

Lampiran 1. Perhitungan masing – masing konsentrasi jamu yang di *spike*.

a. Konsentrasi 1 %

$$\frac{\text{konsentrasi standar spike}}{\text{jumlah standar parasetamol}} \times (\text{standar parasetamol} + \text{KBr})$$

Standar Parasetamol yang ditimbang:

$$\begin{aligned} &= \frac{1}{50} \times 1000 \text{ mg (950 KBr : 50 parasetamol)} \\ &= 20 \text{ mg} \end{aligned}$$

$$\text{konsentrasi jamu – konsentrasi standar spike}$$

Jamu yang ditimbang:

$$\begin{aligned} &= 100 \text{ mg} - 1 \text{ mg} \\ &= 99 \text{ mg} \end{aligned}$$

b. Konsentrasi 5 %

Standar Parasetamol yang ditimbang:

$$\begin{aligned} &= \frac{5}{50} \times 1000 \text{ mg (950 KBr : 50 parasetamol)} \\ &= 100 \text{ mg} \end{aligned}$$

Jamu yang ditimbang:

$$\begin{aligned} &= 100 \text{ mg} - 5 \text{ mg} \\ &= 95 \text{ mg} \end{aligned}$$

Pada penimbangan konsentrasi 1% dan 5% diperlukan campuran Parasetamol dengan KBr, hal ini disebabkan karena kapasitas dari timbangan analitik memiliki batas rendahnya adalah 10 mg. Campuran Parasetamol dengan KBr dibuat dengan volume berat total 1000 mg, dengan komposisi 950 mg KBr dan 50 mg Parasetamol.

c. Konsentrasi 10 %

Standar Parasetamol yang ditimbang:

$$\begin{aligned} &= \frac{10}{100} \times 100 \text{ mg} \\ &= 10 \text{ mg} \end{aligned}$$

Jamu yang ditimbang:

$$\begin{aligned} &= 100 \text{ mg} - 10 \text{ mg} \\ &= 90 \text{ mg} \end{aligned}$$

- d. Konsentrasi 15 %
Standar Parasetamol yang ditimbang:

$$= \frac{15}{100} \times 100 \text{ mg}$$
$$= 15 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 15 \text{ mg}$$
$$= 85 \text{ mg}$$

- e. Konsentrasi 20 %
Standar Parasetamol yang ditimbang:

$$= \frac{20}{100} \times 100 \text{ mg}$$
$$= 20 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 20 \text{ mg}$$
$$= 80 \text{ mg}$$

- f. Konsentrasi 25 %
Standar Parasetamol yang ditimbang:

$$= \frac{25}{100} \times 100 \text{ mg}$$
$$= 25 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 25 \text{ mg}$$
$$= 75 \text{ mg}$$

- g. Konsentrasi 40 %
Standar Parasetamol yang ditimbang:

$$= \frac{40}{100} \times 100 \text{ mg}$$
$$= 40 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 40 \text{ mg}$$
$$= 60 \text{ mg}$$

- h. Konsentrasi 45 %
Standar Parasetamol yang ditimbang:

$$= \frac{45}{100} \times 100 \text{ mg}$$

$$= 45 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 45 \text{ mg}$$

$$= 55 \text{ mg}$$

i. Konsentrasi 80 %

Standar Parasetamol yang ditimbang:

$$= \frac{80}{100} \times 100 \text{ mg}$$

$$= 80 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 80 \text{ mg}$$

$$= 20 \text{ mg}$$

j. Konsentrasi 85 %

Standar Parasetamol yang ditimbang:

$$= \frac{85}{100} \times 100 \text{ mg}$$

$$= 85 \text{ mg}$$

Jamu yang ditimbang:

$$= 100 \text{ mg} - 85 \text{ mg}$$

$$= 15 \text{ mg}$$



Lampiran 2. Konsentrasi dan komposisi sampel analisis

Jamu	Konsentrasi Spike Parasetamol	Bobot Campuran Parasetamol + KBr (mg)	Bobot Parasetamol (mg)	Bobot Jamu (mg)
Sidomuncul	1%	20	-	99
Jamu Leo	5%	100	-	95
Linuric	10%	-	10	90
Sidomuncul	15%	-	15	85
Jamu Leo	20%	-	20	80
Linuric	25%	-	25	75
Sidomuncul	40%	-	40	60
Jamu Leo	45%	-	45	55
Linuric	80%	-	80	20
Sidomuncul	85%	-	85	15

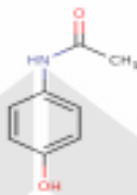


Lampiran 3. Sertifikat kemurnian standar Parasetamol



Certificate of Analysis

PARACETAMOL IP
CERTIFIED REFERENCE MATERIAL
(SECONDARY REFERENCE STANDARD)



4-hydroxyacetanilide

CERTIFIED PURITY: 99.4%
(Assay on as is basis)

NOMINAL PACKAGE SIZE: 2g

CATALOG #: 1000001

Lot #: PADM001

ISSUE DATE: 28 August 2015

CAS #: 103-90-2

Note: Certificates may be updated due to Pharmacopelial Lot change or the availability of new data. Check our website www.padmlab.com for the most current version.

CRM EXPIRATION: 12 Months from issue date (Proper Storage and Handling Required).

RECEIPT DATE: _____

Note: This space is provided for convenience only and its use is not required.

STORAGE: Store Protected from light and moisture.

CHEMICAL FORMULA: C₈H₉NO₂

Molecular weight: 151.17

PHYSICAL DESCRIPTION: white powder in amber vial

THERAPEUTIC CATEGORY: Analgesic, Antipyretic.

DATE OF COA: 28.08.2015

HAZARDS: Read Safety data sheet before using. All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel.

PADM Laboratories Pvt. Ltd.

#453/A, 12th cross, 4th Phase, Peenya Industrial Area, Bangalore-560058, Karnataka, INDIA

E-mail : info@padmlab.com www.padmlab.com



INSTRUCTIONS FOR USE: Do not dry, use as is. The internal pressure of container may be slightly different from the atmospheric pressure at the user's location. Open slowly and carefully to avoid dispersion of the material. This material is intended for R&D use only. Not for drug, household or other uses.

TRACEABILITY ASSAY

Comparative assay demonstrates direct traceability to Pharmacopeial Standards specification: 99.0-101.0% (dried), Indian Pharmacopeia (IP).

METHOD: POTENTIOMETRIC TITRATION

Dissolve in water and 1M sulphuric acid. Titrate with 0.1M ceric ammonium sulphate, determining the end point potentiometrically.

Ref.: Paracetamol; IP

ASSAY vs. IP REFERENCE STANDARD (as is basis)

ASSAY VALUE

99.4%

vs. I.P.LOT

IPRS/54/14

Labeled Content = 99.5% w/w on as is basis

LOSS ON DRYING/VOLATILES

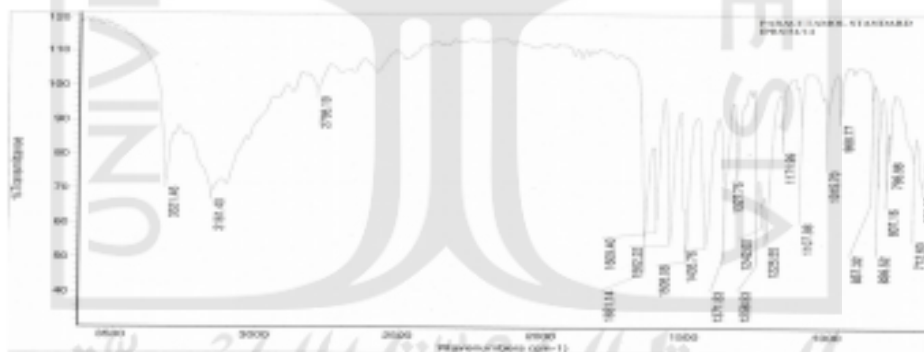
Method: Dry in an oven.

Mean of two measurements, Loss = 0.13%

IDENTIFICATION TESTS

INFRARED SPECTROPHOTOMETRY (Comparative identification analysis demonstrates direct traceability to Pharmacopeial standards)

Representative IR spectrum from Lot: IPRS/54/14 Analysis.



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Lampiran 4. Sertifikat kalibrasi timbangan analitik



UNIVERSITAS GADJAH MADA
LABORATORIUM PENELITIAN DAN PENGUJIAN TERPADU



RDP /5.10.1/K/LPPT
Rev 1
Halaman 1 dari 2

LAPORAN HASIL KALIBRASI
CALIBRATION REPORT

Nomor / Number : 314C/LPPT- UGM/KII/2018

IDENTITAS ALAT
Instrument Identification

Nama : Timbangan Elektronik
Name
Merek / Pabrik : Mettler Toledo / -
Manufacture
Tipe/Nomor Seri : XS - 205 DU / B022038779
Type serial Number
Lain-lain : Kapasitas alat 220 g, Resolusi : 0,0001 g
Others

IDENTITAS PEMILIK
Owner Identification

Nama : Laboratorium Pengujian Obat, Makanan dan Kosmetik
Destination
Nomor /tanggal penerimaan : 17110300314C / 22 - 11 - 2017
Order number/date of acceptance
Alamat : Program Studi Farmasi, FMIPA, Universitas Islam Indonesia
Address

Laporan hasil kalibrasi ini hanya dapat diperbanyak/dikopi secara utuh



Nama Alat /Merk/Tipe/Serial : Timbangan Elektronik / Mettler Toledo / XS – 205 DU / B022038779
Nomor / Tanggal Penerimaan : 17110300314C / 22 – 11 - 2017
Tanggal Kalibrasi /Tempat : 14– 12 - 2017 / LPOMK UII
Kondisi lingkungan : Suhu ruangan : (26,5 ± 0,1) °C dan Kelembaban: (69 ± 2)% RH

HASIL KALIBRASI

Result of Calibration

Nomor/Number : 314C/LPPT-UGM/K/I/2018

1. KEMAMPUAN BACA KEMBALI

Kapasitas (g)	Standar Deviasi Pembacaan (g)	Perbedaan maksimum antara pembacaan berikut (g)
Setengah = 100	0,0000	0,0000
Penuh = 200	0,0000	0,0000

2. PENYIMPANGAN DARI NILAI NOMINAL

Massa Nominal (g)	Pembacaan Nominal (g)	Koreksi (g)	Ketidakpastian (mg)
1	1,0000	0,0000	± 0,15
2	2,0000	0,0000	± 0,61
5	5,0000	0,0000	± 0,61
10	10,0000	0,0000	± 0,61
20	20,0000	-0,0001	± 0,61
30	29,9999	0,0000	± 0,61
50	49,9999	0,0000	± 0,61
70	69,9998	0,0000	± 0,61
80	79,9997	0,0001	± 0,61
100	99,9998	0,0001	± 0,61
120	119,9997	0,0001	± 0,61
150	149,9996	0,0001	± 0,61
200	199,9999	-0,0003	± 0,61

3. EFEK EKSENTRISITAS

Sebuah beban bermassa 50 g ditimbang pada pusat pan dengan berbagai posisi seperti tertera di bawah ini sejauh kira-kira 1,5 cm dari pusat pan dan selisihnya terhadap posisi tengah adalah :

Posisi	Tengah	Depan	Belakang	Kiri	Kanan
Pembacaan (g)	0,0000	-0,0002	0,0001	-0,0003	0,0002

4. BATAS UNJUK KERJA TIMBANGAN = 0,0006 g

5. HISTERISIS = 0,0000 g

Ketidakpastian penimbangan tersebut diukur pada tingkat kepercayaan 95% dengan faktor cakupan (k) = 2

Catatan :

Standar Kalibrasi : Anak timbangan Denver Instrument Kelas E2

Kelertelusuran : Tertelusur ke satuan SI melalui laboratorium terkalibrasi LK-045-IDN

Prosedur Kalibrasi : IKK/5,4/TE-01 (Csiro-10)

Yogyakarta, 17 Januari 2018

Pejabat Penandatangan Sertifikat,

Yusuf Umardani, S.T., M.Eng

Lampiran 5. Kromatogram KLT- Densitometri hasil analisis kualitatif

winCATS Planar Chromatography Manager

Lab Biologi Farmasi
Universitas Islam Indonesia
Yogyakarta

Analysis Report

Method C:\m.lutfian.cme
Created by Administrator 19 Nopember 2018 16:04:29
Last modified by Administrator 19 Nopember 2018 16:10:46
SOP document Administrator
Validated Design
Description :

Analysis D:\m.cna
Created/used by Administrator 07 Februari 2019 11:36:19
Current user Administrator

Stationary phase

Executed by Administrator 07 Februari 2019 11:36:19
Plate size (X x Y) 20.0 x 10.0 cm
Material HPTLC plates silica gel 60 F 254
Manufacturer E. MERCK KGaA
Batch
GLP code
Pre-washing Yes
Mode
Solvent name kloroform : metanol : Amoniak (80 : 17 : 3)
Manufacturer E. MERCK KGaA
Batch
Drying device Air
Temperature 27
Time 20 Minutes
Modification No

Definitions - Quantification

Executed by Administrator 19 Nopember 2018 16:12:54

Calibration parameters

Calibration mode Single level
Statistics mode CV
Evaluation mode Peak height

Samples

Sample ID: parasetamol
Sample ID: sidomuncul
Sample ID: jago
Sample ID: air mancur
Sample ID: leo
Sample ID: gujati 59
Sample ID: linuric
Sample ID: pt payung pusaka mandiri
Sample ID: fenilbutazol
Sample ID: mda
Sample ID: jaya asli
Sample ID: tawon
Sample ID: pro urat
Sample ID: uratan
Sample ID: basmurat
Sample ID: nosrat

User : Administrator
07 Februari 2019 11:36:41

Approved :
Report ID : 07E30207050B2413

SN 1610W002, V1.4.4
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Sample ID: wangton

Substance name	Rf	Window size	Deviation	Purity	Manufacturer	Batch number	Expiry date	Product number
Substance 1	0.17	0.5 mm	10.0 %	1.0000				
Substance 2	0.19	0.5 mm	10.0 %	1.0000				
Substance 3	0.25	0.5 mm	10.0 %	1.0000				
Substance 4	0.29	0.5 mm	10.0 %	1.0000				
Substance 5	0.31	0.5 mm	10.0 %	1.0000				
Substance 6	0.40	8.1 mm	10.0 %	1.0000				
Substance 7	0.62	2.2 mm	10.0 %	1.0000				
Substance 8	0.62	2.2 mm	10.0 %	1.0000				
Substance 9	0.71	0.5 mm	10.0 %	1.0000				
Substance 10	0.75	3.3 mm	10.0 %	1.0000				
AutoGenerated16	0.76	0.5 mm	10.0 %	1.0000				

Standards Concentration	Standard level1	Dilution from 1.000 mL	Dilution to 1.000 mL	Application vol 2.000 µl
	Substance	Concentration		
	Substance 1	0.0100 mg/L		
	Substance 2	0.0100 mg/L		
	Substance 3	0.0100 mg/L		
	Substance 4	0.0100 mg/L		
	Substance 5	0.0100 mg/L		
	Substance 6	0.0100 mg/L		
	Substance 7	0.0100 mg/L		
	Substance 8	0.0100 mg/L		
	Substance 9	0.0100 mg/L		
	Substance 10	0.0100 mg/L		

Detection - CAMAG TLC Scanner 3

Information

Application position 15.0 mm
Solvent front position 90.0 mm

Instrument

CAMAG TLC Scanner 3 "Scanner3_100914" S/N 100914 (1.14.28)
Executed by Administrator 07 Februari 2019 11:36:19
Number of tracks 17
Position of first track X 10.0 mm
Distance between tracks 10.0 mm
Scan start pos. Y 15.0 mm
Scan end pos. Y 90.0 mm
Slit dimensions 6.00 x 0.45 mm, Micro
Optimize optical system Light
Scanning speed: 20 mm/s
Data resolution: 100 µm/step

Measurement Table

Wavelength 254
Lamp D2 & W
Measurement Type Remission
Measurement Mode Absorption
Optical filter Second order
Detector mode Automatic
PM high voltage 371 V

Detector properties

Y-position for 0 adjust 15.0 mm
Track # for 0 adjust 0
Analog Offset 10%
Sensitivity Automatic (22)

User : Administrator
07 Februari 2019 11:36:41

Approved :
Report ID : 07E30207050B2413

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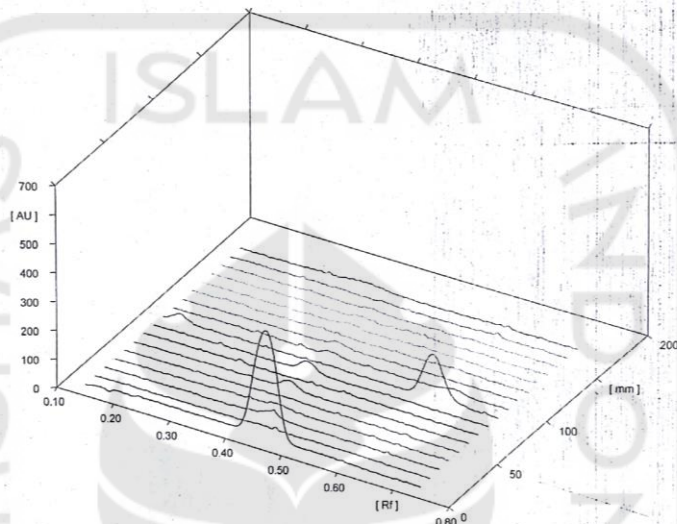
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Integration

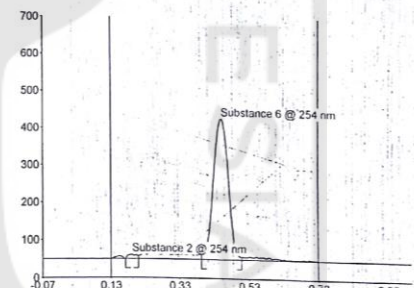
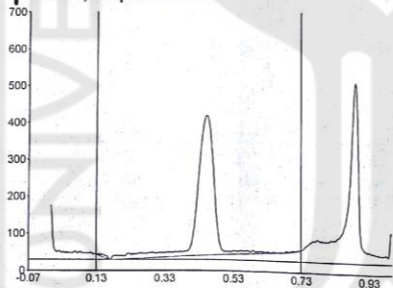
Properties

Data filtering	Savitsky-Golay 7
Baseline correction	Lowest Slope
Peak threshold min. slope	5
Peak threshold min. height	10 AU
Peak threshold min. area	50
Peak threshold max. height	990 AU
Track start position	25.0 mm
Track end position	70.1 mm
Display scaling	Automatic

All tracks at Wavelength



Track 1, ID: parasetamol



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.18	0.4	0.19	11.1	2.87	0.21	7.2	247.7	1.74	Substance 2
2	0.40	12.9	0.45	376.7	97.13	0.51	7.4	13975.0	98.26	Substance 6

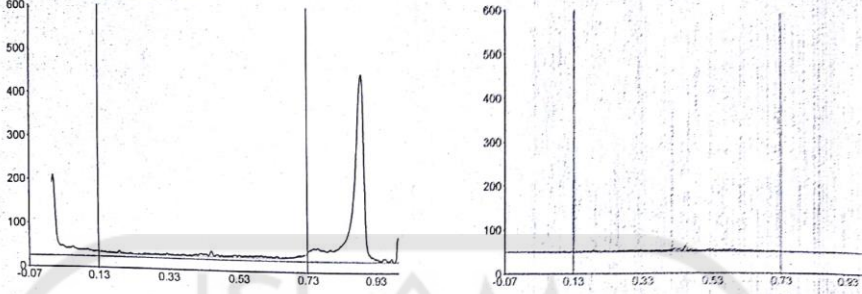
User : Administrator
07 Februari 2019 11:36:41

Approved :
Report ID : 07E30207050B2413

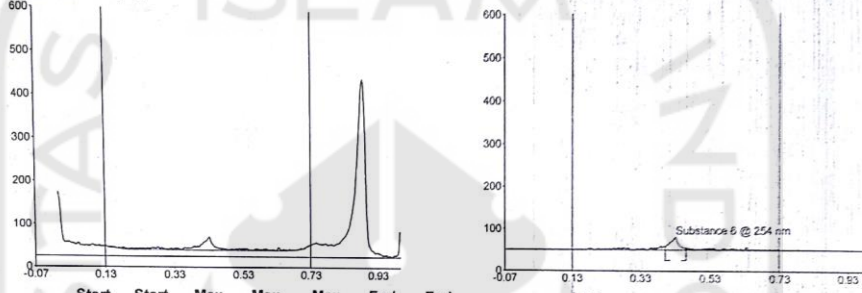
SN 1610W002, V1.4.4
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Track 2, ID: sidomuncul

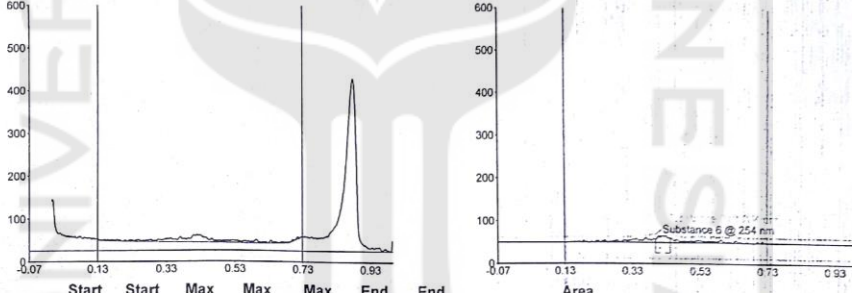


Track 3, ID: jago



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.41	7.1	0.43	30.3	100.00	0.47	4.0	670.5	100.00	Substance 6

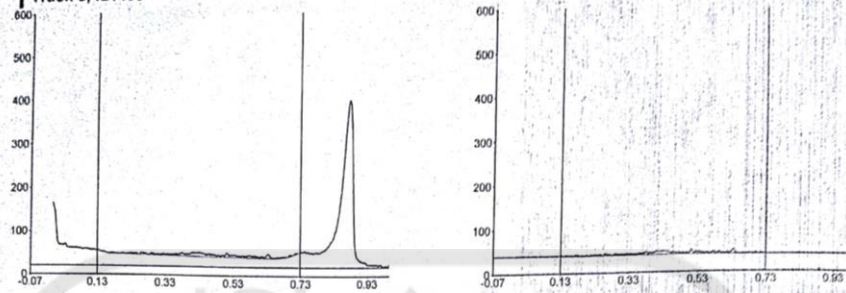
Track 4, ID: air mancur



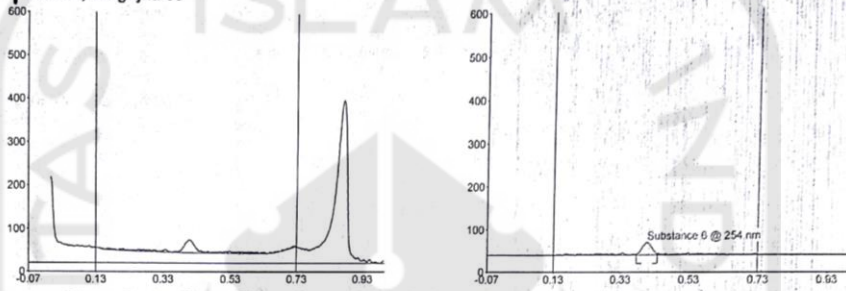
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.40	7.3	0.42	16.1	100.00	0.45	10.1	443.2	100.00	Substance 6

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Track 5, ID: leo

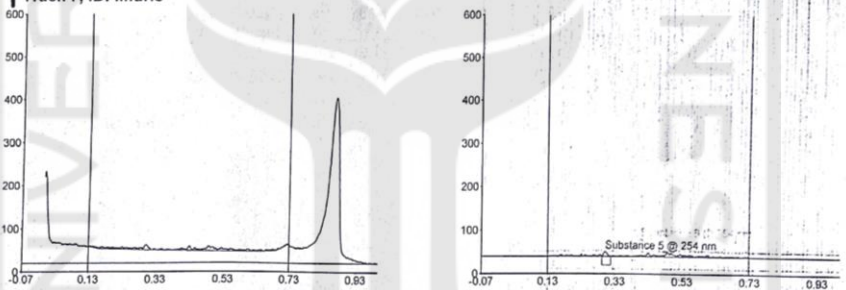


Track 6, ID: gujati 59



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.38	1.9	0.41	29.5	100.00	0.44	3.8	732.7	100.00	Substance 6

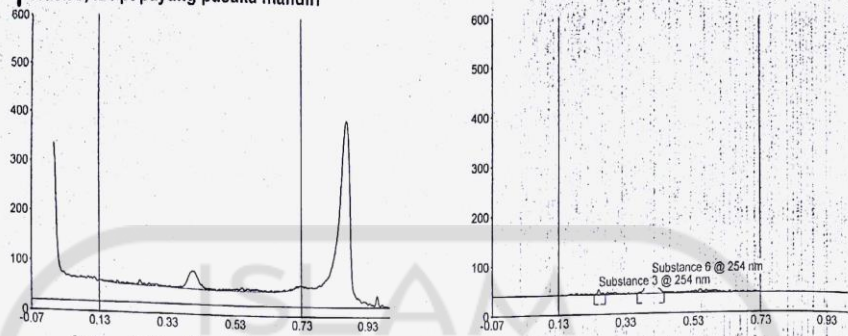
Track 7, ID: linuric



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.30	2.1	0.31	11.2	100.00	0.32	0.3	114.2	100.00	Substance 5

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Track 8, ID: pt payung pusaka mandiri



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.24	0.0	0.25	10.2	22.41	0.27	0.2	81.9	8.03	Substance 3
2	0.37	0.8	0.41	35.3	77.59	0.45	2.8	938.4	91.97	Substance 6



Lampiran 6. Sertifikat Kalibrasi *Fourier-transform infrared spectroscopy* (FTIR)




Instrument Performance Verification Test Certificate

Spectrum Two FT-IR Spectrometer
Instrument Performance Verification Test Certificate

Serial Number	C102963	Date Tested	04-02-2016
PARAMETER	SPECIFICATION	TEST RESULT	
Test Program Results			
Polystyrene Test	3082.18 ± 0.5 cm ⁻¹	3082.53 cm ⁻¹	
Record peaks at the specified Positions	3060.02 ± 0.5 cm ⁻¹	3059.97 cm ⁻¹	
	1601.34 ± 0.5 cm ⁻¹	1601.21 cm ⁻¹	
	1583.12 ± 0.5 cm ⁻¹	1583.36 cm ⁻¹	
	1028.34 ± 0.5 cm ⁻¹	1028.51 cm ⁻¹	

جامعة البلقاء التطبيقية
الدراسات والبحوث



Lampiran 7. Perhitungan model kalibrasi multivariat PLS (RMSEC)

No	Konsentrasi Parasetamol (% b/b)		x-y'	(x-y') ²
	Aktual (x)	Prediksi (y)		
1	0,05	0,067453	-0,017453	0,000304607
2	0,05	0,028255	0,021745	0,000472845
3	0,05	0,046649	0,003351	1,12292E-05
4	0,10	0,104012	-0,004012	1,60961E-05
5	0,10	0,112739	-0,012739	0,000162282
6	0,10	0,096403	0,003597	1,29384E-05
7	0,15	0,149117	0,000883	7,79689E-07
8	0,15	0,1369	0,0131	0,00017161
9	0,15	0,152408	-0,002408	5,79846E-06
10	0,20	0,200236	-0,000236	5,5696E-08
11	0,20	0,21455	-0,01455	0,000211702
12	0,20	0,21498	-0,01498	0,0002244
13	0,25	0,25561	-0,00561	3,14721E-05
14	0,25	0,245574	0,004426	1,95895E-05
15	0,25	0,230964	0,019036	0,000362369
16	0,40	0,396945	0,003055	9,33303E-06
17	0,40	0,413861	-0,013861	0,000192127
18	0,40	0,394813	0,005187	2,6905E-05
19	0,45	0,446791	0,003209	1,02977E-05
20	0,45	0,438812	0,011188	0,000125171
21	0,45	0,454736	-0,004736	2,24297E-05
22	0,80	0,793104	0,006896	4,75548E-05
23	0,80	0,798476	0,001524	2,32258E-06
24	0,80	0,805473	-0,005473	2,99537E-05
25	0,85	0,851175	-0,001175	1,38063E-06
26	0,85	0,837186	0,012814	0,000164199
27	0,85	0,862777	-0,012777	0,000163252
Total				0,002802702

Persamaan	
$y = 0,9986x + 0,0005$	
RMSEC	0,010188414
B	0,9986
A	0,0005
R ²	0,9986

Lampiran 8. Perhitungan validasi internal secara *leave one out* (RMSECV)

No	Konsentrasi Parasetamol (% b/b)		x-y'	(x-y') ²
	Aktual (x)	Prediksi (y)		
1	0,05	0,072832	-0,022832	0,0005213
2	0,05	0,025268	0,024732	0,000611672
3	0,05	0,045882	0,004118	1,69579E-05
4	0,10	0,105099	-0,005099	2,59998E-05
5	0,10	0,116205	-0,016205	0,000262602
6	0,10	0,095001	0,004999	2,499E-05
7	0,15	0,148707	0,001293	1,67185E-06
8	0,15	0,129072	0,020928	0,000437981
9	0,15	0,152788	-0,002788	7,77294E-06
10	0,20	0,200284	-0,000284	8,0656E-08
11	0,20	0,21568	-0,01568	0,000245862
12	0,20	0,216973	-0,016973	0,000288083
13	0,25	0,257019	-0,007019	4,92664E-05
14	0,25	0,244652	0,005348	2,86011E-05
15	0,25	0,227789	0,022211	0,000493329
16	0,40	0,396156	0,003844	1,47763E-05
17	0,40	0,417318	-0,017318	0,000299913
18	0,40	0,393714	0,006286	3,95138E-05
19	0,45	0,446325	0,003675	1,35056E-05
20	0,45	0,434744	0,015256	0,000232746
21	0,45	0,456332	-0,006332	4,00942E-05
22	0,80	0,785584	0,014416	0,000207821
23	0,80	0,797548	0,002452	6,0123E-06
24	0,80	0,810463	-0,010463	0,000109474
25	0,85	0,852309	-0,002309	5,33148E-06
26	0,85	0,818939	0,031061	0,000964786
27	0,85	0,87013	-0,02013	0,000405217
Total				0,00535536

Persamaan	
$y = 0,9956x + 0,001$	
RMSECV	0,01408356
B	0,9956
A	0,001
R ²	0,9974

Lampiran 9. Informasi sampel yang digunakan pada jalur kromatogram.

No.	Nama Sampel	Kandungan Sampel
1.	Pegal Linu herbal (Sidomuncul)	<i>Melaleuca Fructus</i> (merica bolong) 0.7g, <i>Retrofracti Fructus</i> (cabe jawa) 0.7g, <i>Zingiberis aromatica Rhizoma</i> (lempuyang) 0.7g, <i>Languatis Rhizoma</i> (laos) 0.84g, <i>Curcumae Rhizoma</i> (temulawak) 0.49g, <i>Baeckeae Folium</i> (jungrahap) 0.49g, <i>Kaempferiae Rhizoma</i> (kencur) 0.35g, <i>Blumeae Folium</i> (sembung) 0.35g, <i>Phyllanthi Herba</i> (meniran) 0.35g, <i>Cyperi Rhizoma</i> (teki) 0.35g, <i>Menthae arvensitis herba</i> (poko) 0.35g, <i>Foeniculli Fructus</i> (adas) 0.28g, <i>Alyxiae Cortex</i> (pulasari) 0.28g, <i>Usneae Thallus</i> (kayu angin) 0.28g, <i>Dioscoreae Tubera</i> (gadung) 0.14g.
2.	Pegal Linu (Jamu Leo)	<i>Curcumae Rhizoma</i> 1.20g, <i>Zingiberis zerumbeti Rhizoma</i> 0.66g, <i>Orthosiphonis Folium</i> 0.66g, <i>Blumeae Folium</i> 0.55g, <i>Equiseti Herba</i> 0.55g, <i>Baeckeae Folium</i> 0.55g, <i>Isorae Fructus</i> 0.39g, <i>Parkiae semen</i> 0.33g, <i>Zingiberis americans Rhizoma</i> 0.33g, <i>Retrofracti Fructus</i> 0.33g, <i>Myristicae pericarpium</i> 0.22g, <i>Melaleuca Folium</i> 0.16g, <i>Myristicae Semen</i> 0.16g, <i>Melaleuca Caulis</i> 0.11g.
3.	Pegal Linu (Linuric)	<i>Sonchi Folium</i> 0.7g, <i>Curcumae Rhizoma</i> 1.75g, <i>Piperis nigri Fructus</i> 0.35g, <i>Orthosiphonis Folium</i> 0.7g, <i>Syzigii Polyanthi Folium</i> 0.35g, <i>Languatis Rhizoma</i> 1.05g, <i>Zingiberis aromatica Rhizoma</i> 1.75g, <i>Retrofracti Fructus</i> 0.35g.

4.	Standar Parasetamol	Parasetamol
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No	Merk	Produsen	No. Registrasi
1.	Sidomuncul	PT. Industri Jamu	POM TR. 102 219 821
2.	Jamu Leo	PT. Leo Agung Raya	POM TR. 082 278 121
3.	Linuric	PT. Payung Pusaka Mandiri	POM TR. 043 230 271



Lampiran 10. *Output* minitab hasil kalibrasi multivariat PLS parasetamol dalam jamu pegal linu.

PLS Regression: kadar% versus 1562; 1504; 841; 557; 544; 521

Method

Cross-validation

None

Components to calculate Adjusted

Number of components calculated 6

Analysis of Variance for kadar%

Source	DF	SS	MS	F	P
Regression	6	2,06386	0,343977	2454,68	0,000
Residual Error	20	0,00280	0,000140		
Total	26	2,06667			

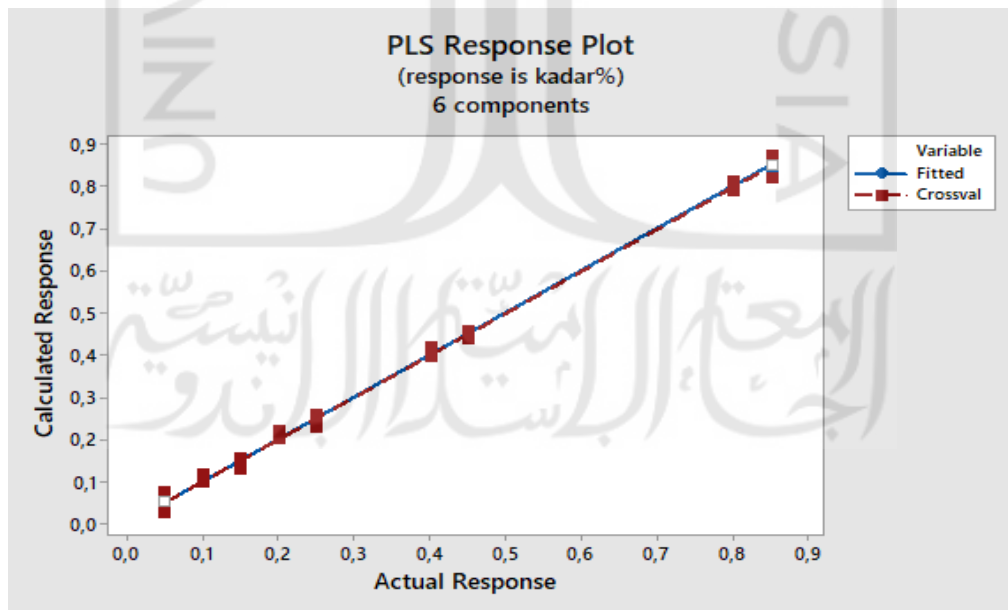
Model Selection and Validation for kadar%

Components	X Variance	Error	R-Sq
1	0,74745	0,0716434	0,965334
2	0,99682	0,0252869	0,987764
3	0,99862	0,0096179	0,995346
4	0,99970	0,0043929	0,997874
5	0,99989	0,0030083	0,998544
6	1,00000	0,0028026	0,998644

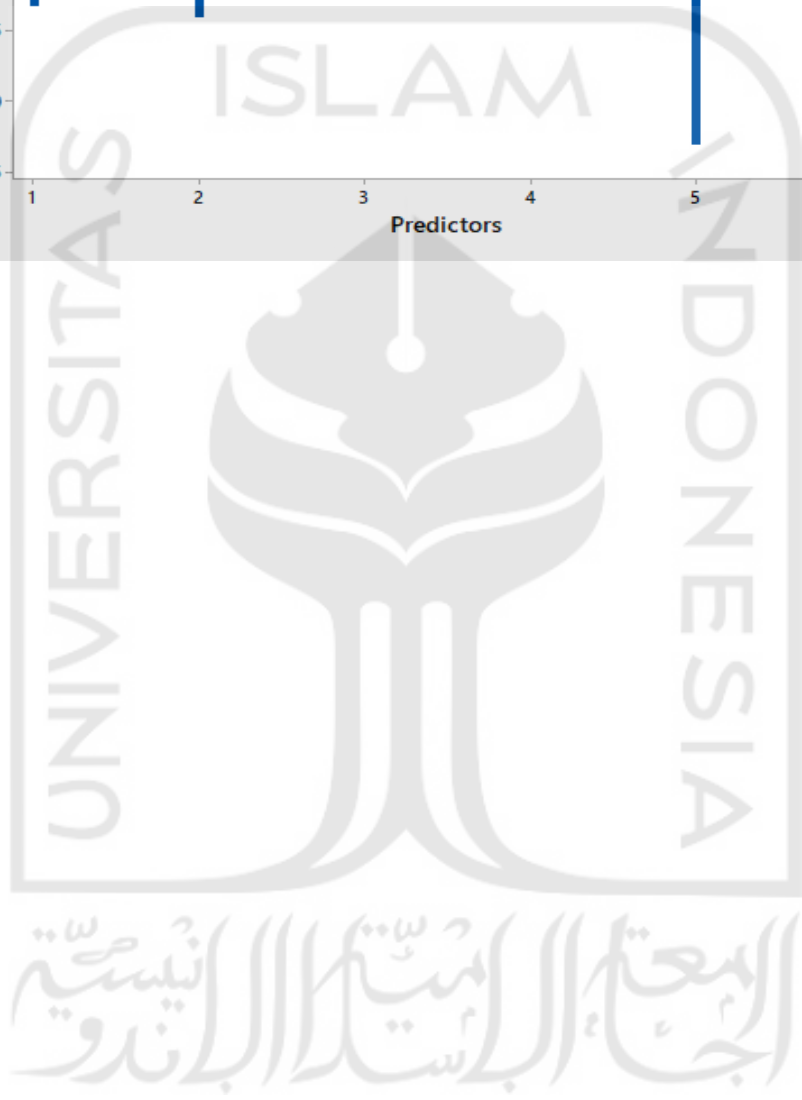
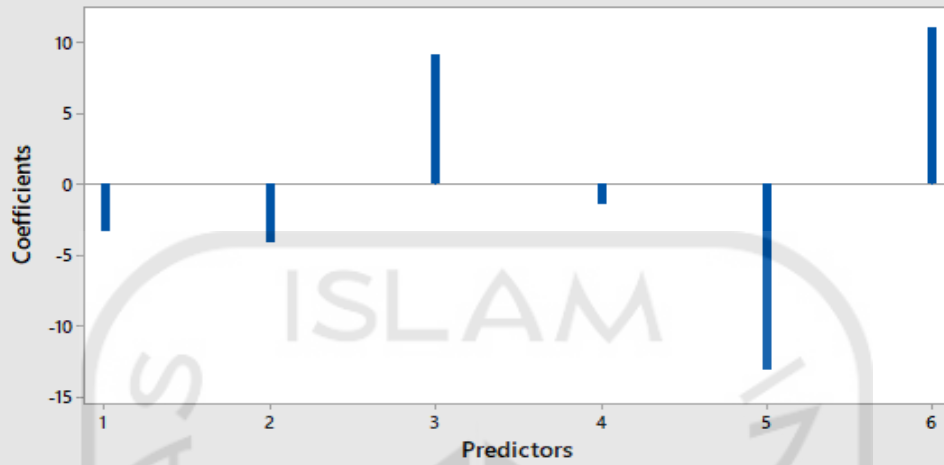
Fits and Residuals for kadar%

Row	kadar%	Fits	Res	SRes
1	0,05	0,067453	-0,0174527	-1,68629
2	0,05	0,028255	0,0217447	1,95901
3	0,05	0,046649	0,0033508	0,31379
4	0,10	0,104012	-0,0040118	-0,38206
5	0,10	0,112739	-0,0127394	-1,21375
6	0,10	0,096403	0,0035969	0,35821
7	0,15	0,149117	0,0008830	0,09025
8	0,15	0,136900	0,0130996	1,39870
9	0,15	0,152408	-0,0024079	-0,21888

10	0,20	0,200236	-0,0002355	-0,02185
11	0,20	0,214550	-0,0145497	-1,27594
12	0,20	0,214980	-0,0149799	-1,34700
13	0,25	0,255610	-0,0056100	-0,53010
14	0,25	0,245574	0,0044258	0,41100
15	0,25	0,230964	0,0190356	1,73700
16	0,40	0,396945	0,0030548	0,28949
17	0,40	0,413861	-0,0138606	-1,30881
18	0,40	0,394813	0,0051866	0,48236
19	0,45	0,446791	0,0032088	0,29008
20	0,45	0,438812	0,0111877	1,10363
21	0,45	0,454736	-0,0047357	-0,46258
22	0,80	0,793104	0,0068963	0,84229
23	0,80	0,798476	0,0015245	0,16332
24	0,80	0,805473	-0,0054732	-0,63926
25	0,85	0,851175	-0,0011753	-0,13915
26	0,85	0,837186	0,0128138	1,68531
27	0,85	0,862777	-0,0127772	-1,35479



PLS Coefficient Plot
(response is kadar%)
6 components



Lampiran 11. *Output* minitab hasil validasi internal dengan teknik validasi silang *leave-one-out*.

PLS Regression: kadar% versus 1562; 1504; 841; 557; 544; 521

Method

Cross-validation

Leave-one-out

Components to evaluate Adjusted
 Number of components evaluated 6
 Number of components selected 6

Analysis of Variance for kadar%

Source	DF	SS	MS	F	P
Regression	6	2,06386	0,343977	2454,68	0,000
Residual Error	20	0,00280	0,000140		
Total	26	2,06667			

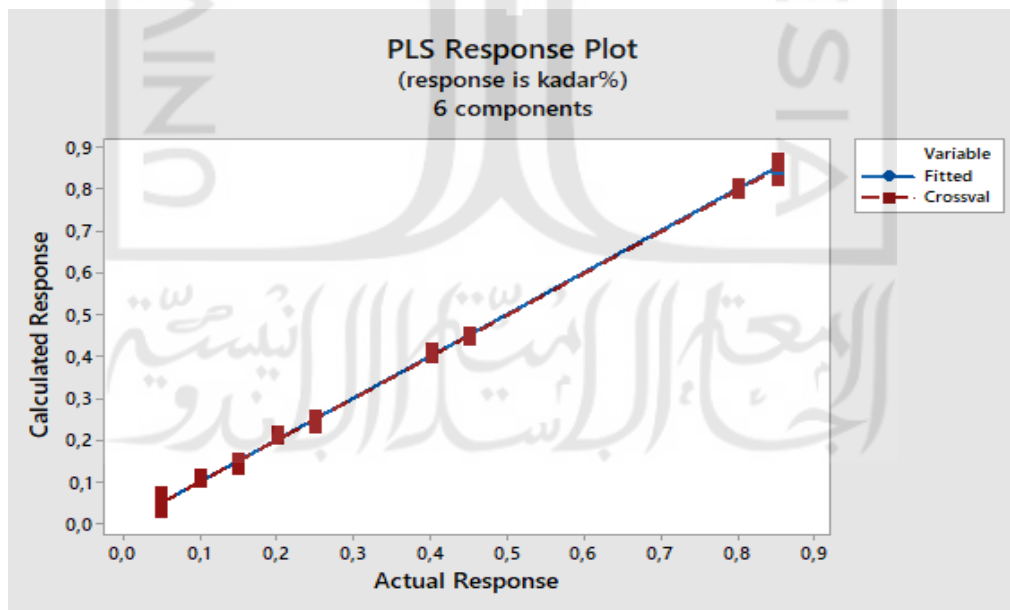
Model Selection and Validation for kadar%

Components	X Variance	Error	R-Sq	PRESS	R-Sq (pred)
1	0,74745	0,0716434	0,965334	0,0871921	0,957810
2	0,99682	0,0252869	0,987764	0,0346716	0,983223
3	0,99862	0,0096179	0,995346	0,0177198	0,991426
4	0,99970	0,0043929	0,997874	0,0074292	0,996405
5	0,99989	0,0030083	0,998544	0,0057060	0,997239
6	1,00000	0,0028026	0,998644	0,0053553	0,997409

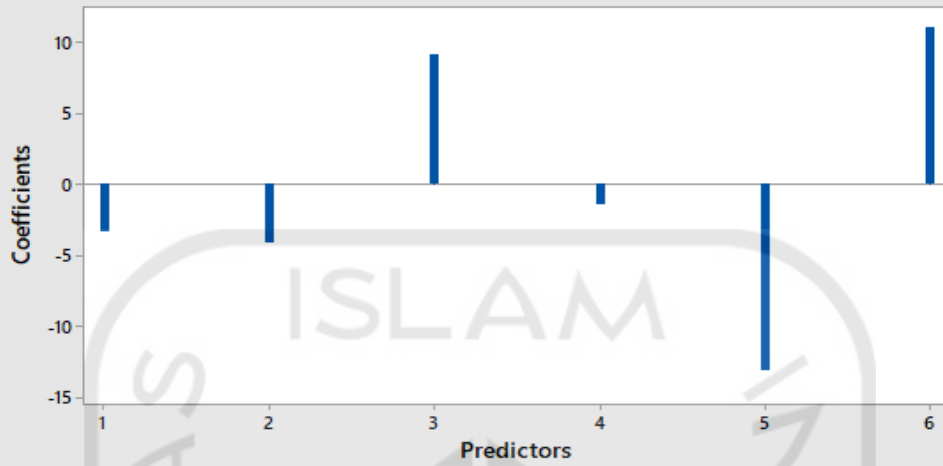
Fits and Residuals for kadar%

Row	kadar%	Fits	Res	SRes	Fits (pred)	Res (pred)
1	0,05	0,067453	-0,0174527	-1,68629	0,072832	-0,0228318
2	0,05	0,028255	0,0217447	1,95901	0,025268	0,0247317
3	0,05	0,046649	0,0033508	0,31379	0,045882	0,0041177
4	0,10	0,104012	-0,0040118	-0,38206	0,105099	-0,0050987
5	0,10	0,112739	-0,0127394	-1,21375	0,116205	-0,0162047
6	0,10	0,096403	0,0035969	0,35821	0,095001	0,0049990
7	0,15	0,149117	0,0008830	0,09025	0,148707	0,0012927
8	0,15	0,136900	0,0130996	1,39870	0,129072	0,0209279
9	0,15	0,152408	-0,0024079	-0,21888	0,152788	-0,0027880

10	0,20	0,200236	-0,0002355	-0,02185	0,200284	-0,0002841
11	0,20	0,214550	-0,0145497	-1,27594	0,215680	-0,0156797
12	0,20	0,214980	-0,0149799	-1,34700	0,216973	-0,0169731
13	0,25	0,255610	-0,0056100	-0,53010	0,257019	-0,0070194
14	0,25	0,245574	0,0044258	0,41100	0,244652	0,0053484
15	0,25	0,230964	0,0190356	1,73700	0,227789	0,0222110
16	0,40	0,396945	0,0030548	0,28949	0,396156	0,0038444
17	0,40	0,413861	-0,0138606	-1,30881	0,417318	-0,0173183
18	0,40	0,394813	0,0051866	0,48236	0,393714	0,0062864
19	0,45	0,446791	0,0032088	0,29008	0,446325	0,0036747
20	0,45	0,438812	0,0111877	1,10363	0,434744	0,0152560
21	0,45	0,454736	-0,0047357	-0,46258	0,456332	-0,0063317
22	0,80	0,793104	0,0068963	0,84229	0,785584	0,0144159
23	0,80	0,798476	0,0015245	0,16332	0,797548	0,0024520
24	0,80	0,805473	-0,0054732	-0,63926	0,810463	-0,0104630
25	0,85	0,851175	-0,0011753	-0,13915	0,852309	-0,0023086
26	0,85	0,837186	0,0128138	1,68531	0,818939	0,0310612
27	0,85	0,862777	-0,0127772	-1,35479	0,870130	-0,0201299



PLS Coefficient Plot
(response is kadar%)
6 components



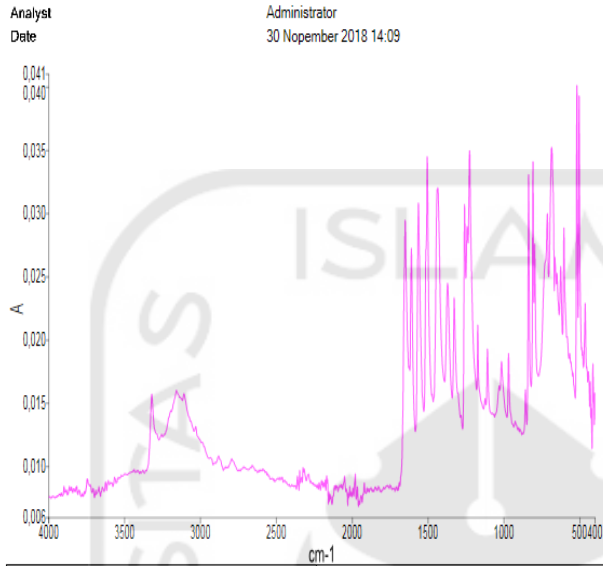
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Lampiran 12. Data 6 bilangan gelombang vs absorbansi yang dianalisis

Konsentrasi	1562	1504	841	557	544	521
5%	0,0435	0,0408	0,0538	0,1063	0,106	0,1196
5%	0,0542	0,0502	0,0642	0,1297	0,13	0,1461
5%	0,0495	0,0465	0,0597	0,1177	0,118	0,1327
10%	0,0584	0,0559	0,064	0,1274	0,1289	0,155
10%	0,0481	0,048	0,0563	0,1111	0,1129	0,1347
10%	0,0601	0,0593	0,0672	0,1326	0,1347	0,1611
15%	0,0667	0,0655	0,0718	0,1312	0,1298	0,1604
15%	0,0402	0,0395	0,0449	0,0832	0,083	0,1012
15%	0,0577	0,0578	0,0637	0,1171	0,1168	0,1443
20%	0,0887	0,0901	0,0793	0,1317	0,1298	0,175
20%	0,0728	0,0756	0,069	0,1151	0,1143	0,1537
20%	0,0605	0,0618	0,0567	0,0938	0,093	0,1266
25%	0,0709	0,0718	0,0603	0,0979	0,0978	0,1406
25%	0,0887	0,0928	0,0761	0,1227	0,1226	0,173
25%	0,0811	0,0829	0,0691	0,1125	0,1123	0,1577
40%	0,1147	0,1218	0,0847	0,1091	0,1057	0,1766
40%	0,1209	0,1314	0,091	0,1171	0,1137	0,1891
40%	0,0835	0,0887	0,0639	0,0821	0,0792	0,1362
45%	0,1072	0,1161	0,0759	0,089	0,0864	0,1582
45%	0,128	0,1453	0,0926	0,11	0,1063	0,1877
45%	0,1192	0,1278	0,0812	0,0941	0,0908	0,1686
80%	0,1275	0,1492	0,074	0,0483	0,0418	0,1513
80%	0,1658	0,1912	0,0914	0,0619	0,0546	0,1822
80%	0,1586	0,19	0,0915	0,0619	0,0542	0,1796
85%	0,1746	0,2103	0,1015	0,0626	0,0573	0,1919
85%	0,1335	0,1599	0,083	0,0493	0,0459	0,1588
85%	0,1598	0,1858	0,0925	0,0557	0,0514	0,1786

Lampiran 13. Spektra FTIR campuran standar parasetamol-KBr (50 mg standar parasetamol : 950 mg KBr)

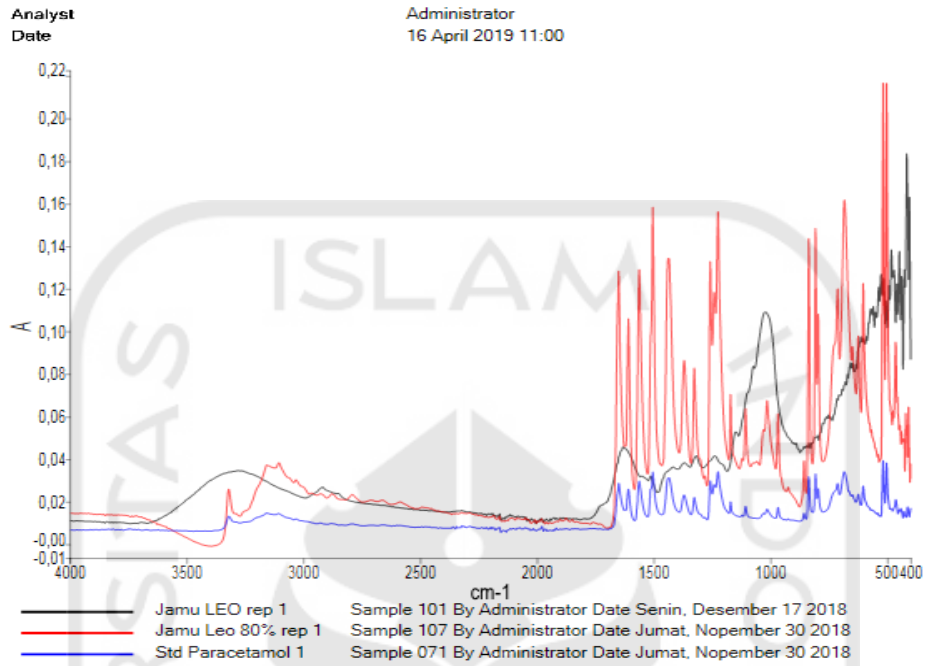
PerkinElmer Spectrum Version 10.5.1
30 November 2018 14:09



Sample Name	Description	Quality Checks
Std paracetamol 3	Sample 075 By Administrator Date Jumat, Nopember 30 2018	The Quality Checks give rise to a Weak Bands warning for the sample.

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Lampiran 14. *Overlay* spektra FTIR standar parasetamol, KBr, sampel *spike* dan sampel jamu tanpa parasetamol.



Lampiran 15. Overlay spektra FTIR variasi sampel *spike* replikasi 1 beserta standar parasetamol hasil *scanning* pada bilangan gelombang 4000 – 400 cm^{-1} .

