LAMPIRAN A
CONTOH PERHITUNGAN PERSENTASE HASIL SINTESIS

I. Perhitungan berat teoritis

a. Asam Antranilat (BM : 137,14 g/mol)

Penimbangan : 13,7 gram

$$\text{mol asam antranilat} : \frac{13,7}{137,14} = 0,1 \text{ mol}$$

b. *p*-klorobenzoil klorida (BM : 175,02 g/mol, BJ : 1,377 g/cm^3)

Volume : 25,42 ml

$$\text{mol } p\text{-klorobenzoil klorida} : \frac{25,42 \times 1,377}{175,02} = 0,2 \text{ mol}$$

c. Hidrazin Hidrat (BM : 50,05 g/mol, BJ : 1,03 g/cm^3)

Volume : 2,43 ml

$$\text{mol hidrazin hidrat} : \frac{2,43 \times 1,03}{50,05} = 0,05 \text{ mol}$$

d. Benzaldehida (BM : 106,12 g/mol, BJ : 1,05 g/cm^3)

Volume : 2,03 ml

$$\text{mol benzaldehida} : \frac{2,03 \times 1,05}{106,12} = 0,02 \text{ mol}$$

II. Perhitungan persentase hasil sintesis berdasarkan mol teoritis

Persentase hasil 3-benzilidenamino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on :

$$C_{14}H_{10}N_3OCl + C_7H_6O \rightarrow C_{21}H_{14}N_3OCl$$

Awal	0,01 mol	0,02 mol	
Reaksi	0,01 mol	0,01 mol	0,01 mol
Akhir	-	0,01 mol	0,01 mol

Replikasi I : Berat yang didapat = 2,66 gram

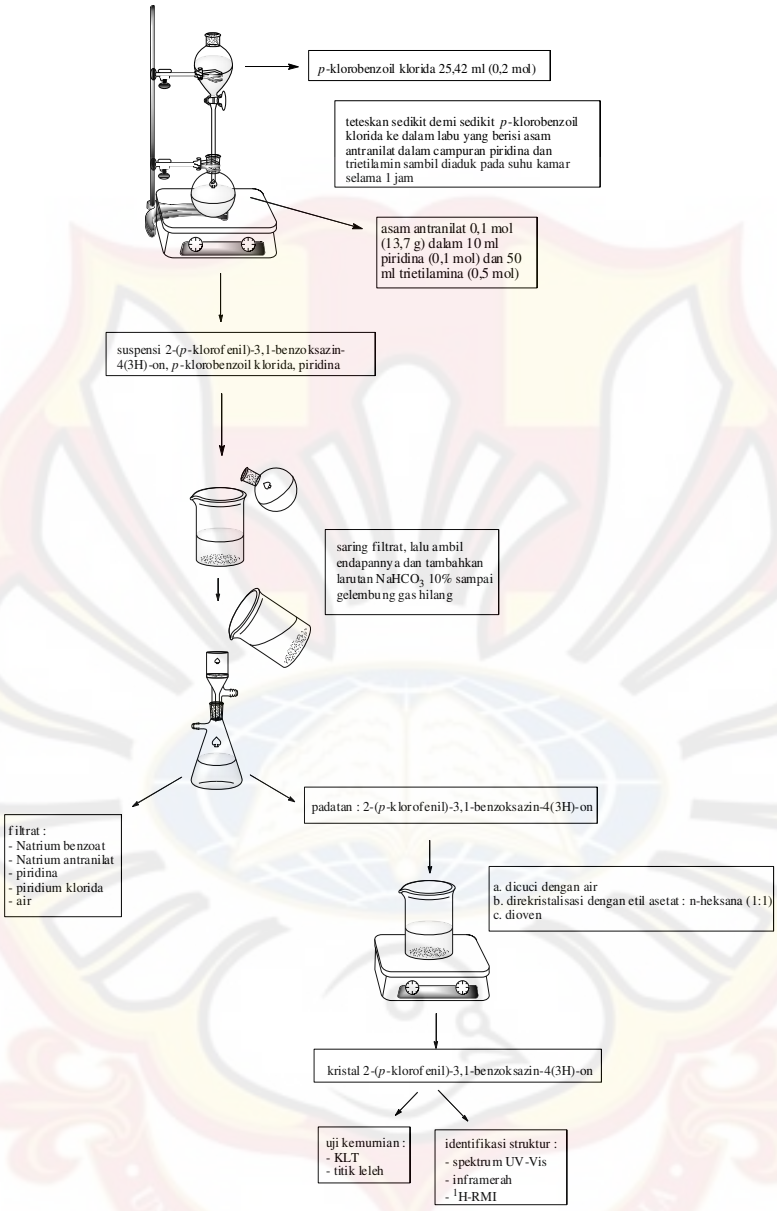
mol yang didapat = $\frac{2,66}{359} = 0,74$ mol

mol teoritis = 0,01 mol =10 mmol

Persentase hasil= $\frac{0,74}{10} \times 100\% = 74\ \%$

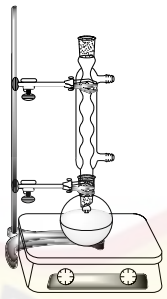
LAMPIRAN B

SKEMA KERJA SINTESIS 2-(*p*-KLOROFENIL)-4*H*-3,1-BENZOKSAZIN-4-ON



LAMPIRAN C

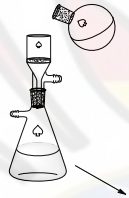
SKEMA KERJA 3-AMINO-2-(*p*-KLOROFENIL)KUINAZOLIN-4(3*H*)-ON



2-(*p*-klorofenil)-3,1-benzoksazin-4(3H)-on 12,88 g (0,05 mol) ditambah hidrazin hidrat 5 ml (0,1 mol) dalam 100 ml etanol, lalu direfluks dan diaduk selama 5 jam

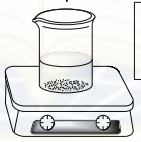
diamkan sampai dingin

suspensi 3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on, hidrazin, air, dan etanol



filtrat :
- hidrazin
- air
- etanol

padatan : 3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on



a. dicuci dengan air
b. direkristalisasi dengan etanol
c. dioven

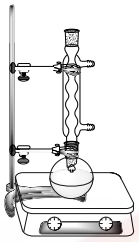
kristal 3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

uji kemurnian :
- KLT
- titik leleh

identifikasi struktur :
- spektrum UV-Vis
- inframerah
- ^{1}H-RMI

LAMPIRAN D

SKEMA KERJA 3-BENZILIDENAMINO-2-(*p*-KLOROFENIL)KUINAZOLIN-4(3*H*)-ON



3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on 3,07 g (0,01 mol) ditambah benzaldehida 2,03 ml (0,02 mol) dalam 40 ml etanol dan 2 tetes HCl pekat lalu diaduk selama 1 jam

suspensi disaring lalu ditambah larutan $NaHCO_3$ 10% sampai gelembung gas hilang

suspensi 3-benzilidenamino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on, benzaldehid, air, dan etanol

filtrat :
- hidrazin
- air
- etanol

padatan : 3-benzilidenamino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

a. dicuci dengan air
b. direkristalisasi dengan etanol
c. dioven

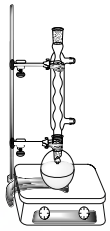
kristal 3-benzilidenamino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

uji kemurnian :
- KLT
- titik leleh

identifikasi struktur :
- spektrum UV-Vis
- inframerah
- ^{1}H-RMI

LAMPIRAN E

SKEMA KERJA 3-(3,4-METILENDIOKSIBENZILIDENAMINO)-2-(*p*-KLOROFENIL)KUINAZOLIN-4(3*H*)-ON



3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on 3,07 g (0,01 mol) ditambah 3,4-metilendioksibenzaldehida 3,00 g (0,02 mol) dalam 40 ml etanol dan 2 tetes HCl pekat, lalu diaduk selama 1 jam

suspensi disaring lalu ditambah larutan $NaHCO_3$ 10% sampai gelembung gas hilang

suspensi 3-(3,4-metilendioksibenzilidenamino)-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on, 3,4-metilendioksibenzaldehida, air, dan etanol

filtrat :
- hidrazin
- air
- etanol

padatan 3-(3,4-metilendioksibenzilidenamino)-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

a. dicuci dengan air
b. direkristalisasi dengan etanol
c. dioven

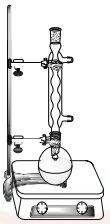
kristal 3-(3,4-metilendioksibenzilidenamino)-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

uji kemurnian :
- KLT
- titik leleh

identifikasi struktur :
- spektrum UV-Vis
- inframerah
- ^{1}H-RMI

LAMPIRAN F

SKEMA KERJA
3-(3,4-DIMETOKSIBENZILIDENAMINO)-2-(*p*-KLOROFENIL)KUINAZOLIN-4(3*H*)-ON



3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on 3,07 g (0,01 mol) ditambah 3,4-dimetoksibenzaldehida 3,32 g (0,02 mol) dalam 40 ml etanol dan 2 tetes HCl pekat, lalu diaduk selama 1 jam

suspensi disaring lalu ditambah larutan $NaHCO_3$ 10% sampai gelembung gas hilang

suspensi 3-(3,4-dimetoksibenzilidenamino)-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on, 3,4-dimetoksibenzaldehid, air, dan etanol

filtrat :
- hidrazin
- air
- etanol

padatan 3-(3,4-dimetoksibenzilidenamino)-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

a. dicuci dengan air
b. direkristalisasi dengan etanol
c. dioven

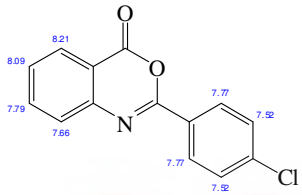
kristal 3-(3,4-dimetoksibenzilidenamino)-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on

uji kemurnian :
- KLT
- titik leleh

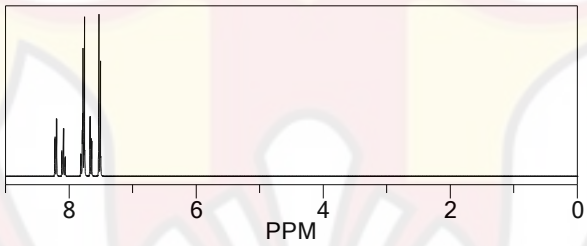
identifikasi struktur :
- spektrum UV-Vis
- inframerah
- ^{1}H-RMI

LAMPIRAN G

ESTIMASI SPEKTRUM ^{1}H-RMI 2-(*P*-KLOROFENIL)-3,1-BENZOKSAZIN-4(3*H*)-ON



Estimation quality is indicated by color: good, medium, rough

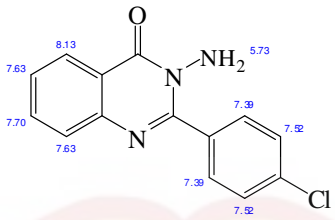


Protocol of the H-1 NMR Prediction:

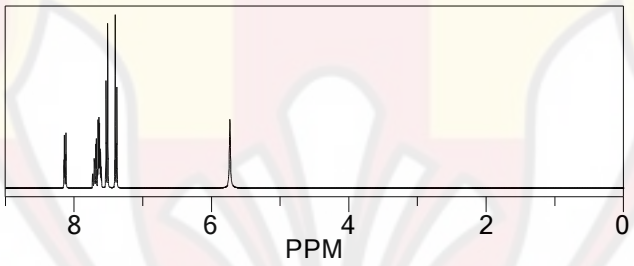
Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
CH	7.52	7.29	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH	7.66	7.26	1-benzene
		?	1 unknown substituent(s)
		0.21	1 -C(=O)O
		0.19	general corrections
CH	8.21	7.26	1-benzene
		?	1 unknown substituent(s)
		0.87	1 -C(=O)O
		0.08	general corrections
CH	7.77	7.62	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		0.21	general corrections
CH	7.52	7.29	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH	7.77	7.62	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		0.21	general corrections
CH	7.79	7.26	1-benzene
		?	1 unknown substituent(s)
		0.34	1 -C(=O)O
		0.19	general corrections
CH	8.09	7.26	1-benzene
		?	1 unknown substituent(s)
		0.21	1 -C(=O)O
		0.62	general corrections

LAMPIRAN H

ESTIMASI SPEKTRUM ^{1}H-RMI 3-AMINO-2-(*P*-KLOROFENIL) KUINAZOLIN-4(3*H*)-ON



Estimation quality is indicated by color: good, medium, rough

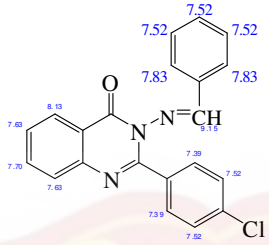


Protocol of the H-1 NMR Prediction:

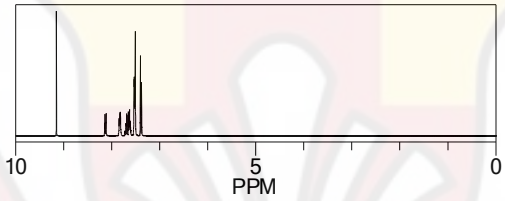
Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
NH2	5.73	2.00	amine
		3.73	general corrections
CH	7.52	7.29	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH	7.63	7.26	1-benzene
		?	1 unknown substituent(s)
		0.18	1 -C(=O)N
		0.19	general corrections
CH	8.13	7.26	1-benzene
		?	1 unknown substituent(s)
		0.69	1 -C(=O)N
		0.18	general corrections
CH	7.39	7.62	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		-0.17	general corrections
CH	7.52	7.29	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH	7.39	7.62	benzylidenimin
		0.00	1 -1:C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		-0.17	general corrections
CH	7.70	7.26	1-benzene
		?	1 unknown substituent(s)
		0.25	1 -C(=O)N
		0.19	general corrections
CH	7.63	7.26	1-benzene
		?	1 unknown substituent(s)
		0.18	1 -C(=O)N
		0.19	general corrections

LAMPIRAN I

ESTIMASI SPEKTRUM ^{1}H-RMI 3-BENZILIDENAMINO-2-(*P*-KLORFENIL)KUINAZOLIN-4(3*H*)-ON



Estimation quality is indicated by color: good, medium, rough

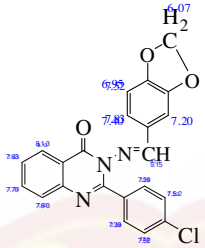


Protocol of the H-1 NMR Prediction:

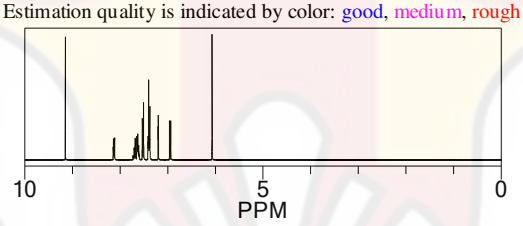
Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
CH	7.52	7.29	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general correct ions
CH	7.63	7.26	1-benzene
		?	1 unknown substituent(s)
		0.18	1 -C(=O)N
		0.19	general correct ions
CH	8.13	7.26	1-benzene
		?	1 unknown substituent(s)
		0.69	1 -C(=O)N
		0.18	general correct ions
CH	7.39	7.62	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		-0.17	general correct ions
CH	7.83	7.62	benzylidenimin
		?	1 unknown substituent(s)
		0.21	general correct ions
CH	7.52	7.29	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general correct ions
CH	7.39	7.62	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		-0.17	general correct ions
CH	7.83	7.62	benzylidenimin
		?	1 unknown substituent(s)
		0.21	general correct ions
CH	7.52	7.29	benzylidenimin
		?	1 unknown substituent(s)
		0.23	general correct ions
CH	7.70	7.26	1-benzene
		?	1 unknown substituent(s)
		0.25	1 -C(=O)N
		0.19	general correct ions
CH	7.63	7.26	1-benzene
		?	1 unknown substituent(s)
		0.18	1 -C(=O)N
		0.19	general correct ions
CH	7.52	7.29	benzylidenimin
		?	1 unknown substituent(s)
		0.23	general correct ions
CH	7.52	7.29	benzylidenimin
		?	1 unknown substituent(s)
		0.23	general correct ions
CH	9.15	8.11	benzylidenimin
		?	1 unknown substituent(s)
		1.04	general correct ions

LAMPIRAN J

ESTIMASI SPEKTRUM ^{1}H-RMI 3-(3,4-METILENDIOKSIBEN-ZILIDENAMINO)-2-(*P*-KLOROFENIL)KUINAZOLIN-4(3*H*)-ON



Estimation quality is indicated by color: good, medium, rough

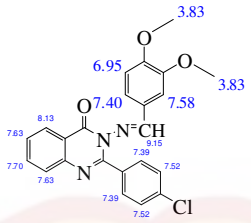


Protocol of the H-1 NMR Prediction:

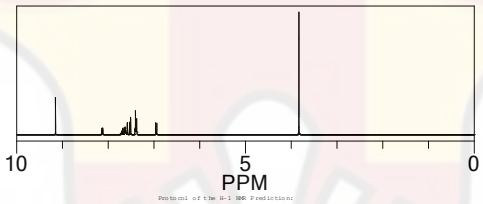
Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
CH2 4.87		5.40	1,3-dioxole
		0.17	general corrections
CH 7.20		7.62	benzylidenimin
		7	1 unknown substituent(s)
		-0.49	1 -O-C from 1-benzene
		-0.11	1 -O-C from 1-benzene
		0.18	general corrections
CH 6.86		7.29	benzylidenimin
		7	1 unknown substituent(s)
		-0.11	1 -O-C from 1-benzene
		-0.49	1 -O-C from 1-benzene
		0.26	general corrections
CH 7.52		7.29	benzylidenimin
		0.00	1 -1c:C:C:C:C:C:C:1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH 7.63		7.26	1-benzene
		7	1 unknown substituent(s)
		0.18	1 -C:1=O:N
		0.19	general corrections
CH 7.40		7.62	benzylidenimin
		7	1 unknown substituent(s)
		-0.46	1 -O-C from 1-benzene
		-0.11	1 -O-C from 1-benzene
		0.33	general corrections
CH 8.13		7.26	1-benzene
		7	1 unknown substituent(s)
		0.49	1 -C:1=O:N
		0.18	general corrections
CH 7.39		7.62	benzylidenimin
		0.00	1 -1c:C:C:C:C:C:C:1
		-0.06	1 -Cl from 1-benzene
		-0.17	general corrections
CH 7.52		7.29	benzylidenimin
		0.00	1 -1c:C:C:C:C:C:C:1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH 7.39		7.62	benzylidenimin
		0.00	1 -1c:C:C:C:C:C:C:1
		-0.06	1 -Cl from 1-benzene
		-0.17	general corrections
CH 7.70		7.26	1-benzene
		7	1 unknown substituent(s)
		0.25	1 -C:1=O:N
		0.19	general corrections
CH 7.63		7.26	1-benzene
		7	1 unknown substituent(s)
		0.18	1 -C:1=O:N
		0.19	general corrections
CH 9.15		8.11	benzylidenimin
		7	1 unknown substituent(s)
		1.04	general corrections

LAMPIRAN K

ESTIMASI SPEKTRUM ^{1}H-RMI 3-(3,4-DIMETOKSIBENZI-LIDENAMINO)-2-(*P*-KLOROFENIL)KUINAZOLIN-4(3*H*)-ON



Estimation quality is indicated by color: good, medium, rough



Protocol of the H-1 NMR Prediction:

Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
CH	7.52	7.29	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH	7.63	7.26	1-benzene
		7	1 unknown substituents)
		0.18	1 -C(=O)H
		0.19	general corrections
CH	8.13	7.26	1-benzene
		7	1 unknown substituents)
		0.69	1 -C(=O)H
		0.18	general corrections
CH	7.39	7.62	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		-0.17	general corrections
CH	7.58	7.62	benzylidenimin
		7	1 unknown substituents)
		-0.49	1 -O-C from 1-benzene
		-0.11	1 -O-C from 1-benzene
		0.56	general corrections
CH	7.52	7.29	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		0.01	1 -Cl from 1-benzene
		0.22	general corrections
CH	6.95	7.29	benzylidenimin
		7	1 unknown substituents)
		-0.11	1 -O-C from 1-benzene
		-0.49	1 -O-C from 1-benzene
		0.26	general corrections
CH	7.39	7.62	benzylidenimin
		0.00	1 -1: C*C*C*C*C*C*1
		-0.06	1 -Cl from 1-benzene
		-0.17	general corrections
CH	7.40	7.62	benzylidenimin
		7	1 unknown substituents)
		-0.44	1 -O-C from 1-benzene
		-0.11	1 -O-C from 1-benzene
		0.53	general corrections
CH	7.70	7.26	1-benzene
		7	1 unknown substituents)
		0.25	1 -C(=O)H
		0.19	general corrections
CH	7.63	7.26	1-benzene
		7	1 unknown substituents)
		0.18	1 -C(=O)H
		0.19	general corrections
CH3	3.83	0.86	methyl
		2.87	1 alpha -O-1: C*C*C*C*C*C*1
		0.10	general corrections
CH3	3.83	0.86	methyl
		2.87	1 alpha -O-1: C*C*C*C*C*C*1
		0.10	general corrections
CH	9.15	8.11	benzylidenimin
		7	1 unknown substituents)
		1.04	general corrections

LAMPIRAN L
DATA UJI T

3-(3,4-metilendioksibenzilidenamino)-2-(p-klorofenil)kuinazolin-4(3H) on dan 3-benzilidenamino-2-(p-klorofenil)kuinazolin-4(3H)-on

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	72.88666667	76.9
Variance	2.036633333	3.0919
Observations	3	3
Pearson Correlation	0.792800445	
Hypothesized Mean Difference	0	
df	2	
t Stat	-6.483151729	
P(T<=t) one-tail	0.011487533	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.022975066	
t Critical two-tail	4.30265273	

3-(3,4-dimetoksibenzilidenamino)-2-(p-klorofenil) kuinazolin -4(3H)-on dan 3-benzilidenamino-2-(p-klorofenil)kuinazolin-4(3H)-on

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	72.88666667	81.74666667
Variance	2.036633333	0.701633333
Observations	3	3
Pearson Correlation	-0.988891878	
Hypothesized Mean Difference	0	
df	2	
t Stat	-6.793644896	
P(T<=t) one-tail	0.010493552	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.020987104	
t Critical two-tail	4.30265273	

LAMPIRAN M

DATA OPTIMASI METODE SINTESIS

Tabel Rf hasil optimasi senyawa 2-(p-klorofenil)-3,1-benzoksazin-4(3H)-on.

	Harga Rf
Asam antranilat	0,48
p-klorobenzoil klorida	0,30
Sampel menit ke-30	0,48 & 0,30
Sampel menit ke-45	0,48 & 0,30
Sampel menit ke-60	0,79 & 0,30
Sampel menit ke-75	0,79 & 0,30

Tabel Rf hasil optimasi senyawa 3-amino-2-(p-klorofenil)kuinazolin-4(3H)-on.

	Harga Rf
2-(*p*-klorofenil)-3,1-benzoksazin-4(3*H*)-on	0,71
Sampel jam ke-1	0,70
Sampel jam ke-2	0,71
Sampel jam ke-3	0,71
Sampel jam ke-4	0,70
Sampel jam ke 5	0,38

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Tabel Rf hasil optimasi senyawa 3-benzilidenamino-2-(p-klorofenil)kuinazolin-4(3H)-on

	Harga Rf
3-amino-2-(*p*-klorofenil)kuinazolin-4(3*H*)-on	0,71
Benzaldehida	0,74
Sampel menit ke-30	0,71 & 0,74
Sampel menit ke-45	0,70 & 0,74
Sampel menit ke-60	0,71 & 0,74
Sampel menit ke-75	0,81 & 0,74