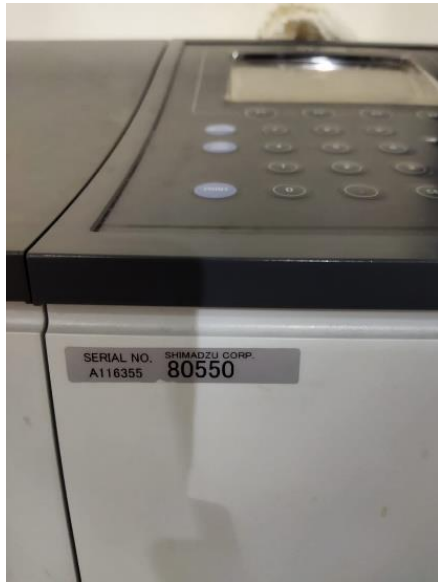


LAMPIRAN

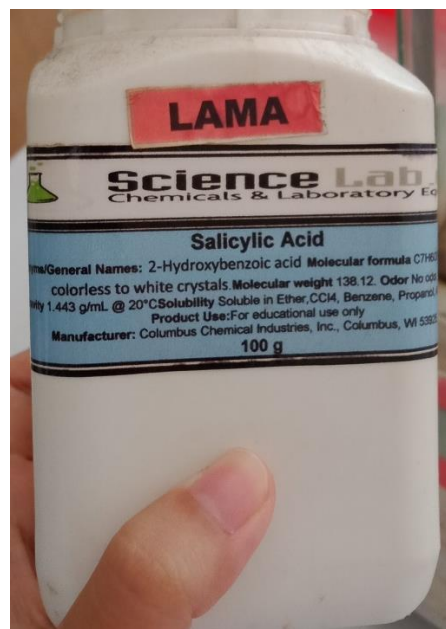
Lampiran 1. Gambar Alat dan Bahan



Spektrofotometri UV-Vis



Neraca Analitik

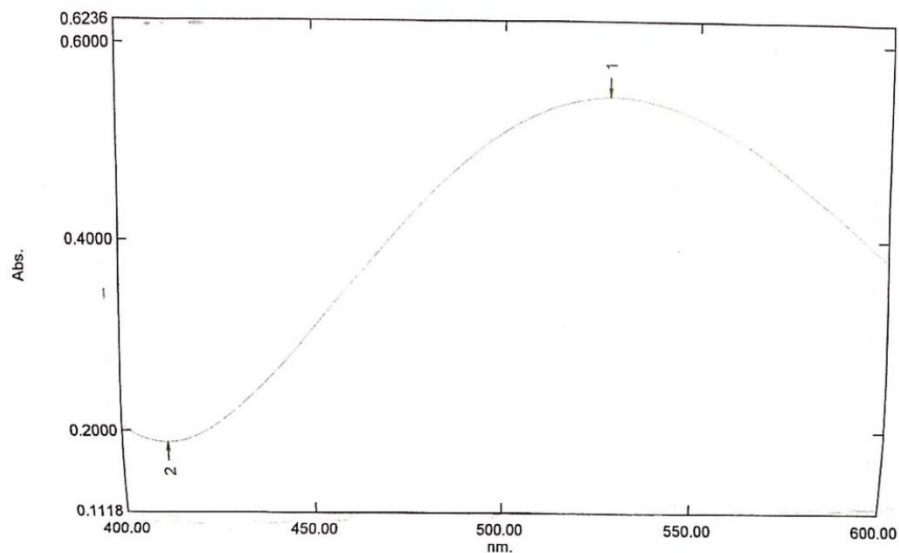


Baku asam salisilat

Lampiran 2. Gambar Kurva Panjang Gelombang Maksimum Baku Asam Salisilat

02/10/2022 01:52:41 PM

Data Set: File_220216_135135 - RawData



[Measurement Properties]
 Wavelength Range (nm): 400.00 to 600.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Single

No.	P/V	Wavelength	Abs.	Description
1	●	527.00	0.5469	
2	●	412.00	0.1885	

[Instrument Properties]
 Instrument Type: UV-1800 Series
 Measuring Mode: Absorbance
 Slit Width: 1.0 nm
 Light Source Change Wavelength: 340.0 nm
 S/R Exchange: Normal

[Attachment Properties]
 Attachment: None

[Operation]
 Threshold: 0.0010000
 Points: 4
 Interpolate: Disabled
 Average: Disabled

[Sample Preparation Properties]
 Weight:
 Volume:
 Dilution:

Lampiran 3. Data Operating Time

Waktu	Absorbansi	Waktu	Absorbansi
0	0,570	16	0,570
1	0,570	17	0,569
2	0,569	18	0,569
3	0,571	19	0,569
4	0,569	20	0,569
5	0,570	21	0,569
6	0,569	22	0,569
7	0,569	23	0,569
8	0,570	24	0,569
9	0,569	25	0,569
10	0,569	26	0,569
11	0,569	27	0,569
12	0,569	28	0,569
13	0,569	29	0,569
14	0,569	30	0,569
15	0,569		

Lampiran 4. Perubahan larutan setelah penambahan FeCl_3 1% dalam HCl 1%



Lampiran 5. Perhitungan pembuatan larutan FeCl₃ 1% dalam HCl 1%

Pembuatan HCl 1% :

$$\begin{aligned} V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 37,2\% &= 100 \text{ ml} \times 1\% \\ V_1 &= 2,68 \text{ ml} \\ &= 2,7 \text{ ml} \end{aligned}$$

cara pembuatan :

Dipipet hcl pekat 37,2% sebanyak 2,7 ml. Kemudian dimasukkan kedalam gelas kimia 100 ml. Dilarutkan dengan akuades sampai tanda batas dan dicampur homogen.

Pembuatan FeCl₃ 1% dalam HCl 1% :

$$1\% = \frac{1 \text{ g}}{100 \text{ ml}}$$

cara pembuatan :

diitmbang FeCl₃ sebanyak 1 gram. dilarutkan dengan HCl 1% dalam bekker gelas kimia 100 ml sampai tanda batas.

Lampiran 6. Pembuatan Larutan Baku

6.1. Larutan Baku Asam Salisilat 1000 ppm

Penimbangan :

$$\begin{array}{r}
 \text{Kaca timbang kosong} = 0,2668 \text{ g} \\
 \text{Kaca timbang + baku} = 0,3669 \text{ g} \\
 \text{Kaca timbang + sisa} = 0,2670 \text{ g} \quad - \\
 \hline
 \text{Berat asam salisilat} = 0,0999 \text{ g} \\
 = 99,9 \text{ mg}
 \end{array}$$

Konsentrasi sebenarnya baku asam salisilat :

$$\frac{99,9 \text{ mg}}{0,1 \text{ L}} = 999 \text{ ppm}$$

Cara pembuatan :

Ditimbang baku asam salisilat sebanyak 0,0999 g, dimasukkan kedalam labu takar 100 ml, kemudian ditambahkan 10 ml methanol serta akuades, dan dihomogenkan.

6.2. Panjang gelombang maksimum dan *Operating time*

Konsentrasi larutan pengukuran panjang gelombang dan *operating time*.

$$\begin{array}{r}
 V_1 \times C_1 = V_2 \times C_2 \\
 0,5 \text{ ml} \times 999 = 10 \times C_2 \\
 C_2 = 49,95 \text{ ppm}
 \end{array}$$

Cara pembuatan :

Dipipet 0,5 ml larutan baku asam salisilat 999 ppm, masukan kedalam labu tentukur 10 ml, kemudian tambahkan 1 ml FeCl_3 1% dalam HCl 1%, dan tambahkan akuades samapi tanda batas.

6.3 Pengenceran larutan baku

Pengenceran larutan baku asam salisilat dari 999 ppm ke 99,9 ppm untuk kurva baku dan validasi metode.

$$\begin{array}{r}
 V_1 \times C_1 = V_2 \times C_2 \\
 V_1 \times 999 = 100 \times 99,9 \\
 V_1 = 10 \text{ ml}
 \end{array}$$

Cara membuat :

Dipipet larutan baku 999 ppm sebanyak 10 ml, kemudian masukan kedalam labu takar 100 ml, ditambahkan akuades sampai tanda batas dan dihomogenkan.

Lampiran 7. Pembuatan seri konsentrasi larutan baku asam salisilat

$$\begin{aligned}
 7.1 \quad V_1 \times C_1 &= V_2 \times C_2 \\
 2 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\
 C_2 &= 19,98 \text{ ppm}
 \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 2 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned}
 7.2 \quad V_1 \times C_1 &= V_2 \times C_2 \\
 3 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\
 C_2 &= 29,97 \text{ ppm}
 \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 3 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned}
 7.3 \quad V_1 \times C_1 &= V_2 \times C_2 \\
 4 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\
 C_2 &= 39,96 \text{ ppm}
 \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 4 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned}
 7.4 \quad V_1 \times C_1 &= V_2 \times C_2 \\
 5 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\
 C_2 &= 49,95 \text{ ppm}
 \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 5 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned}
 7.5 \quad V_1 \times C_1 &= V_2 \times C_2 \\
 6 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2
 \end{aligned}$$

$$C2 = 59,94 \text{ ppm}$$

Cara pembuatan :

Dipipet sebanyak 6 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl_3 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned}
 7.6 \quad V1 \times C2 &= V2 \times C2 \\
 7 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C2 \\
 C2 &= 69,93 \text{ ppm}
 \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 7 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl_3 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

Lampiran 8. Validasi Metode Analisis

8.1 Linearitas

$$\begin{aligned} V_1 \times C_2 &= V_2 \times C_1 \\ 2 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\ C_2 &= 19,98 \text{ ppm} \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 2 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned} V_1 \times C_2 &= V_2 \times C_1 \\ 3 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\ C_2 &= 29,97 \text{ ppm} \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 3 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned} V_1 \times C_2 &= V_2 \times C_1 \\ 4 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\ C_2 &= 39,96 \text{ ppm} \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 4 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$\begin{aligned} V_1 \times C_2 &= V_2 \times C_1 \\ 5 \text{ ml} \times 99,9 \text{ ppm} &= 10 \text{ ml} \times C_2 \\ C_2 &= 49,95 \text{ ppm} \end{aligned}$$

Cara pembuatan :

Dipipet sebanyak 5 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$V_1 \times C_2 = V_2 \times C_1$$

$$6 \text{ ml} \times 99,9 \text{ ppm} = 10 \text{ ml} \times C_2$$

$$C_2 = 59,94 \text{ ppm}$$

Cara pembuatan :

Dipipet sebanyak 6 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

$$V_1 \times C_1 = V_2 \times C_2$$

$$7 \text{ ml} \times 99,9 \text{ ppm} = 10 \text{ ml} \times C_2$$

$$C_2 = 69,93 \text{ ppm}$$

Cara pembuatan :

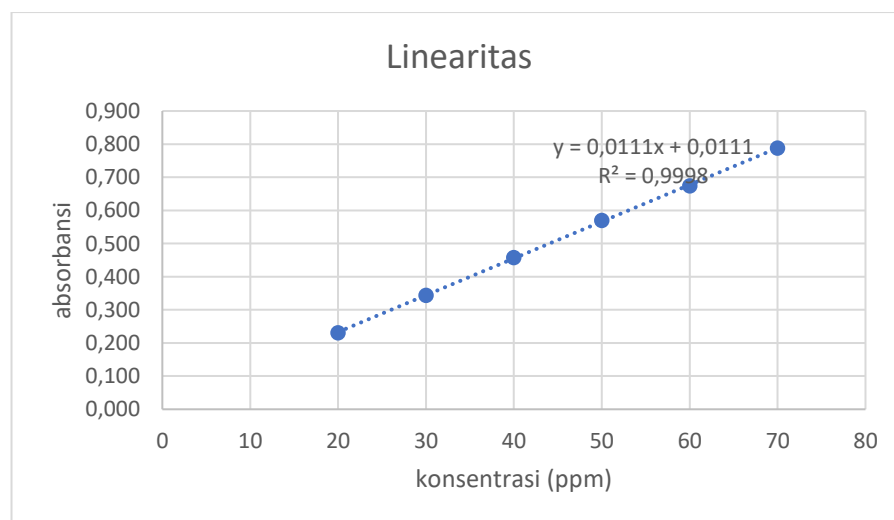
Dipipet sebanyak 7 ml larutan baku 99,9 ppm kemudian dimasukkan kedalam labu takar 10 ml. Ditambahkan 1 ml FeCl₃ 1% dalam HCl 1% dan tambahkan akuades sampai tanda batas. Dihomogenkan.

Konsentrasi	Absorbansi
19,98	0,231
29,97	0,344
39,96	0,458
49,95	0,57
59,94	0,674
69,93	0,788

$$a = 0,01107619$$

$$b = 0,011105714$$

$$r = 0,99991366$$



8.2 Akurasi

Konsentrasi	Replikasi	Konsentrasi (ppm)	Abs	Konsentrasi Sebenarnya (ppm)	%	Rata-rata	% Recovery
80%	1	30	0,335	29,1673	97,22%	98,63%	99,33%
	2	30	0,34	29,6175	98,73%		
	3	30	0,344	29,9777	99,93%		
100%	1	50	0,561	49,5172	99,03%	99,63%	
	2	50	0,567	50,0575	100,11%		
	3	50	0,565	49,8774	99,75%		
120%	1	70	0,79	70,1372	100,20%	99,72%	
	2	70	0,786	69,7770	99,68%		
	3	70	0,783	69,5069	99,30%		

8.3 Presisi

Replikasi	Konsentrasi (ppm)	Absorbansi	Konsentrasi sebenarnya (ppm)	Rata-rata	SD	RSD
1	50	0,561	49,5172	49,6673	63,33%	1,28%
2	50	0,555	48,9769			
3	50	0,556	49,0670			
4	50	0,562	49,6072			
5	50	0,57	50,3276			
6	50	0,572	50,5077			

8.4 LOD dan LOQ

Konsentrasi	Absorbansi	y'	y-y'	(y-y') ²
20	0,231	0,233190	-0,002190	0,0000047982
30	0,344	0,344248	-0,000248	0,0000000613
40	0,458	0,455305	0,002695	0,0000072643
50	0,570	0,566362	0,003638	0,0000132357
60	0,674	0,677419	-0,003419	0,0000116899
70	0,788	0,788476	-0,000476	0,0000002268
			$\sum (y-y')^2$	0,0000372762
			Jumlah/n-2	0,000009319
			Sy/x	0,003052712

$$\text{LOD} = \frac{3,3 \times \text{Sy/x}}{b} = \frac{3,3 \times 0,003052712}{0,011105714} = \mathbf{0,907095911}$$

$$\text{LOQ} = \frac{10 \times \text{Sy/x}}{b} = \frac{10 \times 0,003052712}{0,011105714} = \mathbf{2,748775487}$$

Lampiran 8. Validasi Metode Analisis

8.5 Selektivitas

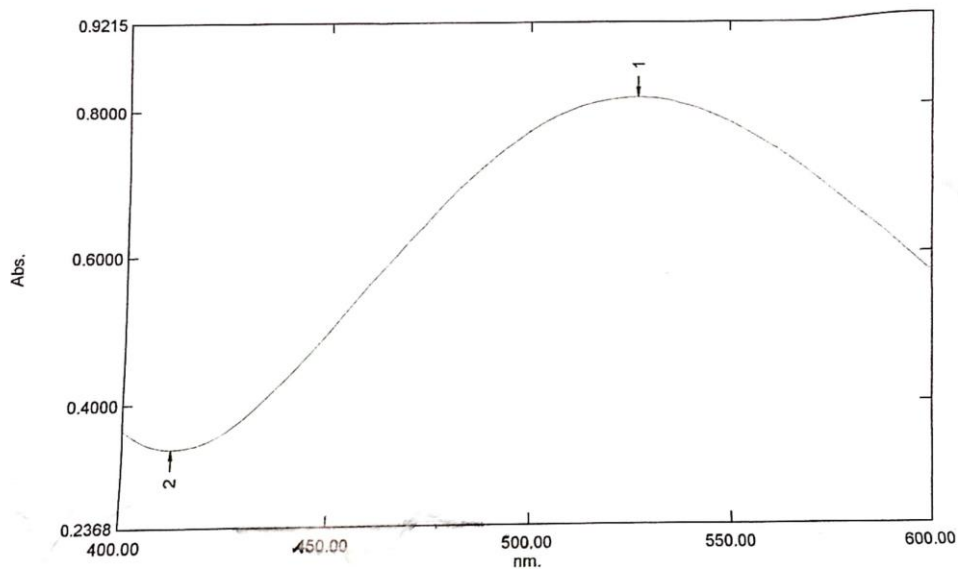
Sampel A

Sampel A

Spectrum Peak Pick Report

03/24/2022 01:23:38 PM

Data Set: File_220324_132206 - RawData



[Measurement Properties]
 Wavelength Range (nm.): 400.00 to 600.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Single

400.00 to 600.00
 Fast
 1.0
 Disabled
 Single

No.	P/V	Wavelength	Abs.	Description
1		527.00	0.8185	
2		412.00	0.3398	

[Instrument Properties]
 Instrument Type: UV-1800 Series
 Measuring Mode: Absorbance
 Slit Width: 1.0 nm
 Light Source Change Wavelength: 340.0 nm
 S/R Exchange: Normal

[Attachment Properties]
 Attachment: None

[Operation]
 Threshold: 0.0010000



Lampiran 8. Validasi Metode Analisis

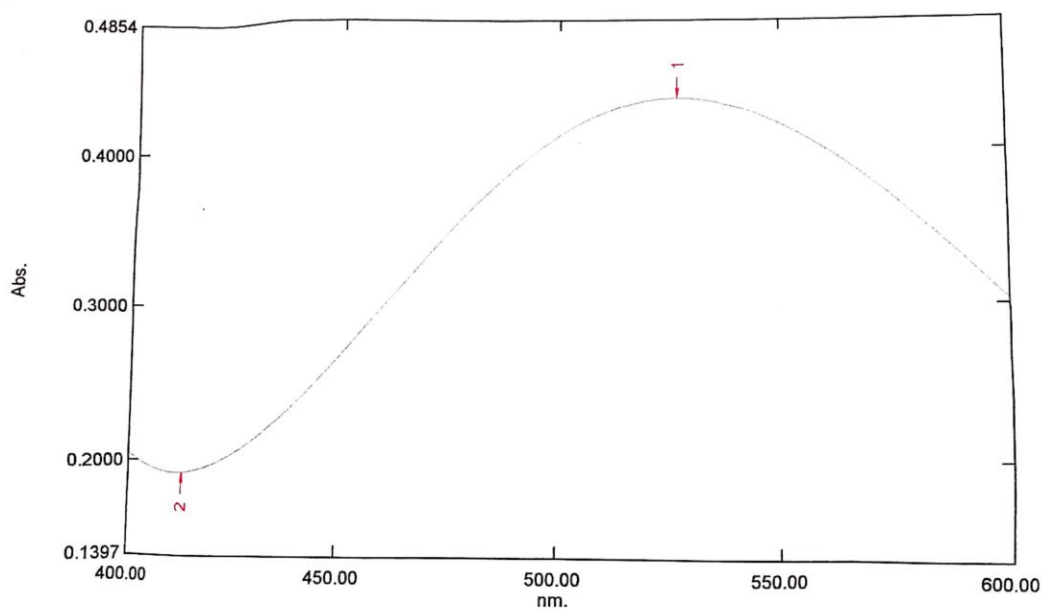
Sampel B

Sampel B

Spectrum Peak Pick Report

03/17/2022 10:24:52 AM

Data Set: File_220317_102219 - RawData



[Measurement Properties]
 Wavelength Range (nm.): 400.00 to 600.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Single

No.	P/V	Wavelength	Abs.	Description
1	⬆	527.00	0.4337	
2	⬇	414.00	0.1915	

[Instrument Properties]
 Instrument Type: UV-1800 Series
 Measuring Mode: Absorbance
 Slit Width: 1.0 nm
 Light Source Change Wavelength: 340.0 nm
 S/R Exchange: Normal

Lampiran 8. Validasi Metode Analisis

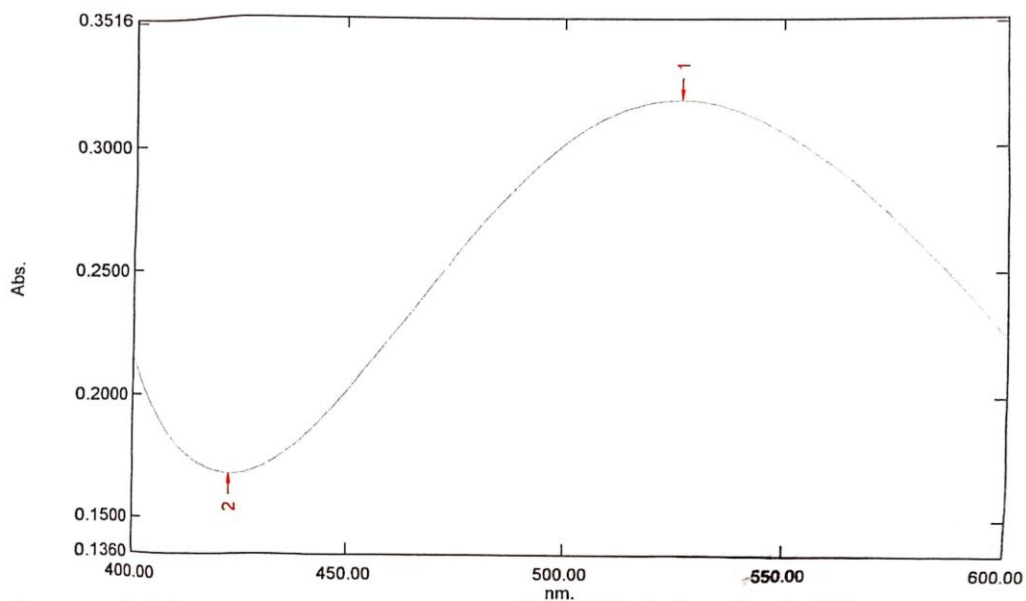
Sampel C

Sampel C

Spectrum Peak Pick Report

03/21/2022 11:14:47 AM

Data Set: File_220321_111138 - RawData



[Measurement Properties]
 Wavelength Range (nm.): 400.00 to 600.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Single

No.	P/V	Wavelength	Abs.	Description
1		527.00	0.3192	
2		423.00	0.1684	

[Instrument Properties]
 Instrument Type: UV-1800 Series
 Measuring Mode: Absorbance
 Slit Width: 1.0 nm
 Light Source Change Wavelength: 340.0 nm
 S/R Exchange: Normal

Lampiran 9. Data Penetapan Kadar Sampel

9.1 Sampel A

Replikasi 1 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 24,6789 \text{ g}$$

$$\text{Kaca arloji + zat} = 25,6824 \text{ g}$$

$$\begin{aligned} \text{Berat zat} &= 1,0035 \text{ g} \\ &= 1003,5 \text{ mg} \end{aligned}$$

- Absorbansi sampel = 0,736

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,736 = 0,01107619 + 0,011105714x$$

$$X = 65,27485 \text{ mg/L}$$

- Penetapan kadar

$$\text{Kadar asam salisilat} = \frac{65,27485 \text{ mg/L} \times 0,025 \text{ L} \times 5}{1003,5 \text{ mg}} \times 100\%$$

$$= 0,813\%$$

Replikasi 2 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 21,4675 \text{ g}$$

$$\text{Kaca arloji + zat} = 22,4706 \text{ g}$$

$$\begin{aligned} \text{Berat zat} &= 1,00031 \text{ g} \\ &= 1003,1 \text{ mg} \end{aligned}$$

- Absorbansi sampel = 0,746

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,746 = 0,01107619 + 0,011105714x$$

$$X = 66,17529 \text{ mg/L}$$

- Penetapan kadar

$$\begin{aligned} \text{Kadar asam salisilat} &= \frac{66,17529 \text{ mg/L} \times 0,025 \text{ L} \times 5}{1003,1 \text{ mg}} \times 100\% \\ &= 0,825\% \end{aligned}$$

Replikasi 3 :

- Penimbangan sampel :

$$\begin{aligned} \text{Kaca arloji kosong} &= 21,471 \text{ g} \\ \text{Kaca arloji + zat} &= 22,4747 \text{ g} \\ \text{Berat zat} &= 1,0037 \text{ g} \\ &= 1003,7 \text{ mg} \end{aligned}$$

- Absorbansi sampel = 0,752

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,752 = 0,01107619 + 0,011105714x$$

$$X = 66,71555 \text{ mg/L}$$

- Penetapan kadar

$$\begin{aligned} \text{Kadar asam salisilat} &= \frac{66,71555 \text{ mg/L} \times 0,025 \text{ L} \times 5}{1003,7 \text{ mg}} \times 100\% \\ &= 0,831\% \end{aligned}$$

$$\begin{aligned} \text{Kadar rata-rata} &= \frac{0,813\% + 0,825\% + 0,831\%}{3} \\ &= 0,823\% \end{aligned}$$

9.2 Sampel B

Replikasi 1 :

- Penimbangan sampel :

$$\begin{aligned} \text{Kaca arloji kosong} &= 21,4719 \text{ g} \\ \text{Kaca arloji + zat} &= 22,4737 \text{ g} \\ \text{Berat zat} &= 1,0018 \text{ g} \\ &= 1001,8 \text{ mg} \end{aligned}$$

- Absorbansi sampel = 0,460

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,460 = 0,01107619 + 0,011105714x$$

$$X = 40,42278 \text{ mg/L}$$

- Penetapan kadar

$$\begin{aligned} \text{Kadar asam salisilat} &= \frac{40,42278 \text{ mg/L} \times 0,025 \text{ L} \times 1}{1001,8 \text{ mg}} \times 100\% \\ &= 0,101\% \end{aligned}$$

Replikasi 2 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 21,4719 \text{ g}$$

$$\text{Kaca arloji + zat} = 22,4838 \text{ g}$$

$$\text{Berat zat} = 1,0119 \text{ g}$$

$$= 10011,9 \text{ mg}$$

- Absorbansi sampel = 0,469

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,469 = 0,01107619 + 0,011105714x$$

$$X = 41,23317 \text{ mg/L}$$

- Penetapan kadar

$$\begin{aligned} \text{Kadar asam salisilat} &= \frac{41,23317 \text{ mg/L} \times 0,025 \text{ L} \times 1}{1011,9 \text{ mg}} \times 100\% \\ &= 0,102\% \end{aligned}$$

Replikasi 3 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 21,468 \text{ g}$$

$$\text{Kaca arloji + zat} = 22,4824 \text{ g}$$

$$\text{Berat zat} = 1,0144 \text{ g}$$

$$= 1014,4 \text{ mg}$$

- Absorbansi sampel = 0,466

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,466 = 0,01107619 + 0,011105714x$$

$$X = 40,96304 \text{ mg/L}$$

- Penetapan kadar

$$\text{Kadar asam salisilat} = \frac{40,96304 \text{ mg/L} \times 0,025 \text{ L} \times 1}{1014,4 \text{ mg}} \times 100\%$$

$$= 0,101\%$$

$$\text{Kadar rata-rata} = \frac{0,101\% + 0,102\% + 0,101\%}{3}$$

$$= 0,101\%$$

9.3 Sampel C

Replikasi 1 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 23,4191 \text{ g}$$

$$\text{Kaca arloji + zat} = 24,4222 \text{ g}$$

$$\text{Berat zat} = 1,0031 \text{ g}$$

$$= 1003,1 \text{ mg}$$

- Absorbansi sampel = 0,583

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,583 = 0,01107619 + 0,011105714x$$

$$X = 51,49816 \text{ mg/L}$$

- Penetapan kadar

$$\text{Kadar asam salisilat} = \frac{51,49816 \text{ mg/L} \times 0,025 \text{ L} \times 1}{1003,1 \text{ mg}} \times 100\%$$

$$= 0,128\%$$

Replikasi 2 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 21,4674 \text{ g}$$

$$\text{Kaca arloji + zat} = 22,4723 \text{ g}$$

$$\text{Berat zat} = 1,0049 \text{ g}$$

$$= 1004,9 \text{ mg}$$

- Absorbansi sampel = 0,581

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,581 = 0,01107619 + 0,011105714x$$

$$X = 51,31807 \text{ mg/L}$$

- Penetapan kadar

$$\text{Kadar asam salisilat} = \frac{51,31807 \text{ mg/L} \times 0,025 \text{ L} \times 1}{1004,9 \text{ mg}} \times 100\%$$

$$= 0,128\%$$

Replikasi 3 :

- Penimbangan sampel :

$$\text{Kaca arloji kosong} = 22,5725 \text{ g}$$

$$\text{Kaca arloji + zat} = 23,5777 \text{ g}$$

$$\text{Berat zat} = 1,0052 \text{ g}$$

$$= 1005,2 \text{ mg}$$

- Absorbansi sampel = 0,588

$$Y = a + bx$$

$$Y = 0,01107619 + 0,011105714x$$

$$0,588 = 0,01107619 + 0,011105714x$$

$$X = 51,94837 \text{ mg/L}$$

- Penetapan kadar

$$\text{Kadar asam salisilat} = \frac{51,94837 \text{ mg/L} \times 0,025 \text{ L} \times 1}{1005,2 \text{ mg}} \times 100\%$$

$$= 0,129\%$$

$$\text{Kadar rata-rata} = \frac{0,128\% + 0,128\% + 0,129\%}{3}$$

$$= 0,128\%$$

Sampel	Replikas i	Absorbans i	Kadar Asam salisilat	Kadar rata-rata	(x-xi) ²	SD
A	1	0,736	0,813%	0,823%	0,0000956	0,00891
	2	0,746	0,825%		0,0000027	
	3	0,752	0,831%		0,0000619	
				$\Sigma(x-xi)^2$	0,0001602	
B	1	0,46	0,101%	0,101%	0,0000001	0,000671
	2	0,469	0,102%		0,0000008	
	3	0,466	0,101%		0	
				$\Sigma(x-xi)^2$	0,0000009	
C	1	0,583	0,128%	0,128%	0	0,000894
	2	0,581	0,128%		0,0000001	
	3	0,588	0,129%		0,0000014	
				$\Sigma(x-xi)^2$	0,0000016	

- Sampel A

$$SD = \sqrt{\frac{\Sigma(x-xi)^2}{n-1}} = \sqrt{\frac{0,0001602}{2}} = 0,00891$$

- Sampel B

$$SD = \sqrt{\frac{\Sigma(x-xi)^2}{n-1}} = \sqrt{\frac{0,0000009}{2}} = 0,000671$$

- Sampel C

$$SD = \sqrt{\frac{\Sigma(x-xi)^2}{n-1}} = \sqrt{\frac{0,0000016}{2}} = 0,000894$$