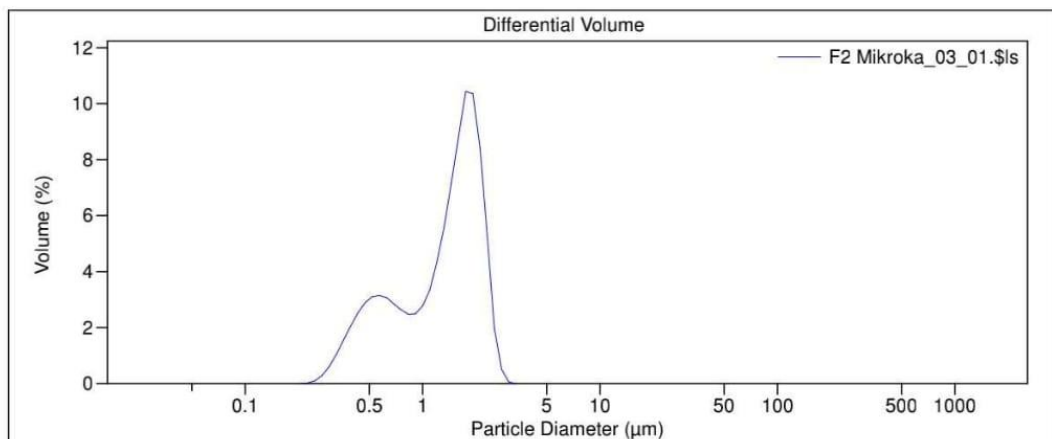


LS Particle Size Analyzer

17 Jun 2022 14:47

Beckman Coulter LS 13 320

File name:	D:\Penguian sampel\2022\Juni\Wet sample\F2 Mikroka_03_01.\$ls		
File ID:	F2 Mikroka_03_01.\$ls		
Sample ID:	F2 Mikrokapsul		
Operator:	Anggun		
Run number:	3		
Optical model:	Fraunhofer.rf780d PIDS: Submicron-only, Extended range		
Residual:	0.43%		
LS 13 320	Universal Liquid Module		
Start time:	14:45 17 Jun 2022	Run length:	51 seconds
Pump speed:	51%	PIDS Obscur:	39%
Obscuration:	0%		
Fluid:	H2O		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic)		F2 Mikroka_03_01.\$ls	
Calculations from 0.017 µm to 2000 µm			
Volume:	100%	S.D.:	0.624 µm
Mean:	1.363 µm	Variance:	0.390 µm ²
Median:	1.442 µm	C.V.:	45.8%
Mean/Median ratio:	0.945	Skewness:	-0.061 Left skewed
Mode:	1.748 µm	Kurtosis:	-1.077 Platykurtic
d ₁₀ :	0.480 µm	d ₅₀ :	1.442 µm
		d ₉₀ :	2.157 µm
<10%	<25%	<50%	<75%
0.480 µm	0.767 µm	1.442 µm	1.860 µm
			2.157 µm

Lampiran 6. Distribusi Ukuran Partikel Formula III

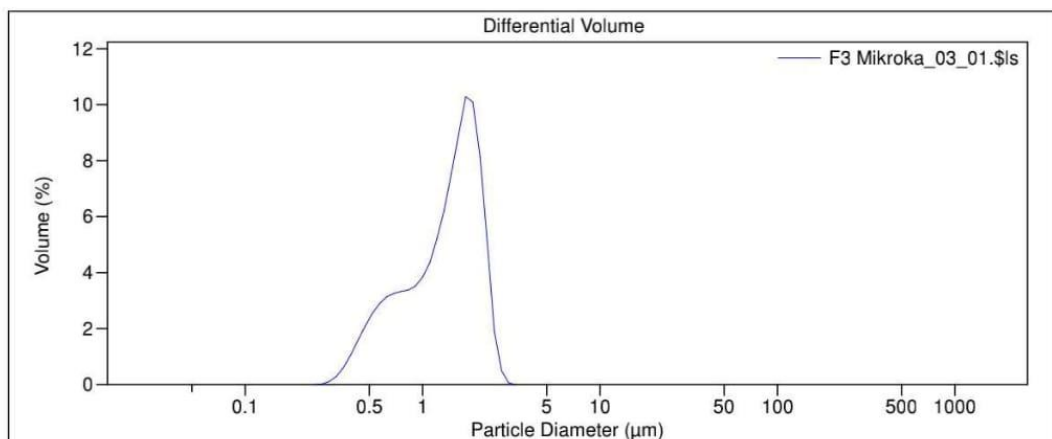


LS Particle Size Analyzer

4 Jul 2022 9:06

Beckman Coulter LS 13 320

File name: D:\Pengujian sampel\2022\Juli\Wet sample\F3 Mikroka_03_01.\$ls
 File ID: F3 Mikroka_03_01.\$ls
 Sample ID: F3 Mikrokapsul
 Operator: Anggun
 Run number: 3
 Optical model: Fraunhofer.rf780d PIDS: Submicron-only, Extended range
 Residual: 0.44%
 LS 13 320 Universal Liquid Module
 Start time: 9:04 4 Jul 2022 Run length: 50 seconds
 Pump speed: 51%
 Obscuration: 1% PIDS Obscur: 40%
 Fluid: H2O
 Software: 6.01 Firmware: 4.00



Volume Statistics (Arithmetic) F3 Mikroka_03_01.\$ls

Calculations from 0.017 μm to 2000 μm

Volume:	100%	S.D.:	0.581 μm
Mean:	1.391 μm	Variance:	0.338 μm ²
Median:	1.430 μm	C.V.:	41.8%
Mean/Median ratio:	0.973	Skewness:	0.010 Right skewed
Mode:	1.748 μm	Kurtosis:	-0.952 Platykurtic

d ₁₀ :	0.576 μm	d ₅₀ :	1.430 μm	d ₉₀ :	2.149 μm
<10%	0.576 μm	<25%	0.886 μm	<50%	1.430 μm
		<75%	1.846 μm	<90%	2.149 μm

2022.07.08 16:23:43

HORIBA
Scientific

HORIBA SZ-100 for Windows [Z Type] Ver2.40

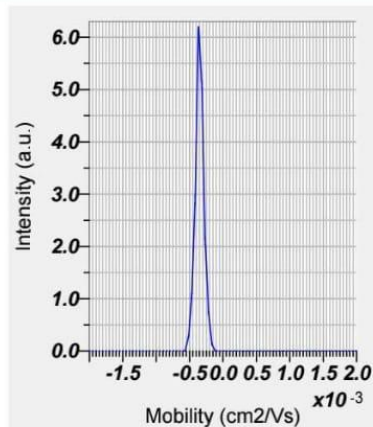
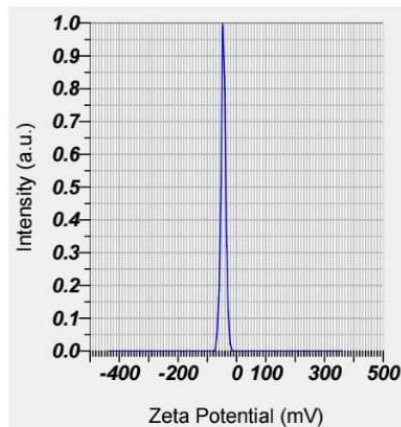
SZ-100**Measurement Results****F1 Mikrokapsul Kombinasi_1646.nzt****Measurement Results**

Date : Jumat, 08 Juli 2022 16.12.20
 Measurement Type : Zeta Potential
 Sample Name : F1 Mikrokapsul Kombinasi
 Temperature of the Holder : 25.0 deg. C
 Dispersion Medium Viscosity : 0.895 mPa.s
 Conductivity : 0.078 mS/cm
 Electrode Voltage : 3.9 V

Calculation Results

Peak No.	Zeta Potential	Electrophoretic Mobility
1	-45.0 mV	-0.000349 cm ² /Vs
2	--- mV	--- cm ² /Vs
3	--- mV	--- cm ² /Vs

Zeta Potential (Mean) : -45.0 mV

Electrophoretic Mobility Mean : -0.000349 cm²/Vs

Lampiran 8. Pengujian Zeta Potensial Formula II

2022.07.08 16:23:39

HORIBA
Scientific

HORIBA SZ-100 for Windows [Z Type] Ver2.40

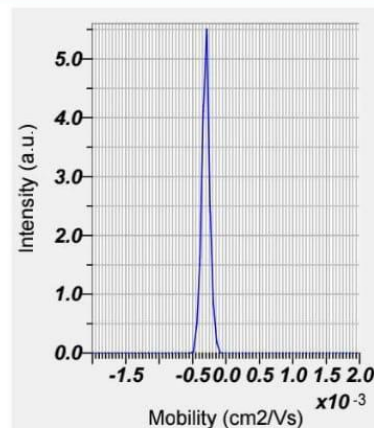
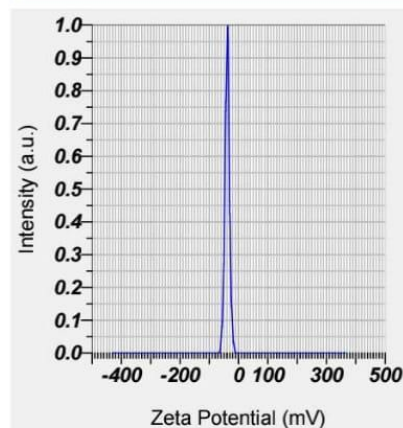
SZ-100**Measurement Results****F2 Mikrokapsul Kombinasi_1645.nzt****Measurement Results**

Date : Jumat, 08 Juli 2022 16.00.36
 Measurement Type : Zeta Potential
 Sample Name : F2 Mikrokapsul Kombinasi
 Temperature of the Holder : 25.0 deg. C
 Dispersion Medium Viscosity : 0.895 mPa.s
 Conductivity : 0.079 mS/cm
 Electrode Voltage : 3.8 V

Calculation Results

Peak No.	Zeta Potential	Electrophoretic Mobility
1	-38.9 mV	-0.000301 cm ² /Vs
2	---	---
3	---	---

Zeta Potential (Mean) : -38.9 mV

Electrophoretic Mobility Mean : -0.000301 cm²/Vs

Lampiran 9. Pengujian Zeta Potensial Formula III

2022.07.08 16:23:34

HORIBA
Scientific

HORIBA SZ-100 for Windows [Z Type] Ver2.40

SZ-100

Measurement Results

F3 Mikrokapsul Kombinasi_1644.nzt

Measurement Results

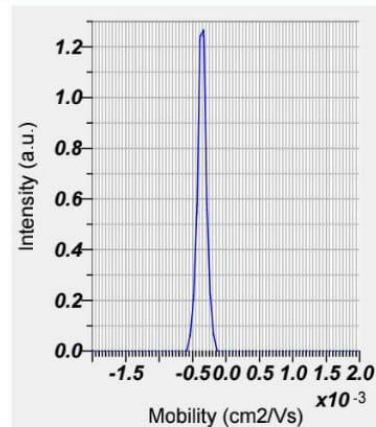
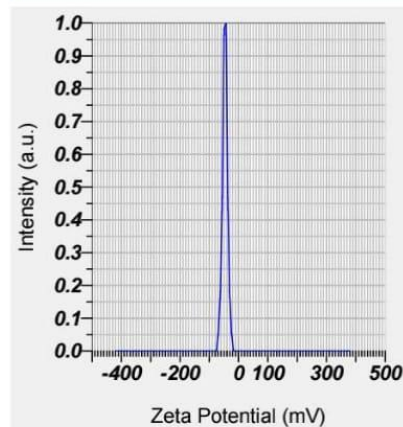
Date : Jumat, 08 Juli 2022 15.56.57
 Measurement Type : Zeta Potential
 Sample Name : F3 Mikrokapsul Kombinasi
 Temperature of the Holder : 25.0 deg. C
 Dispersion Medium Viscosity : 0.896 mPa.s
 Conductivity : 0.081 mS/cm
 Electrode Voltage : 3.8 V

Calculation Results

Peak No.	Zeta Potential	Electrophoretic Mobility
1	-46.3 mV	-0.000358 cm ² /Vs
2	--- mV	--- cm ² /Vs
3	--- mV	--- cm ² /Vs

Zeta Potential (Mean) : -46.3 mV

Electrophoretic Mobility Mean : -0.000358 cm²/Vs



CS Dipindai dengan CamScanner

Lampiran 10. Hasil Uji Statistik

1. Uji Perolehan Kembali

Descriptives

Rendemen

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formulasi 1	3	84.05	4.036	2.330	74.02	94.07	81	89
Formulasi 2	3	89.55	.946	.546	87.20	91.90	89	91
Formulasi 3	3	98.02	.021	.012	97.97	98.08	98	98
Total	9	90.54	6.440	2.147	85.59	95.49	81	98

Tests of Normality

	Formulasi	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Rendemen	Formulasi 1	.268	3	.	.951	3	.572
	Formulasi 2	.182	3	.	.999	3	.936
	Formulasi 3	.292	3	.	.923	3	.463

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Rendemen

Levene Statistic	df1	df2	Sig.
6.516	2	6	.031

Test Statistics^{a,b}

	UPK
Chi-Square	7.200
df	2
Asymp. Sig.	.027

a. Kruskal Wallis Test

b. Grouping Variable:

Formula

2. Uji Kadar Air**Descriptives**

Kadar air

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	Minimum	Maximum
--	---	------	----------------	------------	----------------------------------	---------	---------

					Lower Bound	Upper Bound		
F1	3	.96033	.052348	.030223	.83029	1.09037	.901	1.000
F2	3	1.27500	.028583	.016503	1.20400	1.34600	1.252	1.307
F3	3	4.30500	.567379	.327576	2.89555	5.71445	3.883	4.950
Total	9	2.18011	1.624718	.541573	.93124	3.42898	.901	4.950

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
F1		.313	3	.	.894	3	.367
Kadar_air	F2	.290	3	.	.926	3	.473
	F3	.320	3	.	.884	3	.337

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Kadar_air

Levene Statistic	df1	df2	Sig.
10.637	2	6	.011

Test Statistics^{a,b}

	Kadar_air
Chi-Square	7.200
df	2
Asymp. Sig.	.027

a. Kruskal Wallis Test

b. Grouping Variable:

Formula

Lampiran 11. *Certificate of Analysis* Ekstrak Etanol Daun Katuk 70%

PT EBM Saintifik dan Teknologi
 Jl. Bukit Raya 582, Ciumbuleuit, Cidapad, Bandung, Jawa Barat, Indonesia 40142
 Website: www.markherb.com
 Email: info@markherb.com

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PROOF OF SERVICE
22-03/PoS-MH/3

1. **Quotation** : 22-01/Q-MH/16
2. **Principal**
 - Customer name : Putri Rosanti
 - Institution/Address : Universitas Bhakti Kencana
 - Phone : +62 8132 2618 202
 - Email : 11181101@bku.ac.id
3. **Sample**
 - Sample name : Daun Katuk (*Sauropus androgynus*)
 - Package/Size : 660 g
 - Date of received : February 2022
 - Date of service : March 2022
 - Type of service : Extraction

Extraction result

Parameters	Description
Sample preparation	Dried, powdered, 660 g
Extraction methods	Maceration, room temperature, 2 x 24h, solid-solvent ratio (1:5, w/v)
Solvent	Ethanol 70%
Solvent drying	Vacuum rotary evaporator
Yield	55.13 g
Extract appearance	Dark Green, sticky
Storage	4 to 8°C

Ethical statement

*This proof of service declares that the customer is not allowed to claim the product or method as his/her own work/research.
 On the contrary, the customer should mention that the product and service were provided by Markherb.*

Bandung, 18 March 2022

apt. Nanda Putra, M.S.Farm.
 Service Manager

QC :
 Date : 18/3/22

QA :
 Date : 18/3/22

Lampiran 12. *Certificate of Analysis* Ekstrak Etanol Rimpang Kunyit 96%



PT EBM Saintifik dan Teknologi
 Jl. Bukit Raya 582, Ciumbuleuit, Cidadak, Bandung, Jawa Barat, Indonesia 40142
 Website: www.markherb.com
 Email: info@markherb.com

For Laboratory Use Only

PROOF OF SERVICE
22-03/PoS-MH/2

1. Quotation : 22-01/Q-MH/16

2. Principal

Customer name : Putri Rosanti
 Institution/Address : Universitas Bhakti Kencana
 Phone : +62 8132 2618 202
 Email : 11181101@bku.ac.id

3. Sample

Sample name : Rimpang Kunyit (*Curcuma longa* L.)
 Package/Size : 990 g
 Date of received : February 2022
 Date of service : March 2022
 Type of service : Extraction

Extraction result

Parameters	Description
Sample preparation	Dried, powdered, 990 g
Extraction methods	Maceration, room temperature, 2 x 24h, solid-solvent ratio (1:5, w/v)
Solvent	Ethanol 96%
Solvent drying	Vacuum rotary evaporator
Yield	78.70 g
Extract appearance	Yellow, sticky
Storage	4 to 8°C

Ethical statement

*This proof of service declares that the customer is not allowed to claim the product or method as his/her own work/research.
 On the contrary, the customer should mention that the product and service were provided by Markherb.*

Bandung, 18 March 2022



apt. Nanda Putra, M.S.Farm.
 Service Manager

QC : 

Date : 18/3/22

QA : 

Date : 18/3/22

Lampiran 13. *Certificate of Analysis* Etil Selulosa

HONEST

SHANGHAI HONEST CHEM CO.,LTD
 ROOM 204, No.889 YISHAN ROAD, SHANGHAI, 200233, CHINA
 Tel: (0086-21)54012006 / 54012007, Fax: (0086-21)54012008

Certificate of Analysis

Product name:	Ethyl Cellulose (EC)
Grade: N-100	Batch No.: 20210202
CAS No.: 9004-57-3	Quantity: 3000 kg
Manufacturing Date: 2021.02.02	Exp. Date: 2024.03.01
Report date: 2021.02.03	Shelf life: 3 years

Items	Standard	Result
Appearance	White powder	White powder
Ethoxy Content, %	47.5-49.5	49.2
Viscosity, mpa.s	100-120	110
Loss on drying, %	3.0 Max	0.6
Residue on Ignition, %	0.3 Max	0.1
Conclusion:	Passed	

Signature : Wang Qian 王倩 QA Manager Liu Lin 刘凌

Lampiran 14. Certificate of Analysis Aseton



Certificate of Analysis

1.00014.2500 Acetone for analysis EMSURE® ACS,ISO,Reag. Ph Eur
Batch K47991714

Batch Values		
Assay (GC)	99.9	%
Identity (IR)	conforms	
Identity B (Ph Eur)	conforms	
Identity C (Ph Eur)	conforms	
Appearance of solution	conforms	
Solubility in water	conforms	
Water-insoluble substances	conforms	
Colour	≤ 10	Hazen
Density (d 20 °C/20 °C)	0.791	
Acidity or alkalinity	conforms	
Titration acid	≤ 0.0002	meq/g
Titration base	≤ 0.0002	meq/g
Related substances (GC) (Methanol (Impurity A))	0.03	%
Related substances (GC) (2-Propanol (Impurity B))	< 0.01	%
Related substances (GC) (Benzene (Impurity C))	< 1	ppm
Related substances (GC) (other impurity)	< 0.05	%
Cyclohexane (residual solvent) (GC)	< 0.01	%
Diacetone (GC)	< 0.01	%
Ethanol (GC)	≤ 0.01	%
Aldehydes (as formaldehyde)	≤ 0.001	%
Substances reducing potassium permanganate (as O)	≤ 0.00025	%
Reducing substances	conforms	
Chloride (Cl)	≤ 100	ppb
Nitrate (NO ₃)	≤ 100	ppb
Phosphate (PO ₄)	≤ 100	ppb
Sulphate (SO ₄)	≤ 100	ppb
Ag (Silver)	≤ 0.000002	%
Al (Aluminium)	≤ 0.00005	%
As (Arsenic)	≤ 0.000002	%
Au (Gold)	≤ 0.000002	%
B (Boron)	≤ 0.000002	%
Ba (Barium)	≤ 0.00001	%
Be (Beryllium)	≤ 0.000002	%
Bi (Bismuth)	≤ 0.000002	%
Ca (Calcium)	≤ 0.00005	%
Cd (Cadmium)	≤ 0.000005	%
Co (Cobalt)	≤ 0.000002	%
Cr (Chromium)	≤ 0.000002	%

Merck KGaA, Frankfurter Straße 250, 64293 Darmstadt (Germany): +49 6151 72-0
EMD Millipore Corporation - a subsidiary of Merck KGaA, Darmstadt, Germany
400 Summit Drive, Burlington, MA 01803, USA, Phone +1 (781) 533-6000

Page 1 of 2

Lampiran 15. *Certificate of Analysis* Quercetin Standar

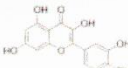


3050 Spruce Street, Saint Louis, MO 63103, USA
 Website: www.sigmaaldrich.com
 Email USA: techserv@sial.com
 Outside USA: eurtechserv@sial.com

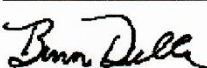
Certificate of Analysis

Product Name:
Quercetin – ≥95% (HPLC), solid

Product Number: **Q4951**
 Batch Number: **SLCJ0103**
 Brand: **SIGMA**
 CAS Number: **117-39-5**
 Formula: **C15H10O7**
 Formula Weight: **302.24 g/mol**
 Quality Release Date: **10 DEC 2020**



Test	Specification	Result
Appearance (Color) Yellow	Conforms	Conforms
Appearance (Form)	Powder	Powder
¹ H NMR Spectrum	Conforms to Structure	Conforms
Loss on Drying	≤ 4 %	3 %
Purity (HPLC)	≥ 95 %	97 %



Brian Dulle, Supervisor
 Quality Assurance
 St. Louis, Missouri US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Version Number: 1
Page 1 of 1

Lampiran 16. *Certificate of Analysis* Ethanol Absolute PA



Certificate of Analysis

1.00983.2500 Ethanol absolute for analysis EMSURE® ACS,ISO,Reag. Ph Eur
Batch 11157183

	Spec. Values		Batch Values	
Purity (GC)	≥ 99.9	%	99.9	%
Identity (IR)	conforms		conforms	
Appearance	conforms		conforms	
Color	≤ 10	Hazen	< 5	Hazen
Solubility in water	conforms		conforms	
Acidity or alkalinity	≤ 30	ppm	≤ 30	ppm
Titration acid	≤ 0.0002	meq/g	0.0001	meq/g
Titration base	≤ 0.0002	meq/g	< 0.0002	meq/g
Density (d 20 °C/20 °C)	0.790 - 0.793		0.791	
UV absorption	conforms		conforms	
Aldehydes (as Acetaldehyd)	≤ 0.001	%	≤ 0.001	%
Fusel oils	conforms		conforms	
Substances reducing potassium permanganate (as O)	≤ 0.0002	%	≤ 0.0002	%
Substances reducing permanganate (ACS)	conforms		conforms	
Carbonyl compounds (as CO)	≤ 0.003	%	≤ 0.003	%
Readily carbonizable substances	conforms		conforms	
Acetone, Isopropyl Alcohol (ACS)	conforms		conforms	
Acetone (GC)	≤ 0.001	%	< 0.001	%
Ethylmethylketone (GC)	≤ 0.02	%	< 0.01	%
Isoamyl alcohol (GC)	≤ 0.05	%	< 0.01	%
2-Propanol (GC)	≤ 0.01	%	< 0.01	%
Higher alcohols (GC)	≤ 0.01	%	< 0.01	%
Volatile impurities (GC) (Acetaldehyde and Acetal)	≤ 10	ppm	< 10	ppm
Volatile impurities (GC) (Benzene)	≤ 2	ppm	< 1	ppm
Volatile impurities (GC) (Methanol)	≤ 100	ppm	< 50	ppm
Volatile impurities (GC) (Total of other impurities)	≤ 300	ppm	< 100	ppm
Volatile impurities (GC) (disregard limit)	≤ 9	ppm	9	ppm
Chloride (Cl)	≤ 0.3	ppm	< 0.1	ppm
Nitrate (NO ₃)	≤ 0.3	ppm	< 0.1	ppm
Phosphate (PO ₄)	≤ 0.3	ppm	< 0.1	ppm
Sulfate (SO ₄)	≤ 0.3	ppm	< 0.1	ppm
Ag (Silver)	≤ 0.000002	%	≤ 0.000002	%
Al (Aluminium)	≤ 0.00005	%	≤ 0.00005	%
As (Arsenic)	≤ 0.000002	%	≤ 0.000002	%
Au (Gold)	≤ 0.000002	%	≤ 0.000002	%
Ba (Barium)	≤ 0.00001	%	≤ 0.00001	%
Be (Beryllium)	≤ 0.000002	%	≤ 0.000002	%
Bi (Bismuth)	≤ 0.000002	%	≤ 0.000002	%
Ca (Calcium)	≤ 0.00005	%	≤ 0.00005	%

Merck KGaA, Frankfurter Straße 250, 64293 Darmstadt (Germany): +49 6151 72-0
EMD Millipore Corporation - a subsidiary of Merck KGaA, Darmstadt, Germany
400 Summit Drive, Burlington, MA 01803, USA, Phone +1 (781) 533-6000

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Lampiran 17. Dokumentasi Penelitian



Lampiran 18. Hasil Cek Turnitin Mandiri

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Lampiran 19.

Surat Pernyataan Bebas Plagiasi

SURAT PERNYATAAN

Yang bertanda tangan di bawah ini,

Nama : Putri Rosanti

N P M : 11181131

adalah mahasiswa Fakultas Farmasi, Universitas Bhakti Kencana, menyatakan dengan sesungguhnya bahwa Naskah Tugas Akhir/Skripsi yang saya tulis dengan judul:

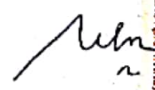
**FORMULASI MIKROKAPSUL DARI KOMBINASI EKSTRAK DAUN KATUK
(*Sauropus androgynus L. Merr*) DAN RIMPANG KUNYIT (*Curcuma longa L.*)
DENGAN METODE PENGUAPAN PELARUT**

adalah benar-benar merupakan hasil karya saya sendiri. Apabila di kemudian hari diketahui bahwa isi Naskah Skripsi ini merupakan hasil plagiasi, maka saya bersedia menerima sanksi berupa pembatalan kelulusan dan atau pencabutan gelar yang saya peroleh.

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Bandung, 7 Agustus 2022

Yang membuat pernyataan,




(Putri Rosanti)

11181131

Lampiran 20.

Surat Persetujuan untuk dipublikasikan di media online

SURAT PERNYATAAN

Yang bertanda tangan di bawah ini,

Nama : Putri Rosanti

N P M : 11181131

Menyatakan bahwa demi kepentingan perkembangan ilmu pengetahuan,
saya menyetujui abstrak Skripsi yang saya tulis dengan judul:

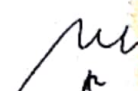
**FORMULASI MIKROKAPSUL DARI KOMBINASI EKSTRAK DAUN KATUK
(*Sauropus androgynus* L. Merr) DAN RIMPANG KUNYIT (*Curcuma longa* L.)
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NPM 11181131