

## DAFTAR PUSTAKA

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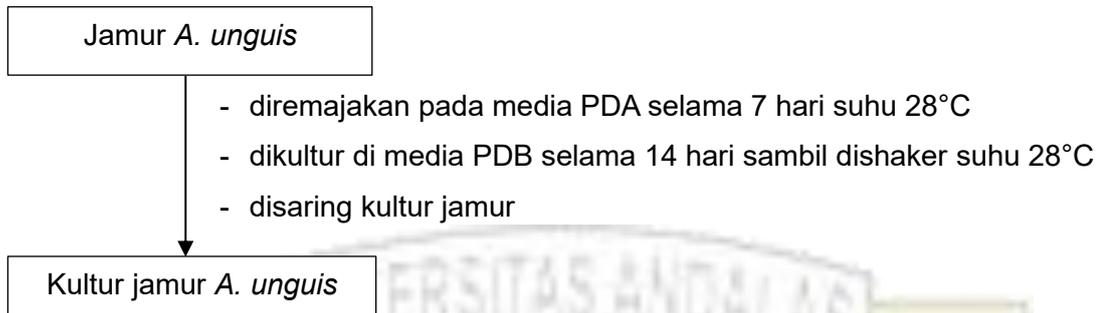
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## LAMPIRAN

### Lampiran 1. Skema Tahapan Kerja

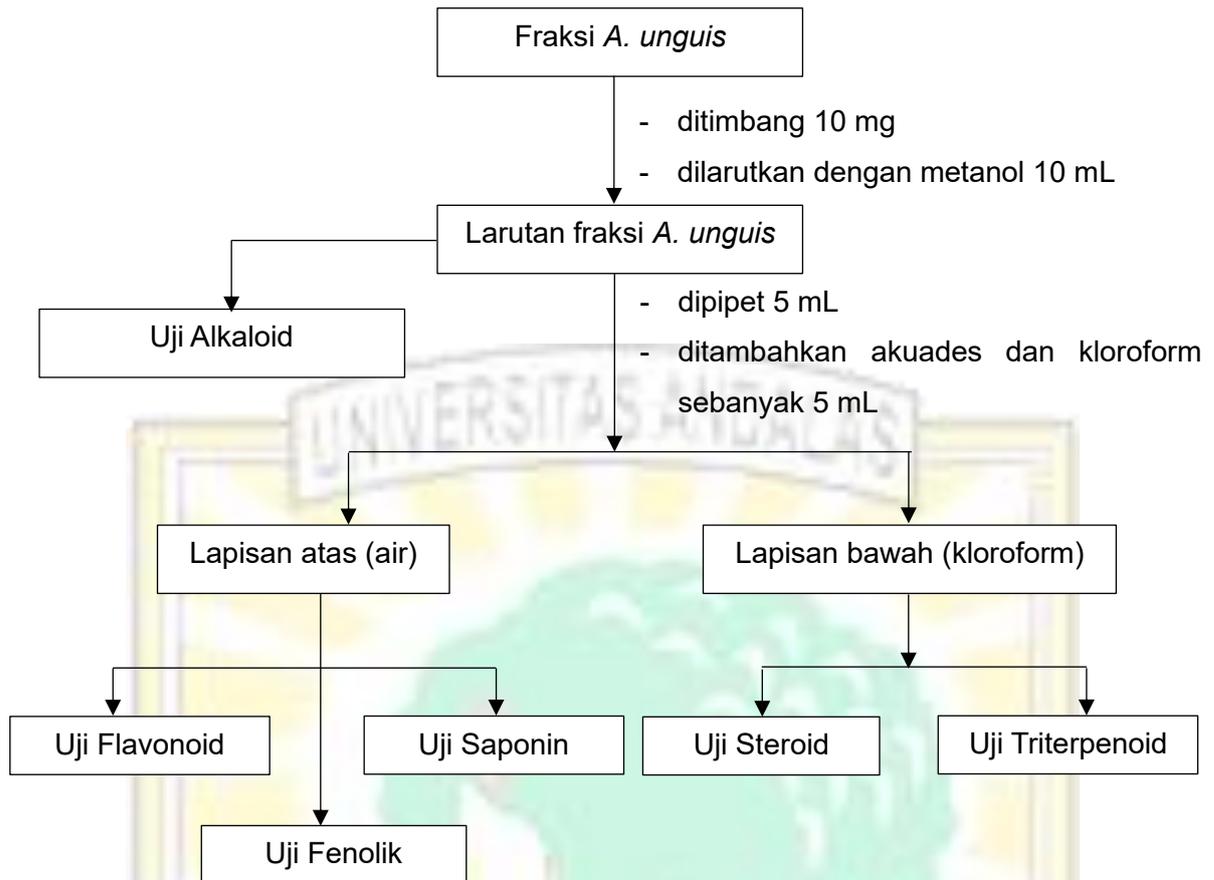
#### A. Kultur Jamur *A. unguis*



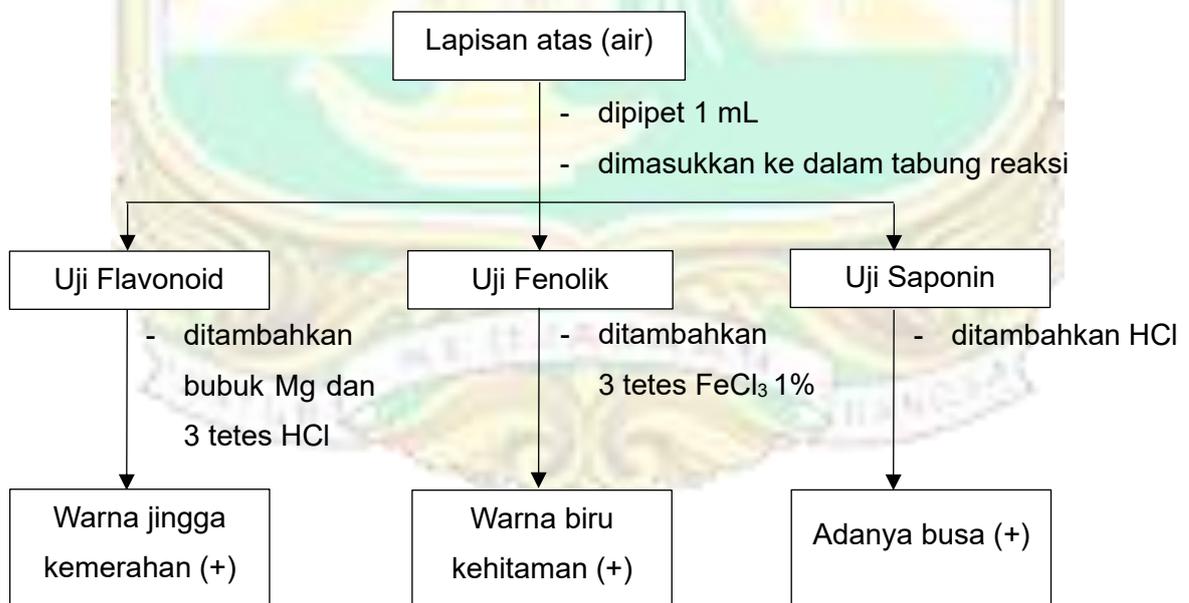
#### B. Ekstraksi dan Fraksinasi Jamur *A. unguis*



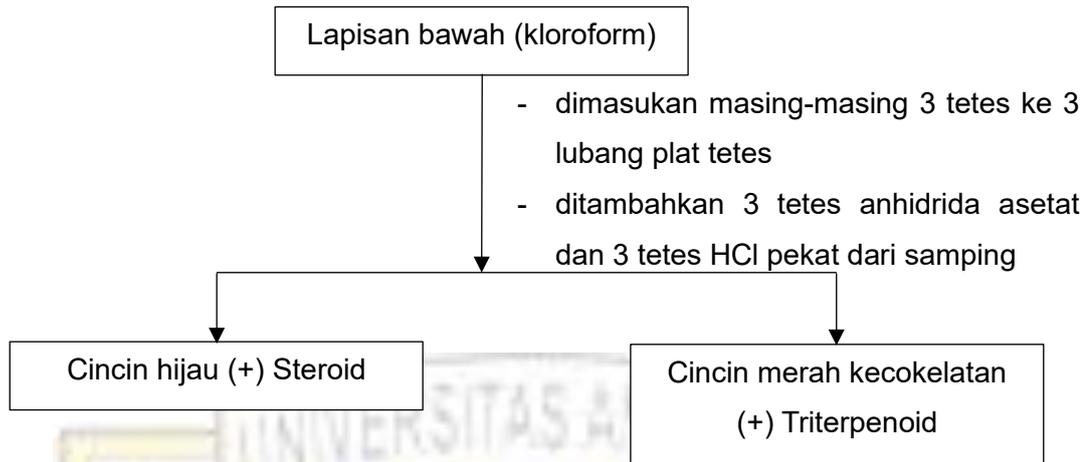
### C. Uji Fitokimia



#### 1. Uji Flavonoid, Fenolik, dan Saponin



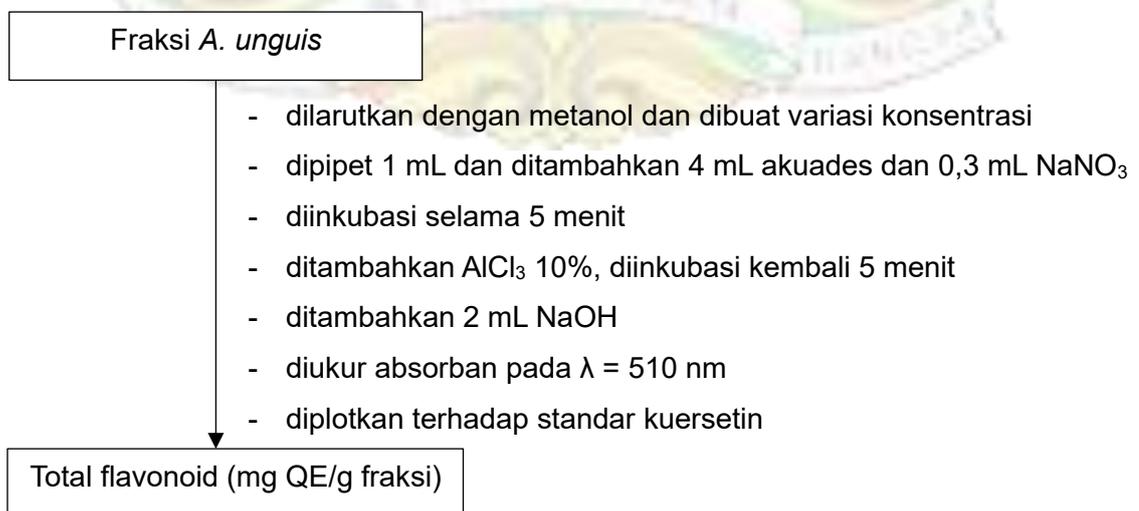
## 2. Uji Steroid dan Triterpenoid



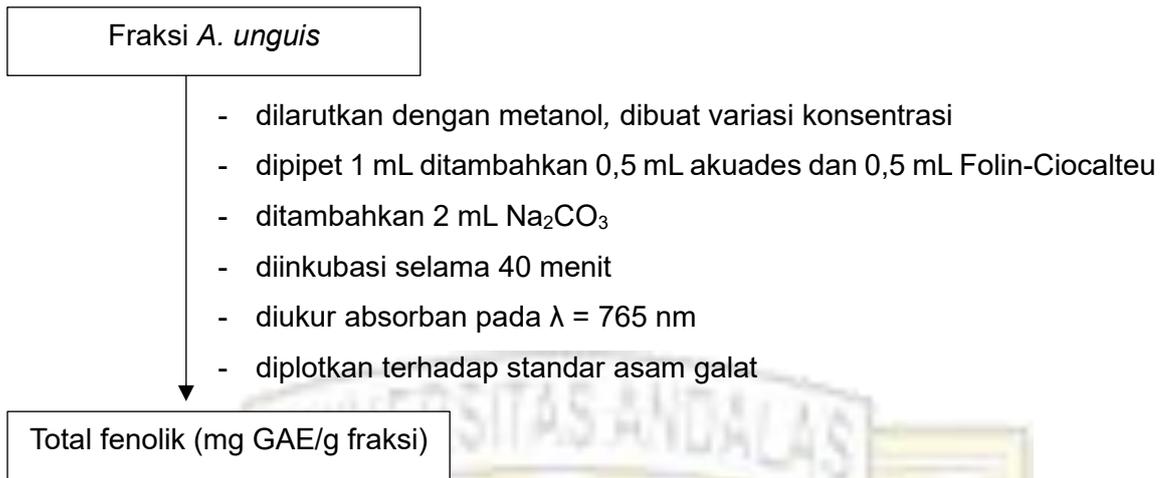
## 3. Uji Alkaloid



## D. Total Flavonoid Content (TFC)

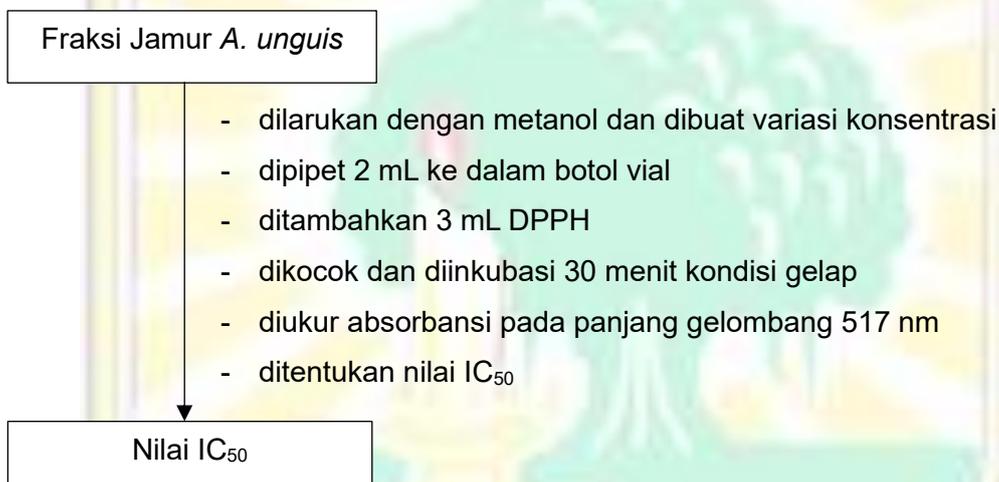


## E. Total Phenolic Content (TPC)

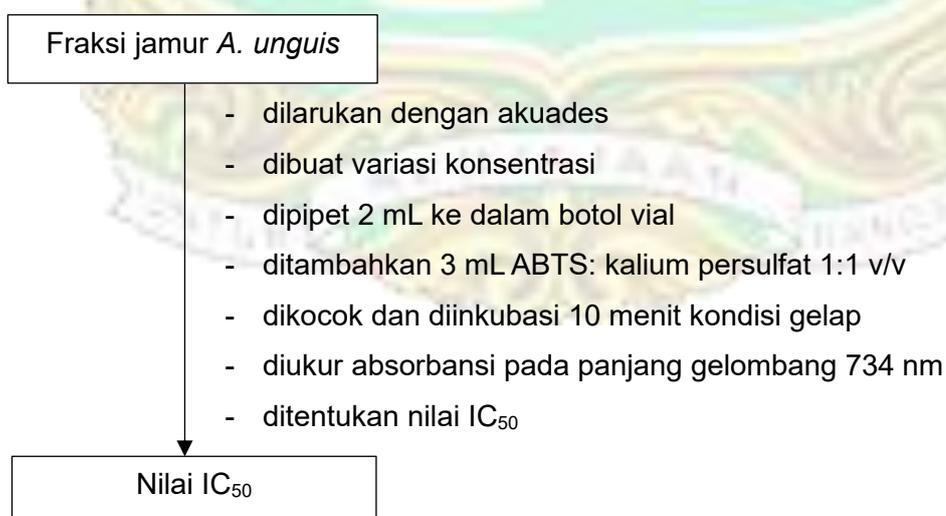


## F. Uji Aktivitas Antioksidan

### 1. Uji DPPH



### 2. Uji ABTS



### 3. Uji FRAP

Fraksi jamur *A. unguis*

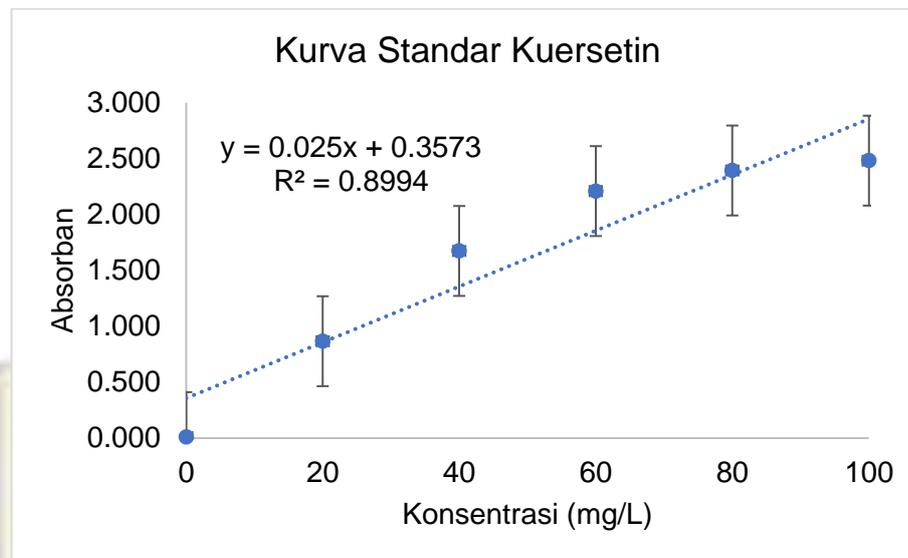
- dilarutkan dengan akuades
- dibuat variasi konsentrasi
- dipipet 2 mL ke dalam botol vial
- ditambahkan 3 mL ABTS: kalium persulfate 1:1 v/v
- dikocok dan diinkubasi 10 menit kondisi gelap
- diukur absorbansi pada panjang gelombang 734 nm
- ditentukan nilai  $IC_{50}$

mg TE/g fraksi



## Lampiran 2. Perhitungan Total Flavonoid Content (TFC)

Kurva standar kuersetin

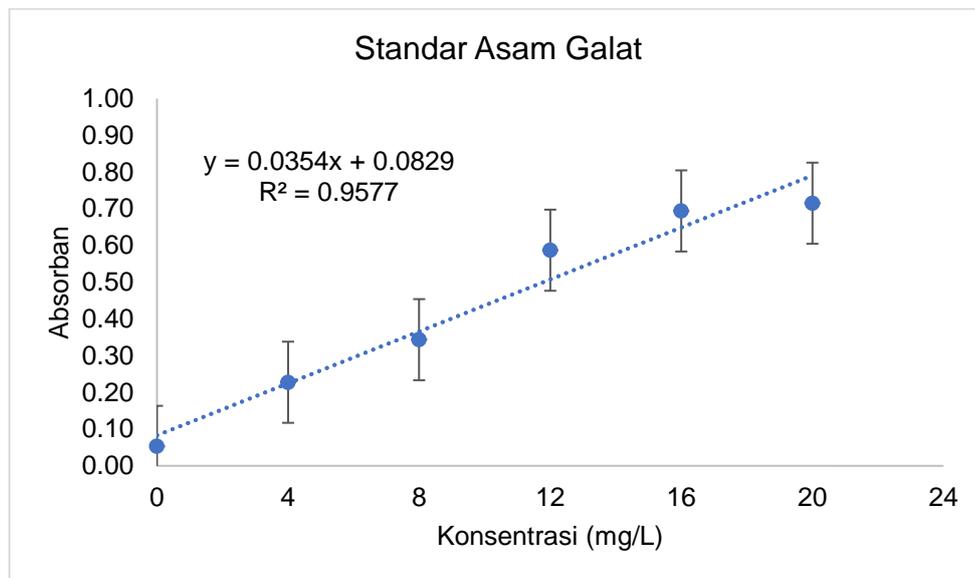


### Hasil Data Keseluruhan Uji TFC

Butanol	TFC	Etil asetat	TFC	Heksana	TFC
0.46	4.108	1.643	51.428	1.108	30.028
0.454	3.868	1.643	51.428	1.109	30.068
0.459	4.068	1.644	51.468	1.109	30.068
Mean	4.015		51.441		30.055
SD	0.129		0.023		0.023

### Lampiran 3. Perhitungan Total Phenolic Content (TPC)

Kurva standar asam galat



Butanol	TPC	Etil asetat	TPC	Heksana	TPC
0.322	6.754	0.368	8.054	0.439	10.059
0.324	6.811	0.369	8.082	0.441	10.116
0.325	6.839	0.359	7.799	0.446	10.257
Mean	4.015		51.441		30.055
SD	0.129		0.023		0.023

Perhitungan TPC

$$\text{TPC} = \frac{\text{mg GAE/L}}{\text{g ekstrak/L}}$$

Hasil Data Keseluruhan Uji TPC

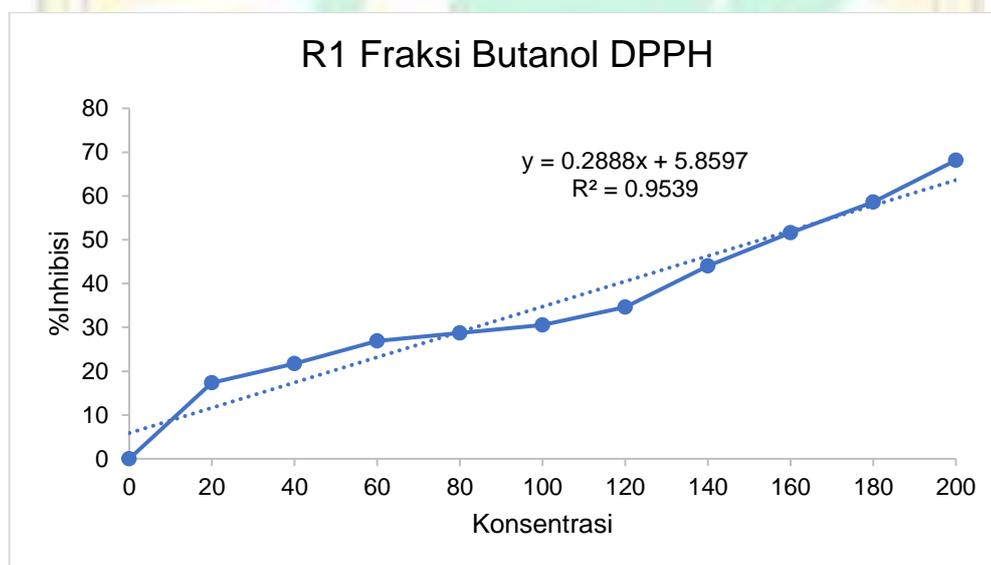
Butanol	mg GAE/g	Etil asetat	mg GAE/g	Heksana	mg GAE/g
0.322	67.54	0.368	80.54	0.439	100.59
0.324	68.11	0.369	80.82	0.441	101.16
0.325	68.39	0.359	77.99	0.446	102.57
Mean	68.013		79.783		101.440
SD	0.433		1.559		1.109

#### Lampiran 4. Perhitungan Nilai IC<sub>50</sub> Fraksi Metode DPPH

$$\% \text{ Inhibisi} = \frac{\text{absorban kontrol} - \text{absorban sampel}}{\text{absorban kontrol}}$$

##### 1. Fraksi Butanol

Konsentrasi (mg/L)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.543	0.000	0.542	0.000	0.542	0.000
20	0.449	17.311	0.450	16.974	0.449	17.159
40	0.425	21.731	0.425	21.587	0.425	21.587
60	0.397	26.888	0.397	26.753	0.397	26.753
80	0.387	28.729	0.387	28.598	0.387	28.598
100	0.377	30.571	0.377	30.443	0.377	30.443
120	0.355	34.622	0.355	34.502	0.339	37.454
140	0.304	44.015	0.304	43.911	0.303	44.096
160	0.263	51.565	0.262	51.661	0.261	51.845
180	0.225	58.564	0.215	60.332	0.227	58.118
200	0.173	68.140	0.181	66.605	0.180	66.790

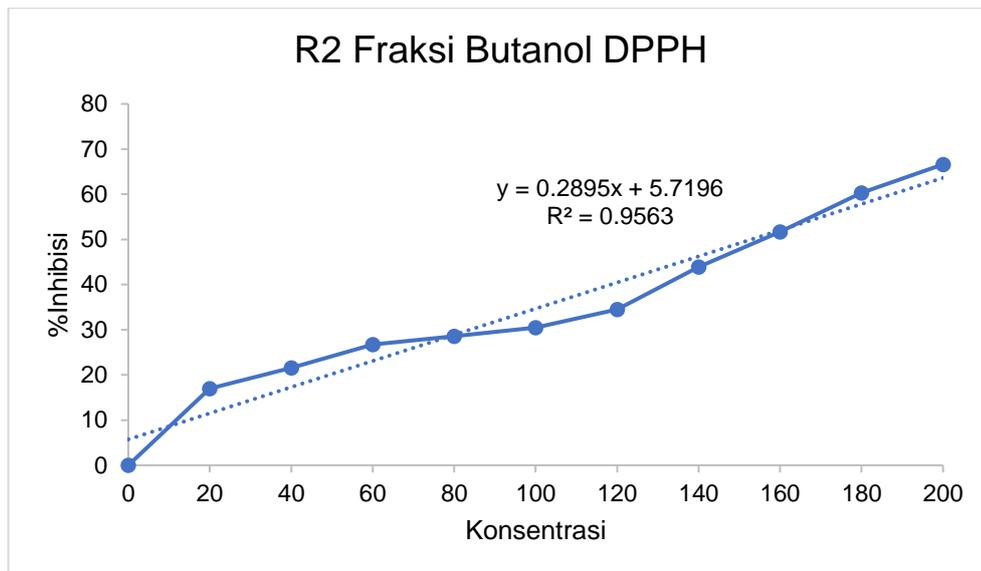


##### Nilai IC<sub>50</sub> R1 fraksi butanol metode DPPH

$$y = 0.2888x + 5.8597$$

$$50 = 0.2888x + 5.8597$$

$$x = 152.840 \text{ mg/L}$$

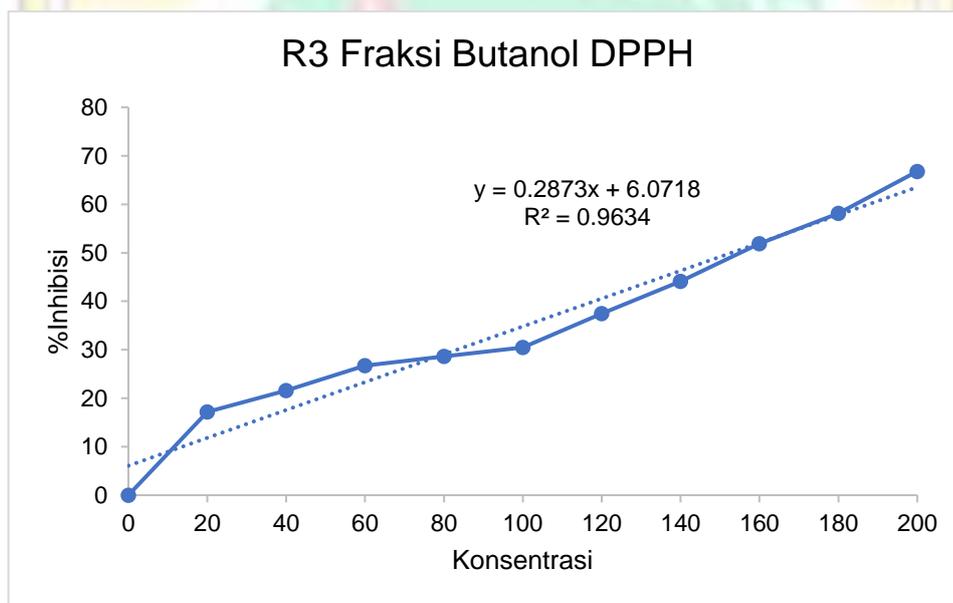


**Nilai IC<sub>50</sub> R2 fraksi butanol metode DPPH**

$$y = 0.2895x + 5.7195$$

$$50 = 0.2895x + 5.7195$$

$$x = 152.955 \text{ mg/L}$$



**Nilai IC<sub>50</sub> R3 fraksi butanol metode DPPH**

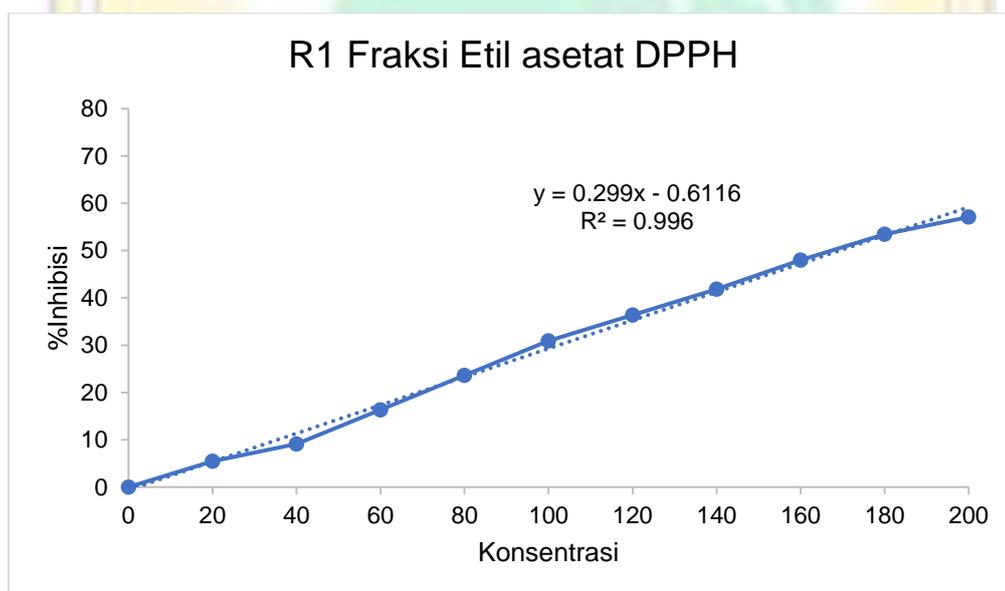
$$y = 0.2873x + 6.0718$$

$$50 = 0.2873x + 6.0718$$

$$x = 152.900 \text{ mg/L}$$

## 2. Fraksi Etil Asetat

Konsentrasi (mg/L)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.550	0.000	0.549	0.000	0.549	0.000
20	0.520	5.455	0.520	5.282	0.521	5.100
40	0.500	9.091	0.498	9.290	0.498	9.290
60	0.460	16.364	0.459	16.393	0.459	16.393
80	0.420	23.636	0.421	23.315	0.420	23.497
100	0.380	30.909	0.380	30.783	0.380	30.783
120	0.350	36.364	0.351	36.066	0.351	36.066
140	0.320	41.818	0.319	41.894	0.319	41.894
160	0.286	48.000	0.285	48.087	0.286	47.905
180	0.256	53.455	0.254	53.734	0.254	53.734
200	0.236	57.091	0.235	57.195	0.236	57.013

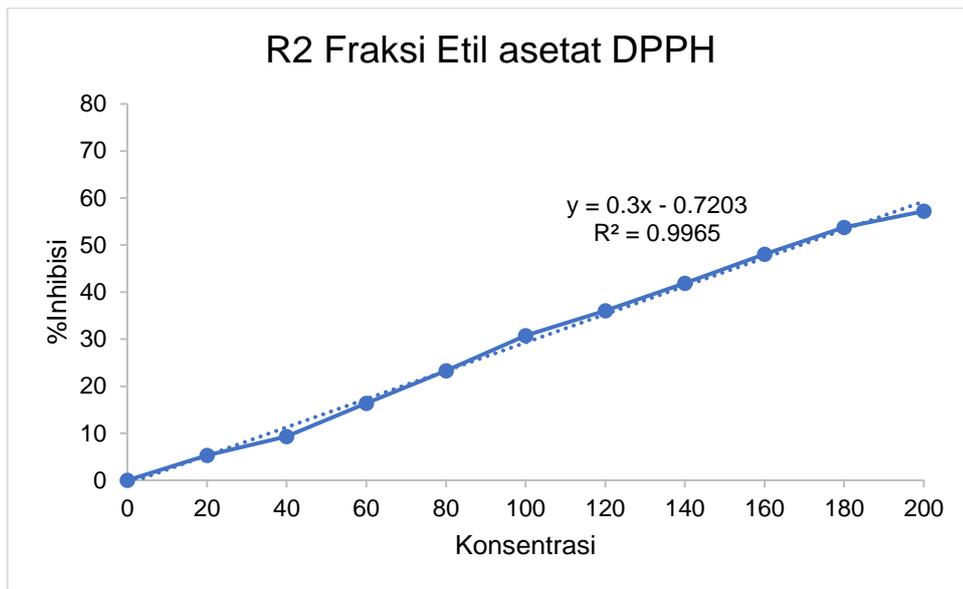


**Nilai IC<sub>50</sub> R1 fraksi etil asetat metode DPPH**

$$y = 0.299x - 0.6116$$

$$50 = 0.299x - 0.6116$$

$$x = 169.270 \text{ mg/L}$$

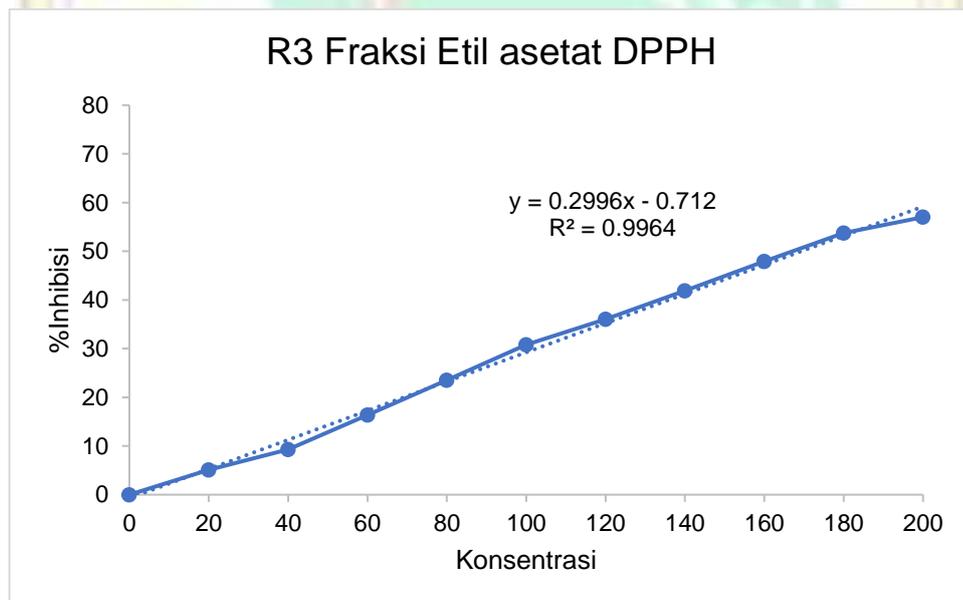


**Nilai IC<sub>50</sub> R2 fraksi etil asetat metode DPPH**

$$y = 0.3x - 0.7203$$

$$50 = 0.3x - 0.7203$$

$$x = 169.068 \text{ mg/L}$$



**Nilai IC<sub>50</sub> R3 fraksi etil asetat metode DPPH**

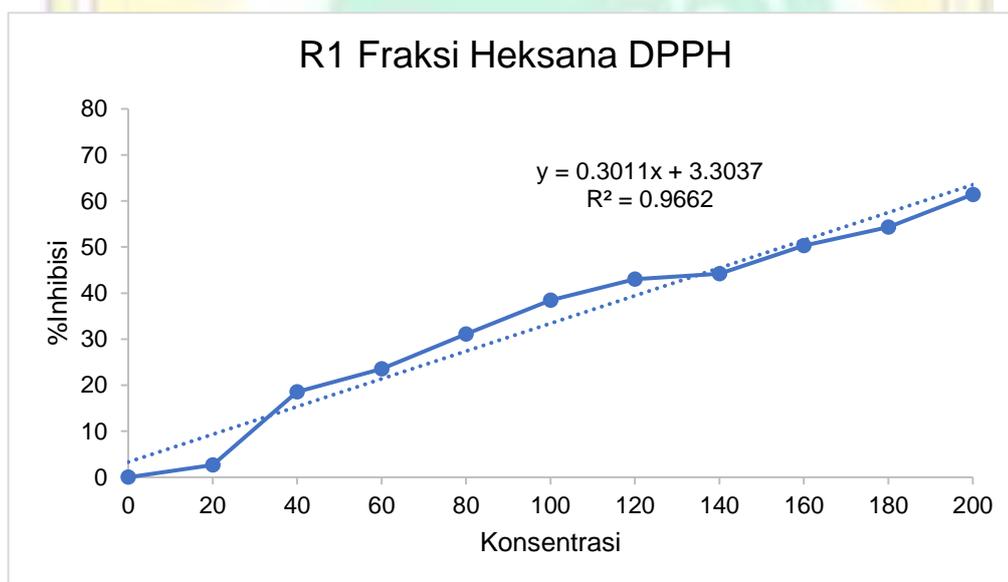
$$y = 0.2996x - 0.712$$

$$50 = 0.2996x - 0.712$$

$$x = 169.266 \text{ mg/L}$$

### 3. Fraksi Heksana

Konsentrasi (mg/L)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.604	0.000	0.604	0.000	0.604	0.000
20	0.588	2.649	0.589	2.500	0.587	2.815
40	0.492	18.543	0.492	18.543	0.493	18.377
60	0.462	23.510	0.464	23.179	0.463	23.344
80	0.416	31.126	0.416	31.126	0.414	31.457
100	0.372	38.411	0.372	38.411	0.372	38.411
120	0.344	43.046	0.342	43.377	0.344	43.046
140	0.337	44.205	0.337	44.205	0.335	44.536
160	0.300	50.331	0.301	50.166	0.300	50.331
180	0.276	54.305	0.279	53.808	0.277	54.139
200	0.233	61.424	0.223	63.079	0.221	63.411

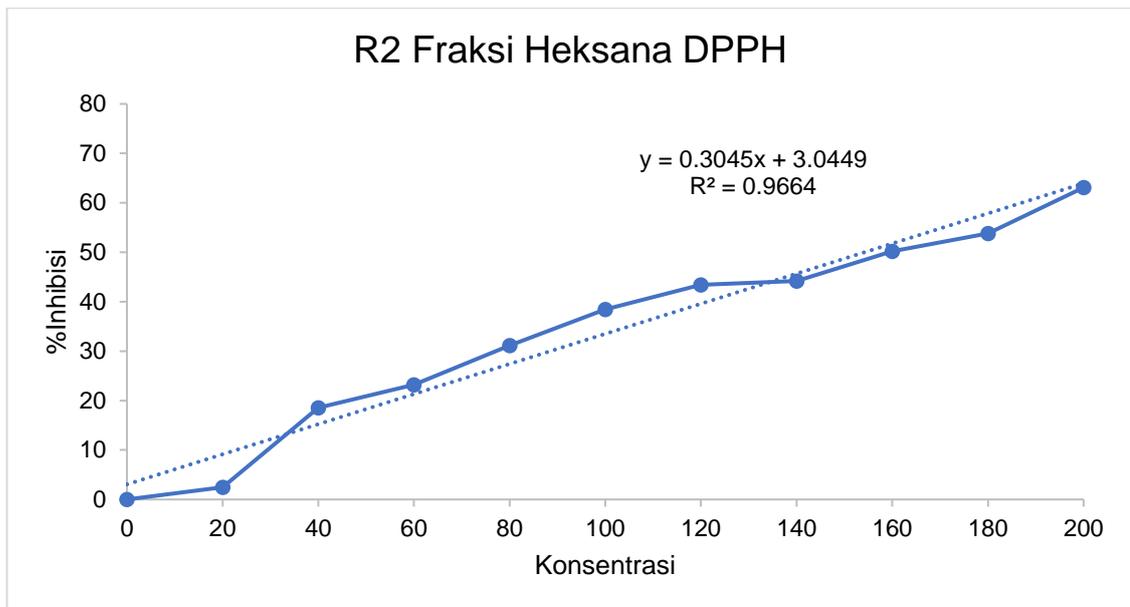


#### Nilai IC<sub>50</sub> R1 fraksi heksana metode DPPH

$$y = 0.3011x + 3.3037$$

$$50 = 0.3011x + 3.3037$$

$$x = 155.086 \text{ mg/L}$$

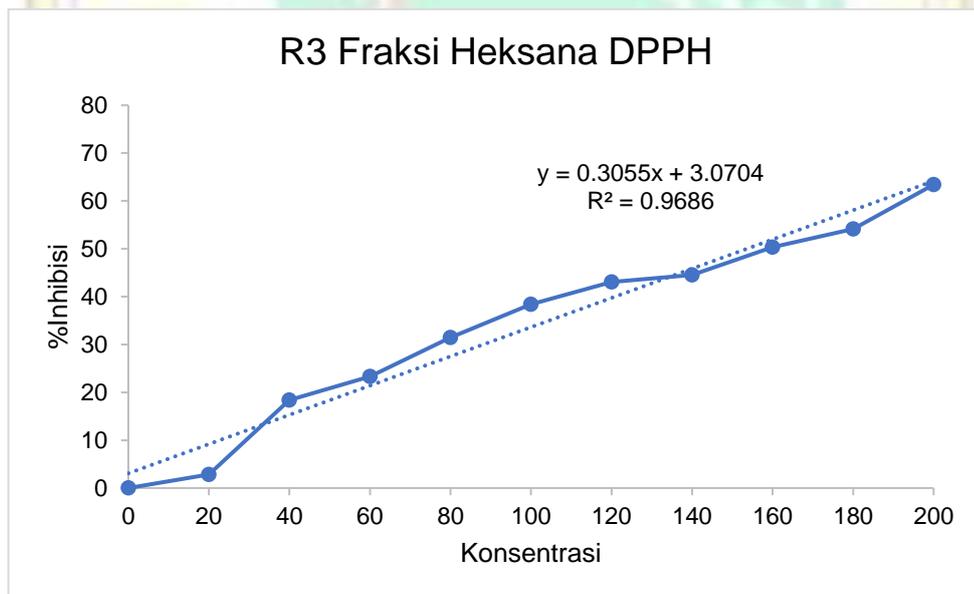


**Nilai IC<sub>50</sub> R2 fraksi heksana metode DPPH**

$$y = 0.3045x + 3.0449$$

$$50 = 0.3045x + 3.0449$$

$$x = 154.204 \text{ mg/L}$$



**Nilai IC<sub>50</sub> R3 fraksi heksana metode DPPH**

$$y = 0.3055x + 3.0704$$

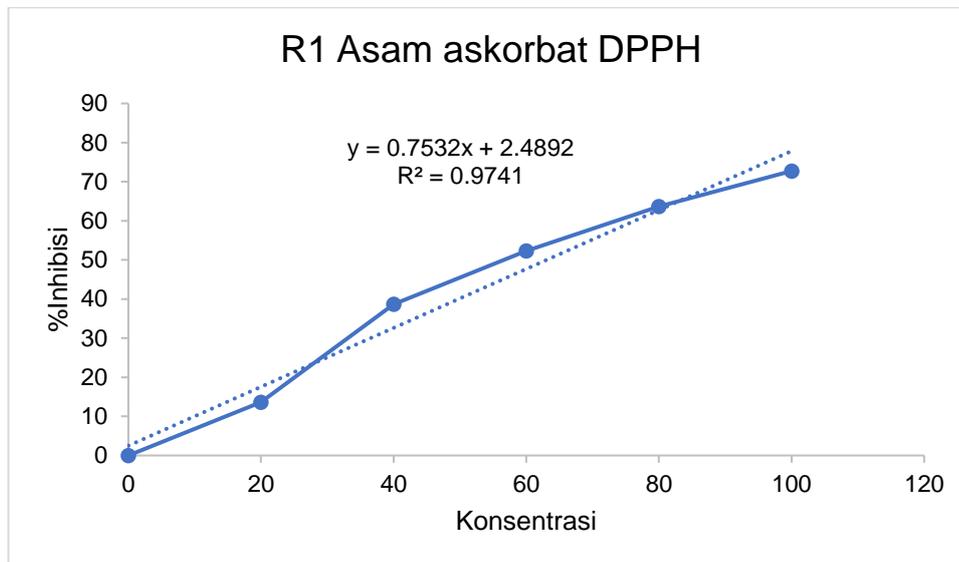
$$50 = 0.3055x + 3.0704$$

$$x = 153.616 \text{ mg/L}$$

**4. Standar Asam Askorbat**

Konsentrasi (ppm)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.044	0.000	0.044	0.000	0.043	0.000
20	0.038	13.636	0.038	13.636	0.037	13.953
40	0.027	38.636	0.027	38.636	0.027	37.209

60	0.021	52.273	0.022	50.000	0.022	48.837
80	0.016	63.636	0.016	63.636	0.016	62.791
100	0.012	72.727	0.012	72.727	0.012	72.093

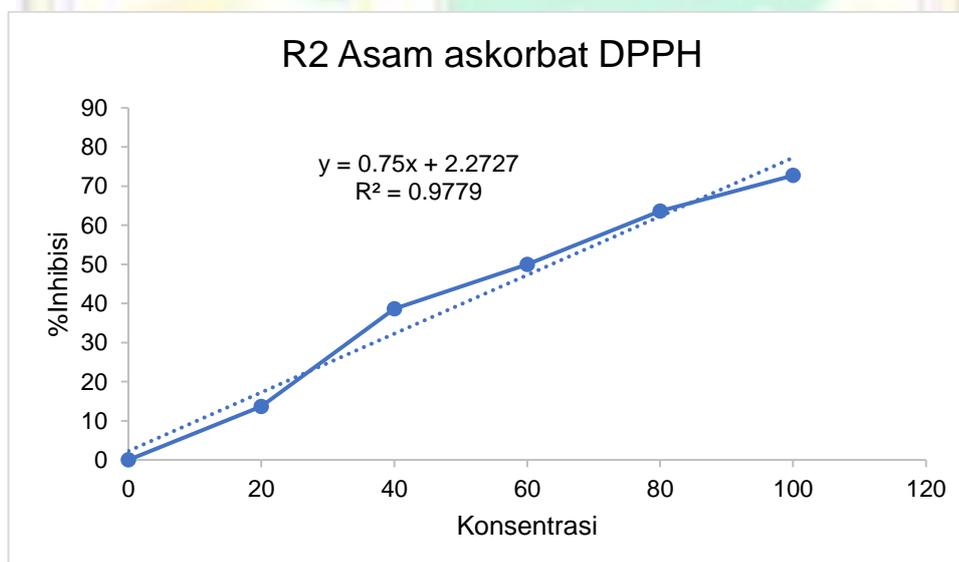


**Nilai IC<sub>50</sub> R1 standar asam askorbat metode DPPH**

$$y = 0.7532x + 2.4892$$

$$50 = 0.7532x + 2.4892$$

$$x = 63.079 \text{ mg/L}$$

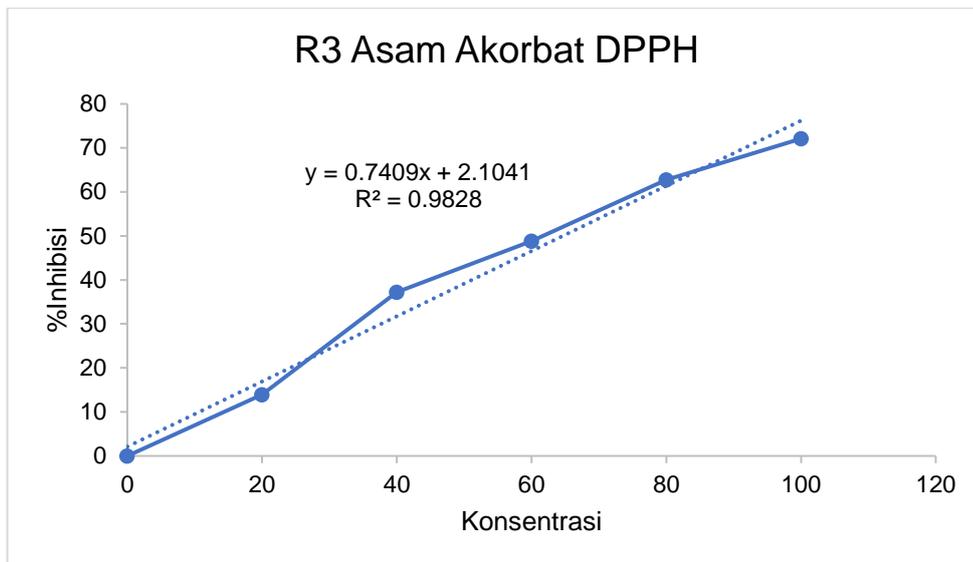


**Nilai IC<sub>50</sub> R2 standar asam askorbat metode DPPH**

$$y = 0.75x + 2.2727$$

$$50 = 0.75x + 2.2727$$

$$x = 63.636 \text{ mg/L}$$



**Nilai IC<sub>50</sub> R3 standar asam askorbat metode DPPH**

$y = 0.7409x + 2.1041$

$50 = 0.7409x + 2.1041$

$x = 64.646 \text{ mg/L}$

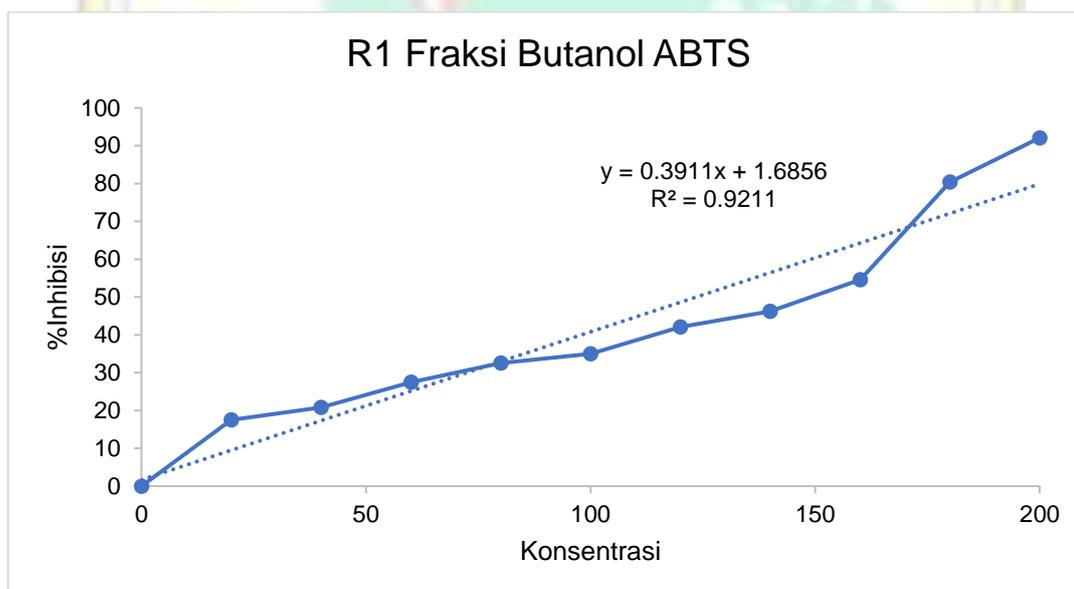
**Hasil Data Keseluruhan Uji DPPH**

Pengulangan	Fraksi			Asam askorbat
	Butanol	Etil asetat	Heksana	
R1	152.840	169.270	155.086	63.079
R2	152.955	169.068	154.204	63.636
R3	152.900	169.266	153.616	64.646
Mean	152.898	169.201	154.302	63.787
SD	0.057	0.115	0.740	0.794

## Lampiran 5. Perhitungan Nilai IC<sub>50</sub> Fraksi Metode ABTS

### 1. Fraksi Butanol

Konsentrasi (mg/L)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.240	0.000	0.240	0.000	0.240	0.000
20	0.198	17.500	0.199	17.083	0.199	17.083
40	0.190	20.833	0.190	20.833	0.189	21.250
60	0.174	27.500	0.173	27.917	0.174	27.500
80	0.162	32.500	0.162	32.500	0.162	32.500
100	0.156	35.000	0.156	35.000	0.155	35.417
120	0.139	42.083	0.138	42.500	0.138	42.500
140	0.129	46.250	0.129	46.250	0.129	46.250
160	0.109	54.583	0.109	54.583	0.109	54.583
180	0.047	80.417	0.047	80.417	0.047	80.417
200	0.019	92.083	0.019	92.083	0.018	92.500

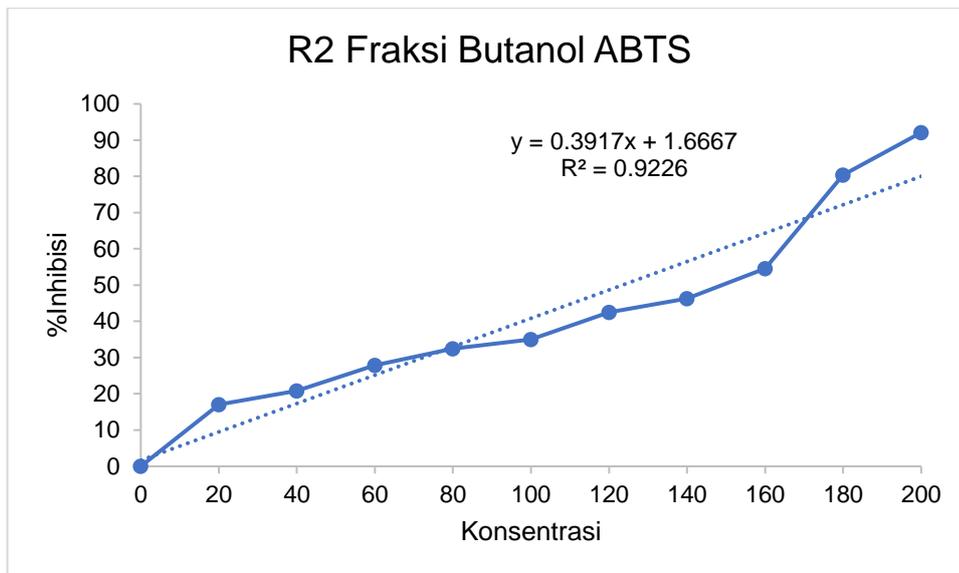


#### Nilai IC<sub>50</sub> R1 fraksi butanol metode ABTS

$$y = 0.3911x + 1.6856$$

$$50 = 0.3911x + 1.6856$$

$$x = 123.535 \text{ mg/L}$$

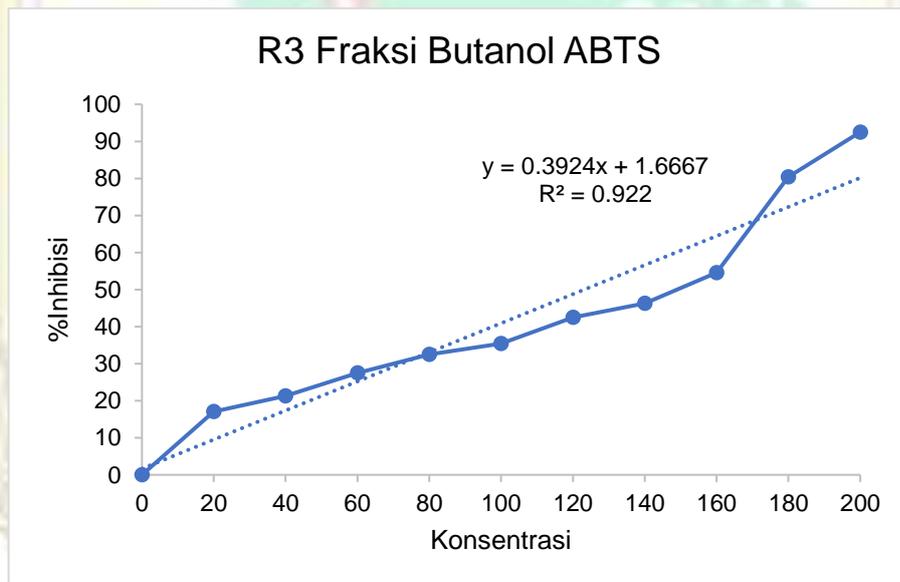


**Nilai IC<sub>50</sub> R2 fraksi butanol metode ABTS**

$y = 0.3917x + 1.6667$

$50 = 0.3917x + 1.6667$

$x = 123.394 \text{ mg/L}$



**Nilai IC<sub>50</sub> R3 fraksi butanol metode ABTS**

$y = 0.3924x + 1.6667$

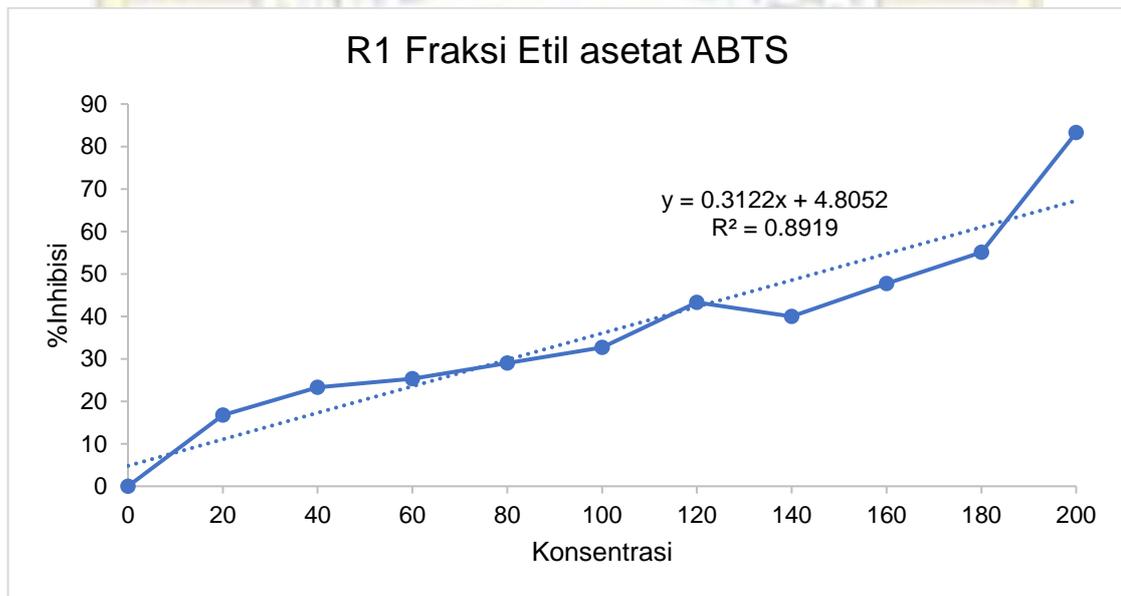
$50 = 0.3924x + 1.6667$

$x = 123.174 \text{ mg/L}$

**2. Fraksi Etil asetat**

Konsentrasi (mg/L)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.245	0.000	0.244	0.000	0.244	0.000
20	0.204	16.735	0.204	16.393	0.204	16.393

40	0.188	23.265	0.188	22.951	0.188	22.951
60	0.183	25.306	0.183	25.000	0.183	25.000
80	0.174	28.980	0.173	29.098	0.174	28.689
100	0.165	32.653	0.165	32.377	0.165	32.377
120	0.162	43.265	0.162	33.607	0.162	33.607
140	0.147	40.000	0.147	39.754	0.147	39.754
160	0.128	47.755	0.128	47.541	0.128	47.541
180	0.110	55.102	0.111	54.508	0.110	54.918
200	0.041	83.265	0.041	83.197	0.041	83.197

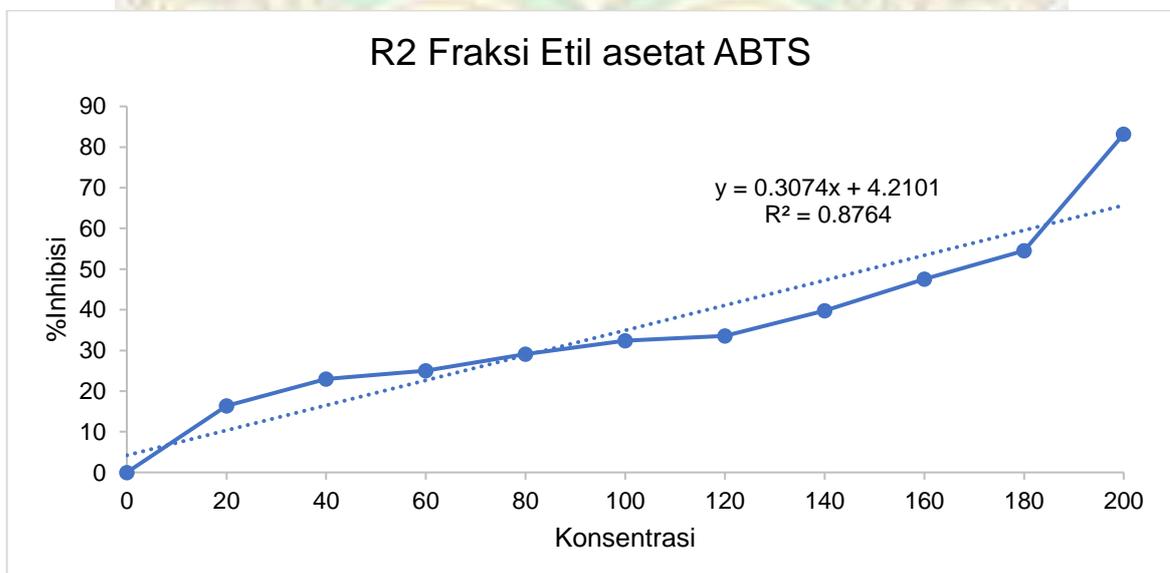


**Nilai IC<sub>50</sub> R1 fraksi etil asetat metode ABTS**

$$y = 0.3122x + 4.8052$$

$$50 = 0.3122x + 4.8052$$

$$x = 144.762 \text{ mg/L}$$

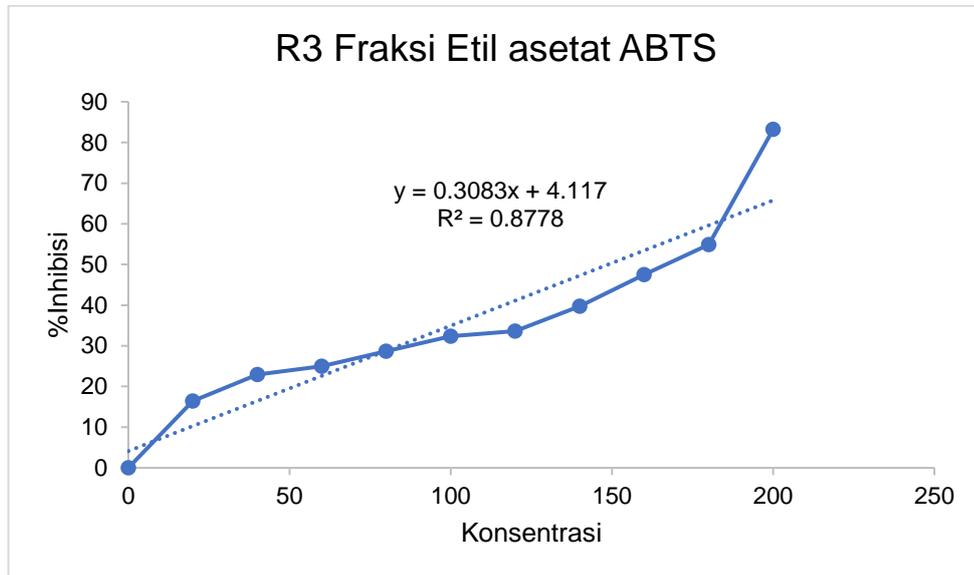


**Nilai IC<sub>50</sub> R2 fraksi etil asetat metode ABTS**

$y = 0.3074x + 4.2101$

$50 = 0.3074x + 4.2101$

$x = 148.959 \text{ mg/L}$



**Nilai IC<sub>50</sub> R3 fraksi etil asetat metode ABTS**

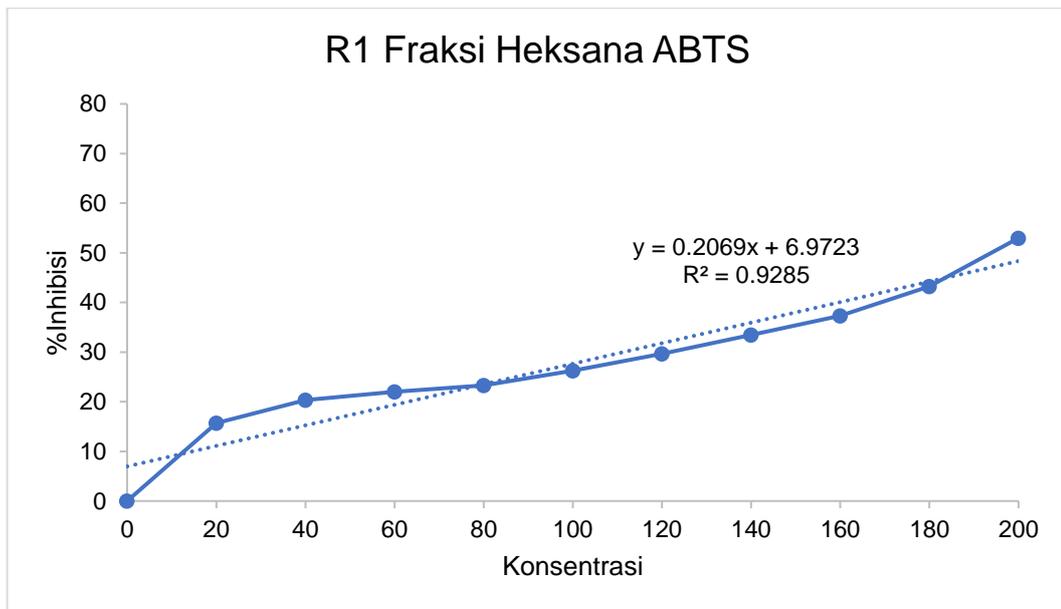
$y = 0.3083x + 4.117$

$50 = 0.3083x + 4.117$

$x = 148.826 \text{ mg/L}$

**3. Fraksi Heksana**

Konsentrasi (mg/L)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.236	0.000	0.236	0.000	0.228	0.000
20	0.199	15.678	0.199	15.678	0.198	13.158
40	0.188	20.339	0.188	20.339	0.188	17.544
60	0.184	22.034	0.184	22.034	0.184	19.298
80	0.181	23.305	0.181	23.305	0.181	20.614
100	0.174	26.271	0.174	26.271	0.173	24.123
120	0.166	29.661	0.166	29.661	0.167	26.754
140	0.157	33.475	0.157	33.475	0.157	31.140
160	0.148	37.288	0.148	37.288	0.147	35.526
180	0.134	43.220	0.134	43.220	0.134	41.228
200	0.111	52.966	0.111	52.966	0.111	51.316

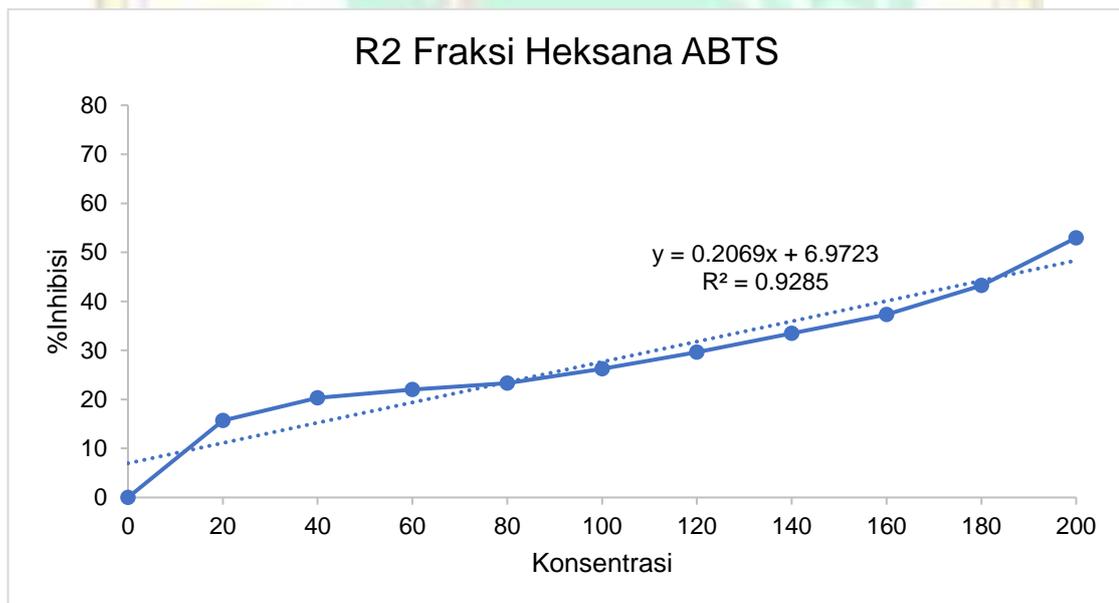


**Nilai IC<sub>50</sub> R1 fraksi heksana metode ABTS**

$$y = 0.2069x + 6.9723$$

$$50 = 0.2069x + 6.9723$$

$$x = 207.964 \text{ mg/L}$$

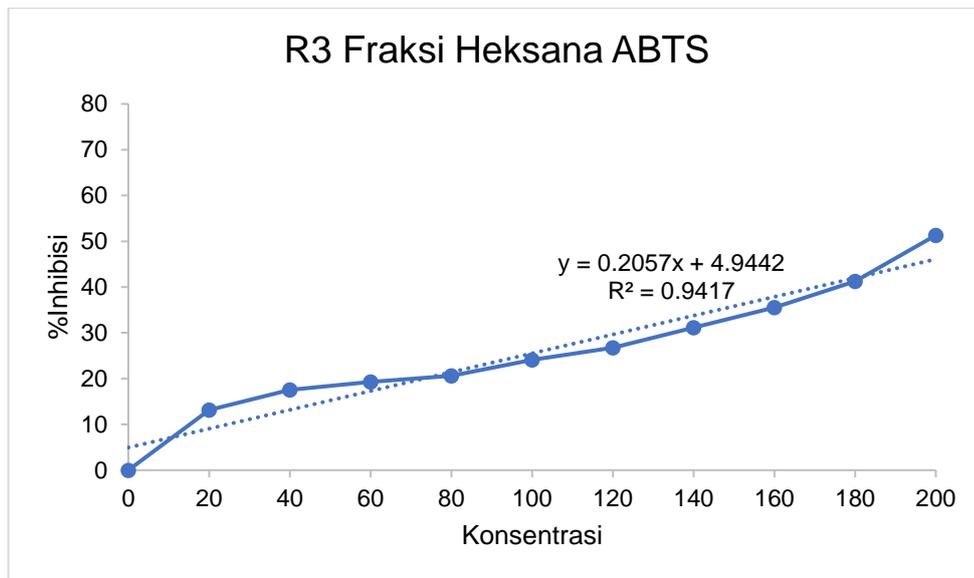


**Nilai IC<sub>50</sub> R2 fraksi heksana metode ABTS**

$$y = 0.2069x + 6.9723$$

$$50 = 0.2069x + 6.9723$$

$$x = 207.964 \text{ mg/L}$$



#### Nilai IC<sub>50</sub> R3 fraksi heksana metode ABTS

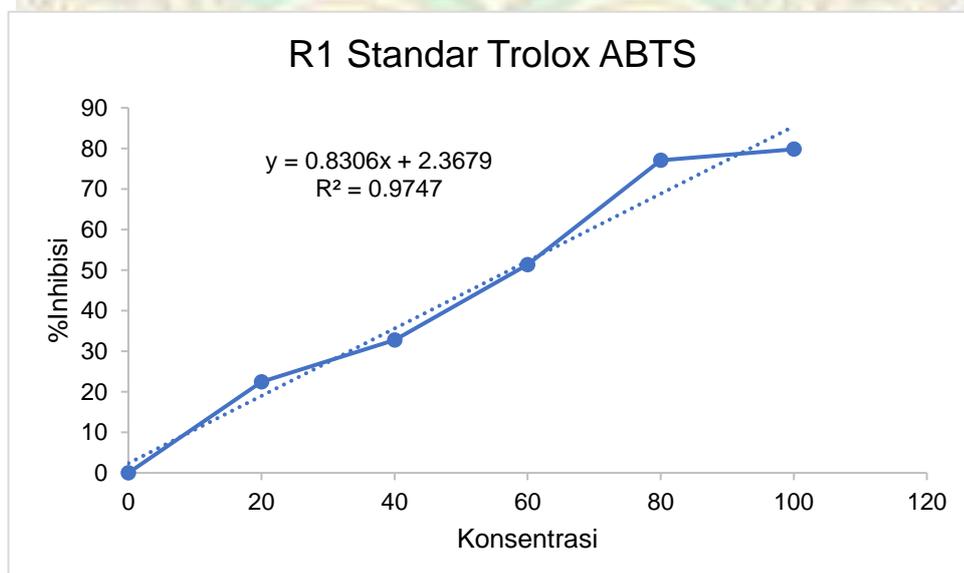
$$y = 0.2085x + 13.151$$

$$50 = 0.2085x + 13.151$$

$$x = 176.734 \text{ mg/L}$$

#### 4. Standar Trolox

Konsentrasi (ppm)	Pengulangan					
	1	%Inhibisi	2	%Inhibisi	3	%Inhibisi
0	0.183	0.000	0.183	0.000	0.183	0.000
20	0.142	22.404	0.148	19.126	0.148	19.126
40	0.123	32.787	0.123	32.787	0.123	32.787
60	0.089	51.366	0.112	38.798	0.089	51.366
80	0.042	77.049	0.042	77.049	0.042	77.049
100	0.037	79.781	0.037	79.781	0.037	79.781

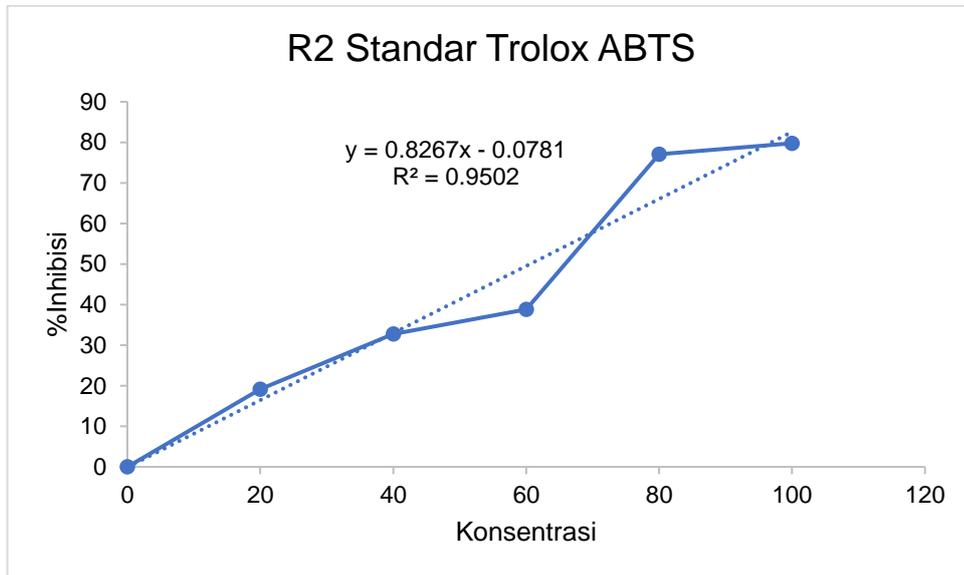


**Nilai IC<sub>50</sub> R1 standar trolox metode ABTS**

$$y = 0.8306x + 2.3679$$

$$50 = 0.8306x + 2.3679$$

$$x = 57.347 \text{ mg/L}$$

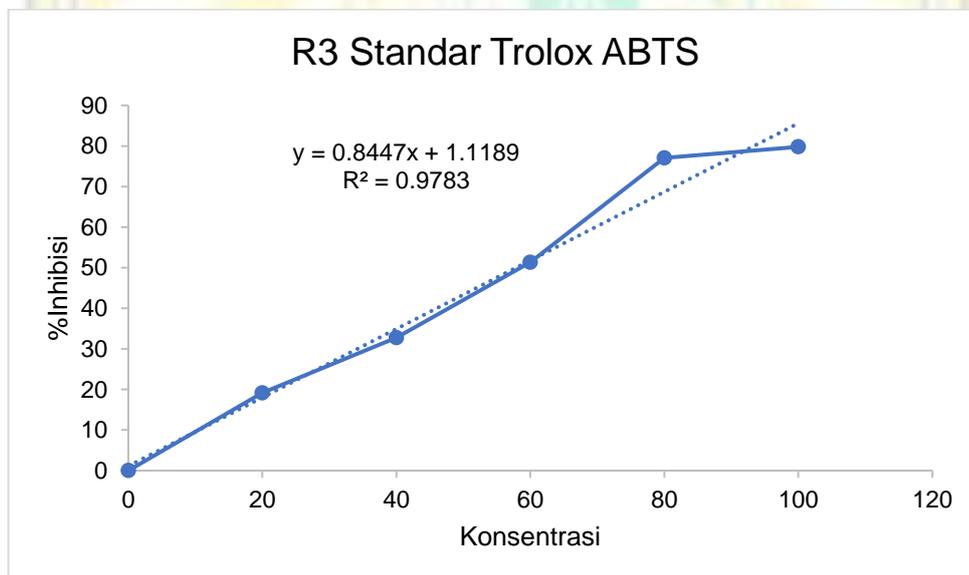


**Nilai IC<sub>50</sub> R2 standar trolox metode ABTS**

$$y = 0.8267x - 0.0781$$

$$50 = 0.8267x - 0.0781$$

$$x = 60.576 \text{ mg/L}$$



**Nilai IC<sub>50</sub> R3 standar trolox metode ABTS**

$$y = 0.8447x + 1.1189$$

$$50 = 0.8447x + 1.1189$$

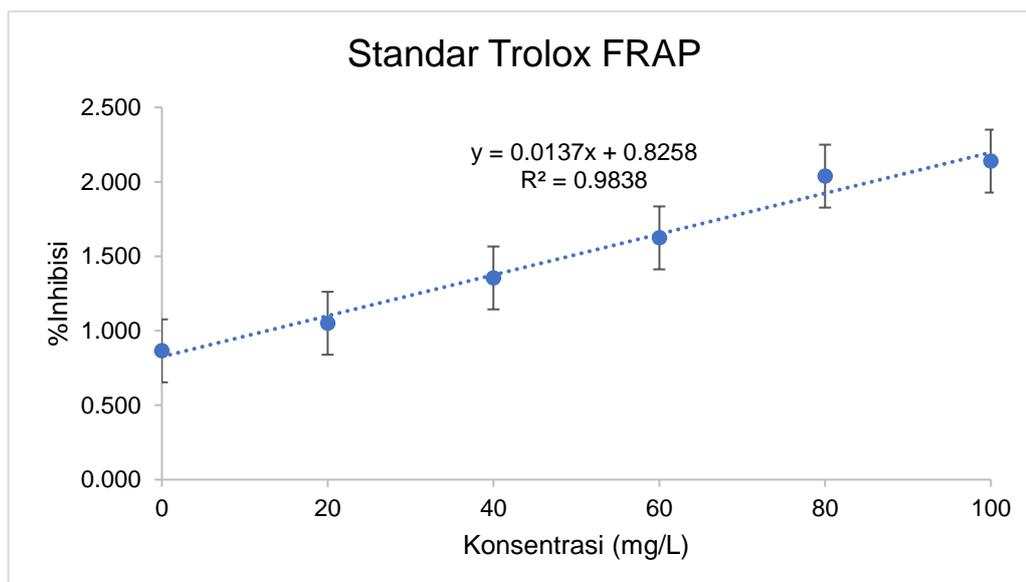
$$x = 57.868 \text{ mg/L}$$

### Hasil Data Keseluruhan Uji ABTS

Pengulangan	Fraksi			Trolox
	Butanol	Etil asetat	Heksana	
R1	123.535	144.762	207.964	57.347
R2	123.394	148.959	207.964	60.5759
R3	123.174	148.826	219.036	57.868
Mean	123.368	147.5156	211.655	58.597
SD	0.182	2.386	6.393	1.734



## Lampiran 6. Perhitungan Nilai IC<sub>50</sub> Fraksi Metode FRAP



Fraksi	1	mg TE/g	2	mg TE/g	3	mg TE/g
Butanol	1.777	69.431	1.818	72.423	1.819	72.496
Etil asetat	1.335	37.168	1.337	37.314	1.338	37.387
Heksana	1.311	37.168	1.313	35.562	1.312	35.489

### Hasil mg TE/g fraksi

Pengulangan	Fraksi		
	Butanol	Etil asetat	Heksana
R1	69.431	37.168	37.168
R2	72.423	37.314	35.562
R3	72.496	37.387	35.489
Mean	71.450	37.290	36.073
SD	1.749	0.112	0.949

**Lampiran 7. Hasil Uji ANOVA Satu Arah**

**Lampiran 7a. Hasil uji ANOVA kandungan flavonoid total (TFC)**

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Butanol	3	12.324	4.108	0.000		
Etil asetat	3	154.324	51.441	0.001		
Heksana	3	90.164	30.055	0.001		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3371.0635	2	1685.532	4740558.000	0.000	5.143
Within Groups	0.0021333	6	0.000			
Total	3371.0656	8				

**Lampiran 7b. Hasil uji ANOVA kandungan fenolik total (TPC)**

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Butanol	3	204.040	68.013	0.188		
Etil asetat	3	239.350	79.783	2.432		
Heksana	3	304.320	101.440	1.039		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1724.8862	2	862.443	707.275	0.000	5.143
Within Groups	7.3163333	6	1.219			
Total	1732.2025	8				

**Lampiran 7c. Hasil uji ANOVA aktivitas antioksidan metode DPPH**

Anova: Single Factor						
SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Butanol	3	462.129	154.043	0.066		
Etil asetat	3	507.604	169.201	0.013		
Heksana	3	462.906	154.302	0.547		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	451.8323	2	225.916	1081.131	0.000	5.143
Within Groups	1.253777	6	0.209			
Total	453.0861	8				

**Lampiran 7d. Hasil uji ANOVA aktivitas antioksidan metode ABTS**

Anova: Single Factor						
SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Butanol	3	370.103	123.3677	0.0331		
Etil asetat	3	442.547	147.5156	5.69098		
Heksana	3	592.662	197.554	325.104		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	8590.578	2.000	4295.289	38.950	0.000	5.143
Within Groups	661.657	6.000	110.276			
Total	9252.235	8.000				

Lampiran 7e. Hasil uji ANOVA aktivitas antioksidan metode FRAP

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Butanol	3	214.350	71.450	3.059		
Etil asetat	3	111.869	37.290	0.012		
Heksana	3	98.219	32.740	40.074		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2686.12	2	1343.060	93.387	0.000	5.143
Within Groups	86.2899	6	14.382			
Total	2772.41	8				

