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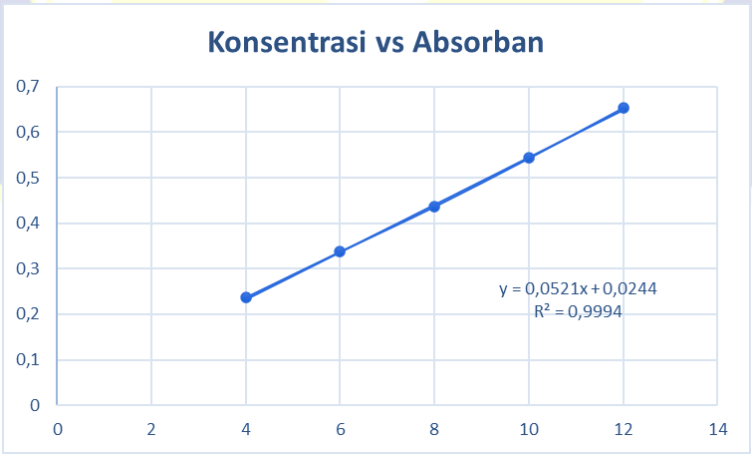
LAMPIRAN 1

DATA DAN HASIL PENELITIAN

Tabel VII.1

Data Kurva Kalibrasi Parasetamol dalam Pelarut Etanol p.a dengan Metode Absorbansi

Konsentrasi (ppm)	Absorban
4	0,236
6	0,337
8	0,436
10	0,543
12	0,654



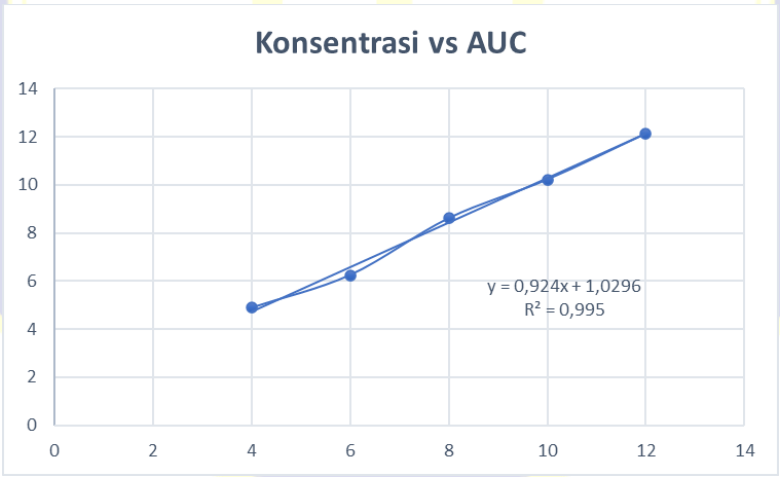
Gambar VII.1 Kurva kalibrasi parasetamol dalam pelarut etanol dengan metode absorbansi

LAMPIRAN 1
(LANJUTAN)

Tabel VII.2

Data Kurva Kalibrasi Parasetamol dengan Metode *Area Under Curve* (AUC)

Konsentrasi (ppm)	AUC
4	4,884
6	6,248
8	8,614
10	10,225
12	12,135



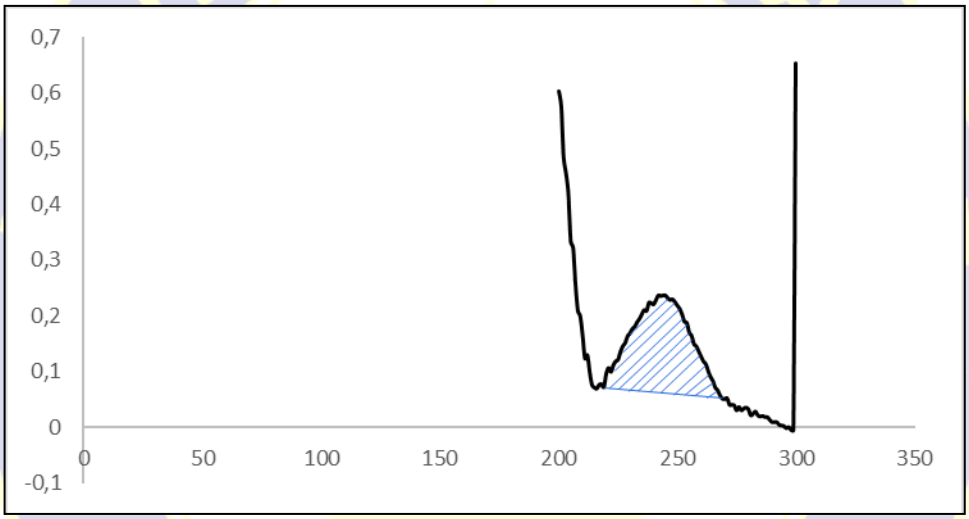
Gambar VII.2 Kurva kalibrasi Parasetamol dengan metode *area under curve* (AUC)

LAMPIRAN 1
(LANJUTAN)

Tabel VII.3

Data AUC Parasetamol Konsentrasi 4 ppm pada λ maks 243 nm

Titik Awal	Titik Akhir	AUC
217	268	4,884



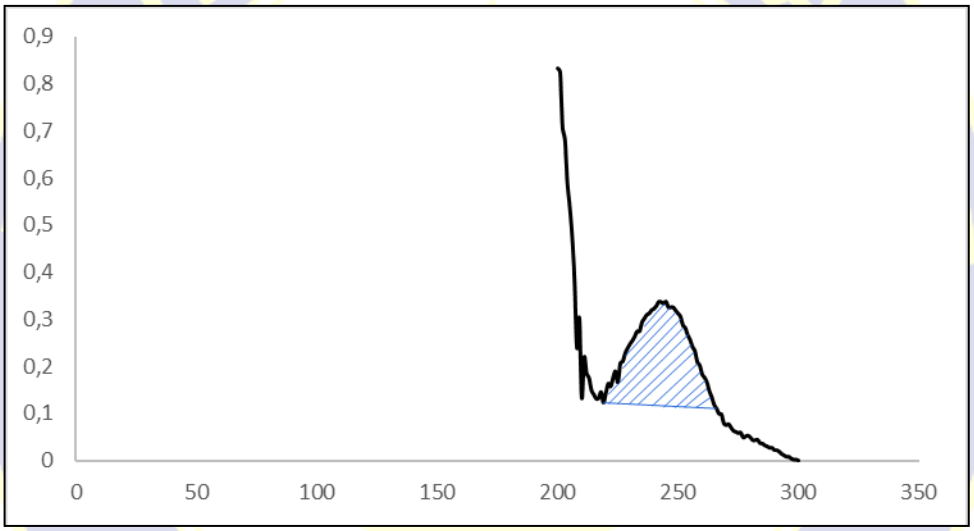
Gambar VII.3 Spektrum AUC Parasetamol 4 ppm pada λ maks 243 nm

LAMPIRAN 1
(LANJUTAN)

Tabel VII.4

Data AUC Parasetamol Konsentrasi 6 ppm pada λ maks 243 nm

Titik Awal	Titik Akhir	AUC
217	268	6,248



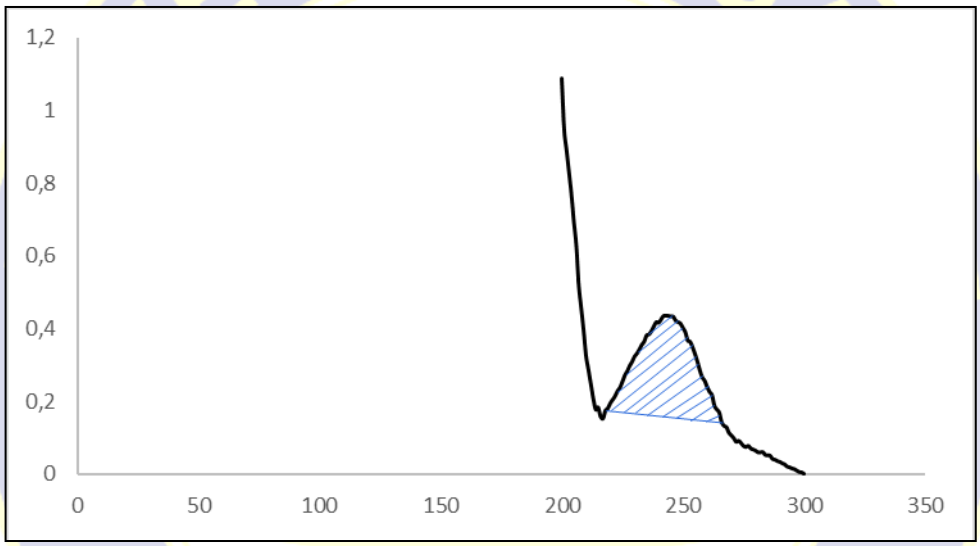
Gambar VII. 4 Spektrum AUC Parasetamol 6 ppm pada λ maks 243 nm

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 5

Data AUC Parasetamol Konsentrasi 8 ppm pada λ maks 243 nm

Titik Awal	Titik Akhir	AUC
217	268	8,614



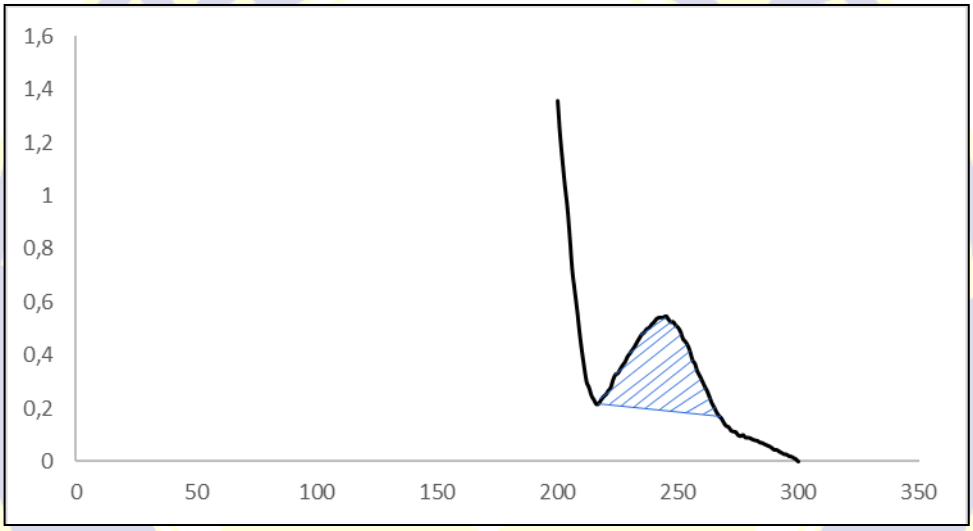
Gambar VII. 5 Spektrum AUC Parasetamol 8 ppm pada λ maks 243 nm

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 6

Data AUC Parasetamol Konsentrasi 10 ppm pada λ maks 243 nm

Titik Awal	Titik Akhir	AUC
217	268	10,225



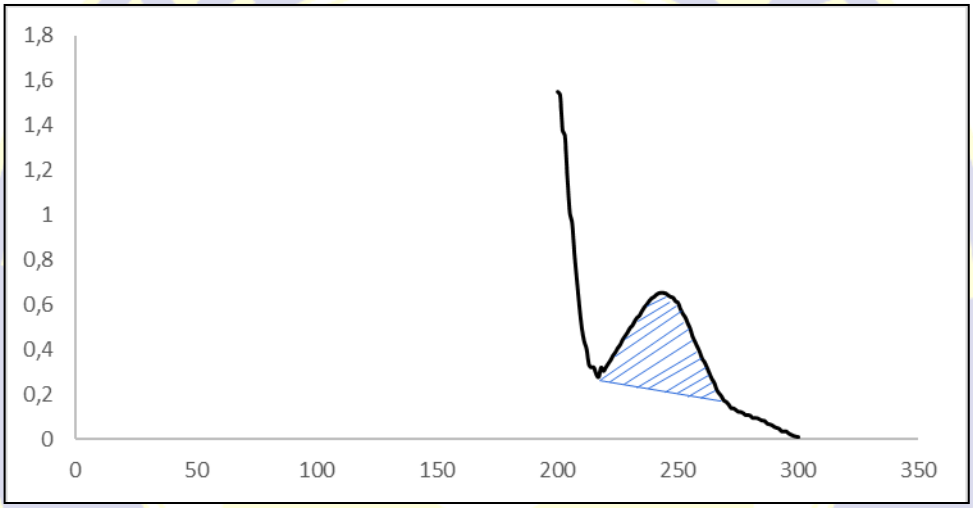
Gambar VII. 6 Spektrum AUC Parasetamol 10 ppm pada λ maks 243 nm

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 7

Data AUC Parasetamol Konsentrasi 12 ppm pada λ maks 243 nm

Titik Awal	Titik Akhir	AUC
217	268	12,135



Gambar VII. 7 Spektrum AUC Parasetamol 12 ppm pada λ maks 243 nm

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 8

Data Linearitas Tablet Parasetamol dengan Metode Absorbansi

No	Konsentrasi (ppm) (X)	Absorban (Y)	X.Y	X^2	Y^2
1	4	0,236	0,944	16	0,055696
2	6	0,337	2,022	36	0,113569
3	8	0,436	3,488	64	0,190096
4	10	0,543	5,43	100	0,294849
5	12	0,654	7,848	144	0,427716
Jumlah	**40**	**2,206**	**19,732**	**360**	**1,081926**
Rata-rata	**8**	**0,4412**	**3,9464**	**72**	**0,2163852**
b	0,0521				
a	0,0244				
r	0,995690437				

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 9

Data Linearitas Tablet Parasetamol dengan Metode *Area Under Curve* (AUC)

No	Konsentrasi (ppm) (X)	AUC (Y)	X.Y	X^2	Y^2
1	4	4,884	19,536	16	23,85346
2	6	6,248	37,488	36	39,0375
3	8	8,614	68,912	64	74,201
4	10	10,225	102,25	100	104,5506
5	12	12,135	145,62	144	147,2582
Jumlah	**40**	**42,106**	**373,806**	**360**	**388,901**
Rata-rata	**8**	**8,4212**	**74,7612**	**72**	**77,7802**
b	0,9475				
a	1,0232				
r	0,997538096				

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 10

Data LOD dan LOQ Tablet Parasetamol dengan Metode Absorbansi

No	Konsentrasi (ppm) (X)	Absorban (Y)	y'	y-y'	$(y-y')^2$
1	4	0,236	0,2328	0,0032	1,024E-05
2	6	0,337	0,337	0	0
3	8	0,436	0,4412	-0,0052	2,704E-05
4	10	0,543	0,5454	-0,0024	5,76E-06
5	12	0,654	0,6496	0,0044	1,936E-05
Jumlah	**40**	**2,206**	**2,206**	**1,11022E-16**	**6,24E-05**
Rata-rata	**8**	**0,4412**	**0,4412**	**2,22045E-17**	**0,00001248**
SD	0,006742897745				
LOD	0,388266664				
LOQ	1,294222216				

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 11

Data LOD dan LOQ Tablet Parasetamol dengan Metode *Area Under Curve* (AUC)

No	Konsentrasi (ppm) (X)	AUC (Y)	y'	y-y'	(y-y')2
1	4	4,884	4,7256	0,1584	0,02509056
2	6	6,248	6,5736	-0,3256	0,10601536
3	8	8,614	8,4216	0,1924	0,03701776
4	10	10,225	10,2696	-0,0446	0,00198916
5	12	12,135	12,1176	0,0174	0,00030276
Jumlah	40	42,106	42,108	-0,002	0,1704156
Rata-rata	8	8,4212	8,4216	-0,0004	0,03408312
SD	0,206407122				
LOD	0,6535317822				
LOQ	2,1784392739				

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 12

Data Presisi Tablet Parasetamol dengan Metode Absorbansi

Kadar (ppm)	**Absorban**	**Kadar yang Diperoleh**	**Bobot (mg)**	**% Kadar**
6	0,343	6,11	25,4451039	101,7804154
	0,334	5,95	24,7774481	99,10979228
	0,35	6,23	25,9643917	103,8575668
	0,35	6,23	25,9643917	103,8575668
	0,348	6,20	25,8160237	103,264095
	0,351	6,25	26,0385757	104,1543027
Rata-rata	0,346	6,16	25,6676558	102,6706231
SD				**0,114978258**
%RSD				**1,866530176**

LAMPIRAN 1
(LANJUTAN)

Tabel VII. 13

Data Presisi Tablet Parasetamol dengan Metode *Area Under Curve* (AUC)

Kadar (ppm)	**AUC**	**Kadar yang Diperoleh**	**Bobot (mg)**	**% Kadar**
6	6,274	6,025	25,1041667	100,4166667
	6,248	6	25	100
	6,524	6,265	26,1041667	104,4166667
	6,462	6,205	25,8541667	103,4166667
	6,43	6,175	25,7291667	102,9166667
	6,338	6,086	25,3583333	101,4333333
Rata-rata	6,37933333	6,126	25,525	102,1
SD				**0,105449514**
%RSD				**1,721343682**

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Tabel VII. 14

Data Akurasi Tablet Parasetamol dengan Metode *Area Under Curve* (AUC)

Level Akurasi	Kadar Awal (ppm)	Kadar Standar yang Ditambahkan (ppm)	AUC	Kadar yang Diperoleh (ppm)	Bobot (mg)	Kadar rata-rata	%Recovery
80%	6,31	5,05	12,156	12,04155844	59,61167545	11,99466089	99,96
			12,311	12,20930736	60,44211564		
			11,871	11,73311688	58,08473705		
100%	6,31	6,31	13,733	13,7482684	57,28445166	14,20858586	99,95
			14,955	15,07077922	62,79491342		
			13,787	13,80670996	57,52795815		
120%	6,31	7,6	15,869	16,05995671	52,82880497	15,98600289	99,985
			15,902	16,095671	52,94628617		
			15,631	15,80238095	51,98151629		

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Tabel VII. 15

Data Penetapan Kadar Tablet Parasetamol Generik dengan Metode *Area Under Curve* (AUC)

No.	AUC	Kadar yang diperoleh (ppm)	Bobot (mg)	% Kadar
1	5,741	5,5131242	22,97135083	91,88540333
2	5,439	5,223111396	21,76296415	87,05185659
3	5,816	5,585147247	23,27144686	93,08578745
Rata-rata		5,440460948	22,66858728	90,67434913
SD				**0,191644062**

LAMPIRAN 2

PERHITUNGAN DATA

1. Perhitungan Kurva Kalibrasi dan Linearitas

a. Metode *Area Under Curve* (AUC)

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

$$= \frac{(5\ .\ 373{,}806) - (40\ .\ 42{,}102)}{(5\ .\ 360) - 1600}$$

$$= \frac{1869{,}03 - 1684{,}08}{1800 - 1600}$$

$$= \frac{184{,}95}{200}$$

$$= 0{,}9475$$

$$a = \frac{\sum y - b\sum x}{n}$$

$$= \frac{42{,}106 - (0{,}92475\ .\ 40)}{5}$$

$$= \frac{42{,}106 - 36{,}99}{5}$$

$$= \frac{5{,}116}{5}$$

$$= 1{,}0232$$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\ \sqrt{n\sum y^2 - (\sum y)^2}}$$

$$= \frac{(5\ .\ 373{,}806) - (40\ .\ 42{,}106)}{\sqrt{(5\ .\ 360) - 1600}\ \sqrt{(5\ .\ 388{,}901) - 1772{,}915}}$$

$$= \frac{1869{,}03 - 1684{,}24}{\sqrt{200}\ \sqrt{171{,}59}}$$

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$$= \frac{184,79}{14,142\ .\ 13,099}$$

$$= \frac{184,79}{185,246058}$$

$$= 0,997538096$$

b. Metode Absorbansi

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

$$= \frac{(5\ .19,732) - (40\ .\ 2,206)}{(5\ .\ 360) - 1600}$$

$$= \frac{98,66 - 88,24}{1800 - 1600}$$

$$= \frac{10,42}{200}$$

$$= 0,0521$$

$$a = \frac{\sum y - b\sum x}{n}$$

$$= \frac{2,206 - (0,0521\ .\ 40)}{5}$$

$$= \frac{2,206 - 2,084}{5}$$

$$= \frac{0,122}{5}$$

$$= 0,0244$$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2}\ \sqrt{n\sum y^2 - (\sum y)^2}}$$

$$= \frac{(5\ .\ 19,732) - (40\ .\ 2,206)}{\sqrt{(5\ .\ 360) - 1600}\ \sqrt{(5\ .\ 1,082) - 4,866}}$$

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$$= \frac{10,42}{\sqrt{200\sqrt{0,544}}}$$

$$= \frac{10,42}{14,142\ .\ 0,74}$$

$$= \frac{10,42}{10,4651}$$

$$= 0,99569043$$

2. Perhitungan LOD dan LOQ

a. Metode *Area Under Curve* (AUC)

$$\text{LOD} = \frac{3 \times Syx}{b}$$

$$= \frac{3 \times 0,2064071212}{0,9475}$$

$$= \frac{0,6192213636}{0,9475}$$

$$= 0,6535317822 \text{ ppm}$$

$$\text{LOQ} = \frac{10 \times Syx}{b}$$

$$= \frac{10 \times 0,2064071212}{0,9475}$$

$$= \frac{2,064071212}{0,9475}$$

$$= 2,1784392739 \text{ ppm}$$

b. Metode Absorbansi

$$\text{LOD} = \frac{3 \times Syx}{b}$$

$$= \frac{3 \times 0,006742897745}{0,0521}$$

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$= \frac{0,020228693}{0,0521}$

= 0,388266664 ppm

LOQ = $\frac{10 \times Syx}{b}$

$= \frac{10 \times 0,006742897745}{0,0521}$

$= \frac{0,06742897745}{0,0521}$

= 1,294222216 ppm

3. Perhitungan perolehan kembali (akurasi) tablet parasetamol dengan metode *Area Under Curve* (AUC)

a. Penambahan baku standar 80%

AUC spike = $\frac{12,156+12,311+11,871}{3}$

= 12,113

Kadar spike = $\frac{12,113 \times 6}{6,248}$ = 11,632 ppm

AUC sampel = 6,4235

Kadar sampel = $\frac{6,4235 \times 6}{6,248}$ = 6,17 ppm

AUC standar = 12,113 – 6,4235 = 5,6895

Kadar standar = $\frac{5,6895 \times 6}{6,248}$ = 5,464 ppm

% Recovery = $\frac{11,632-6,17}{5,464}$ x 100%

= 99,96%

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b. Penambahan baku standar 100%

AUC spike = $\frac{13,733+14,955+13,787}{3}$

= 14,158

Kadar spike = $\frac{14,158\times6}{6,248}$ = 13,596 ppm

AUC sampel = 6,4235

Kadar sampel = $\frac{6,4235\times6}{6,248}$ = 6,17 ppm

AUC standar = 14,158 – 6,4235 = 7,7345

Kadar standar = $\frac{7,7345\times6}{6,248}$ = 7,43 ppm

% Recovery = $\frac{Cs-C}{Cd}$ x 100%

= $\frac{13,596-6,17}{7,43}$ x 100%

= 99,95%

c. Penambahan baku standar 120%

AUC spike = $\frac{15,869+15,902+15,631}{3}$

= 15,801

Kadar spike = $\frac{15,801\times6}{6,248}$ = 15,174 ppm

AUC sampel = 6,4235

Kadar sampel = $\frac{6,4235\times6}{6,248}$ = 6,17 ppm

AUC standar = 15,801 – 6,4235 = 9,3775

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Kadar standar = $\frac{9,3775 \times 6}{6,248}$ = 9,0053 ppm

% Recovery = $\frac{Cs-C}{Cd}$ x 100%

= $\frac{15,174-6,17}{9,0053}$ x 100%

= 99,985%

4. Perhitungan presisi tablet parasetamol dengan metode *Area Under Curve* (AUC)

SD = $\sqrt{\frac{(Xi-X)^2}{n-1}}$

=

$\sqrt{\frac{(6,025-6,126)^2+(6-6,126)^2+(6,265-6,126)^2+(6,205-6,126)^2+(6,175-6,126)^2+(6,086-6,126)^2}{6-1}}$

= $\sqrt{\frac{0,01+0,015876+0,019321+0,0064+0,002401+0,0016}{5}}$

= $\sqrt{\frac{0,055598}{5}}$

= $\sqrt{0,0111196}$ = 0,10544914

%RSD = $\frac{SD}{x}$ x 100%

= $\frac{0,10544914}{6,126}$ x 100%

= 1,721343682%

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5. Perhitungan Penetapan Kadar Tablet Parasetamol di Pasaran dengan Metode *Area Under Curve* (AUC)

a. Pengulangan 1

$$\frac{AUC\ Sampel}{Kadar\ Sampel} = \frac{AUC\ Standar}{Kadar\ Standar}$$

$$\frac{5{,}741}{Kadar\ Sampel} = \frac{6{,}248}{6}$$

Kadar sampel = $\frac{5{,}741 \times 6}{6{,}248}$ = 5,5131242 ppm

b. Pengulangan 2

$$\frac{AUC\ Sampel}{Kadar\ Sampel} = \frac{AUC\ Standar}{Kadar\ Standar}$$

$$\frac{5{,}439}{Kadar\ Sampel} = \frac{6{,}248}{6}$$

Kadar sampel = $\frac{5{,}439 \times 6}{6{,}248}$ = 5,223111396 ppm

c. Pengulangan 3

$$\frac{AUC\ Sampel}{Kadar\ Sampel} = \frac{AUC\ Standar}{Kadar\ Standar}$$

$$\frac{5{,}816}{Kadar\ Sampel} = \frac{6{,}248}{6}$$

Kadar sampel = $\frac{5{,}816 \times 6}{6{,}248}$ = 5,585147247 ppm