LAMPIRAN A

CONTOH PERHITUNGAN PERSENTASE HASIL SINTESIS

I. Perhitungan berat teoritis

a. Ammonium tiosianat (BM : 76,12 g/mol)

Penimbangan : 1,14 gram

mmol ammonium tiosianat :

$$\frac{1{,}14}{76{,}12} \times 1000 = 14{,}98 \text{ mmol} \cong 15 \text{ mmol}$$

b. 2-klorobenzoil klorida (BM : 175,01 g/mol, berat jenis : 1,378 g/cm^3)

Volume : 1,3 ml

mmol 2-klorobenzoil klorida :

$$\frac{1{,}3 \times 1{,}38}{175{,}01} \times 1000 = 10{,}2 \text{ mmol} \approx 10 \text{ mmol}$$

c. Anilin (BM : 93,13 g/mol, berat jenis : 1,02 g/cm^3)

Volume : 0,9 ml

mmol anilin :

$$\frac{0{,}9 \times 1{,}02}{93{,}13} \times 1000 = 9{,}9 \text{ mmol} \approx 10 \text{ mmol}$$

II. Perhitungan persentase hasil sintesis berdasarkan mmol teoritis

Persentase hasil N-fenil-N'-2-klorobenzoiltiourea :

ammonium tiosianat + 2-klorobenzoil klorida →				2-klorobenzoilisotiosianat + NH_4Cl	
awal	15 mmol	10 mmol		0	0
reaksi	10 mmol	10 mmol	-	10 mmol	10 mmol
sisa	5 mmol	0		10 mmol	10 mmol

2-klorobenzoilisotiosianat +	anilin →		N-fenil-N'-2-klorobenzoiltiourea
Awal	10 mmol	10 mmol	0
Reaksi	10 mmol	10 mmol -	10 mmol +
Sisa	0	0	10 mmol

BM teoritis = 290,5

Massa teoritis = 10 mmol x 290,5 = 2,91 gram

Massa praktis = 1,98 gram

% hasil = $\frac{1,98}{2,91}$ x 100% = 68,04 % ≈ 68 %

LAMPIRAN B

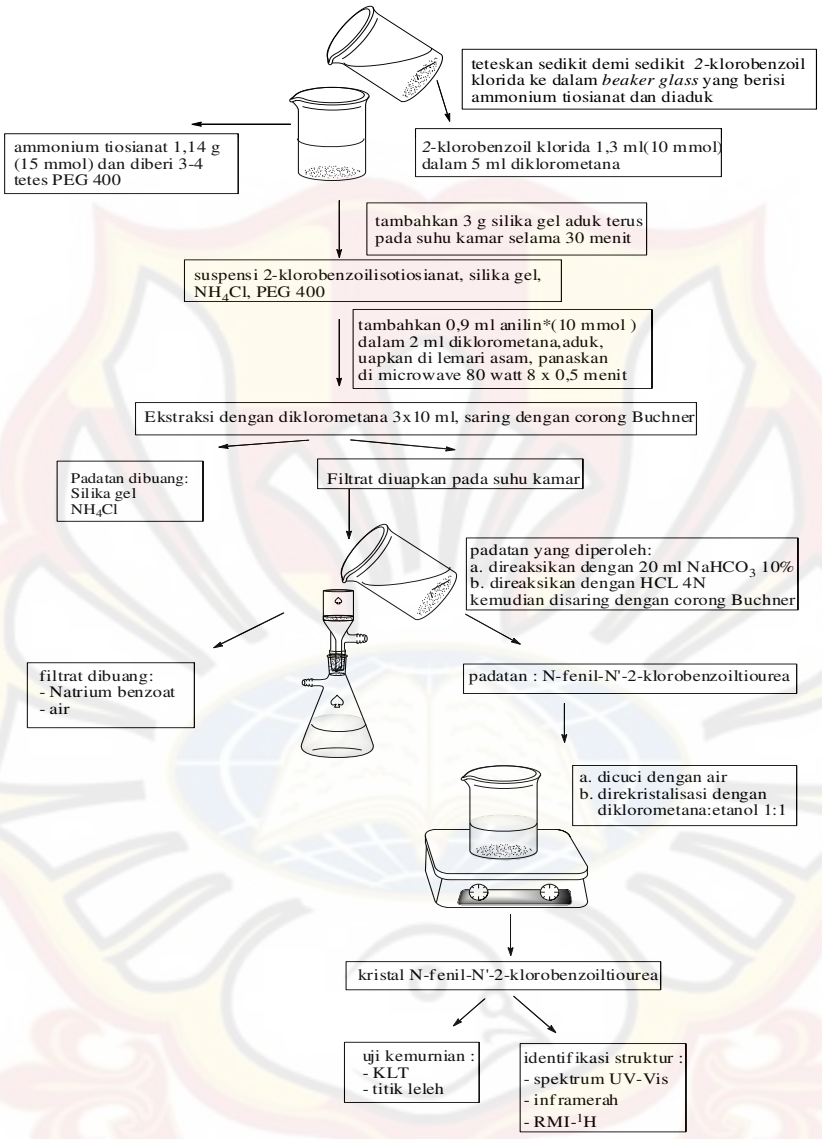
PERHITUNGAN UJI T

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	68	72.6666667
Variance	1	4.33333333
Observations	3	3
Pearson Correlation	-0.720577	
Hypothesized Mean Difference	0	
df	2	
t Stat	-2.8	
P(T<=t) one-tail	0.0536963	
t Critical one-tail	2.9199856	
P(T<=t) two-tail	0.1073926	
t Critical two-tail	4.3026527	

LAMPIRAN C

SKEMA KERJA SINTESIS TURUNAN N-FENIL-N'-2-KLOROBENZOILTIOUREA



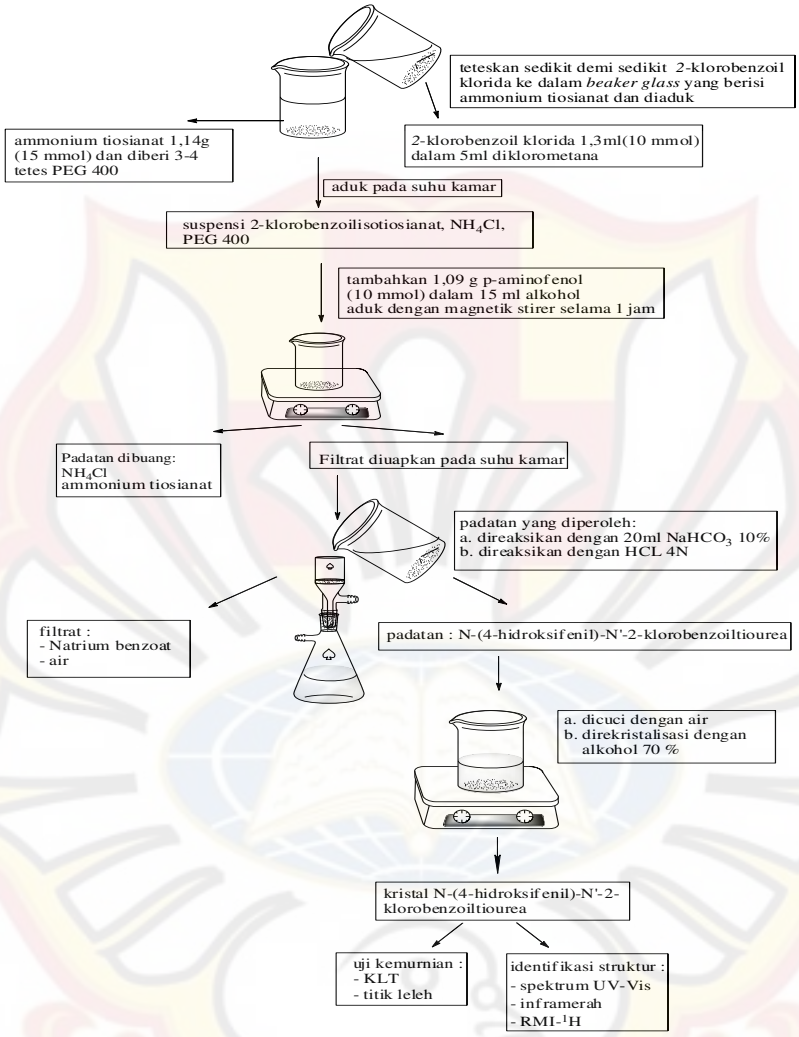
Keterangan *:

Sintesis N-(4-hidroksifenil)-N'-2-klorobenzoiltiourea: 1,09 g (10 mmol) *p*-hidroksianilin

Sintesis N-(4-metoksifenil)-N'-2-klorobenzoiltiourea: 1,21 g (10 mmol) *p*-anisidin

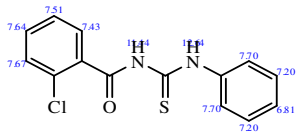
LAMPIRAN D

SKEMA KERJA SINTESIS N-(4-HIDROKSIFENIL)-N'-2-KLOROBENZOILTIOUREA DENGAN METODE TANPA PEMANASAN

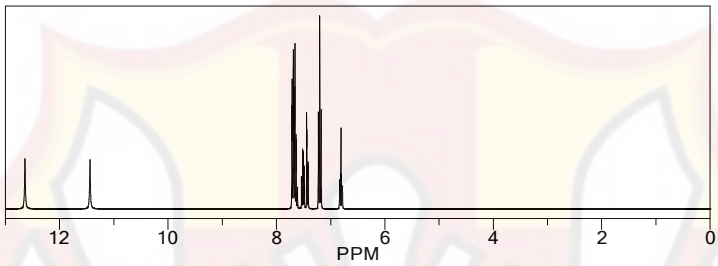


LAMPIRAN E

ESTIMASI RMI-^{1}H N-FENIL-N'-2-KLOROBENZOILTIOUREA



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

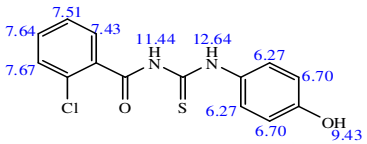


Protocol of the H-1 NMR Prediction:

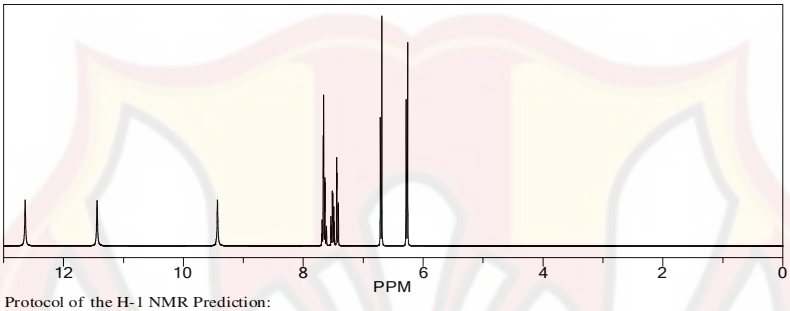
Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
NH	12.64	4.00	aromatic C-NH
		8.64	general corrections
NH	11.44	8.00	sec. amide
		3.44	general corrections
CH	7.67	7.26	1-benzene
		0.01	1 -Cl
		0.18	1 -C(=O)N
		0.22	general corrections
CH	7.70	7.26	1-benzene
		-0.80	1 -N
		1.24	general corrections
CH	7.43	7.26	1-benzene
		-0.06	1 -Cl
		0.69	1 -C(=O)N
		-0.46	general corrections
CH	7.70	7.26	1-benzene
		-0.80	1 -N
		1.24	general corrections
CH	7.20	7.26	1-benzene
		-0.25	1 -N
		0.19	general corrections
CH	7.64	7.26	1-benzene
		-0.06	1 -Cl
		0.25	1 -C(=O)N
		0.19	general corrections
CH	7.20	7.26	1-benzene
		-0.25	1 -N
		0.19	general corrections
CH	7.51	7.26	1-benzene
		-0.12	1 -Cl
		0.18	1 -C(=O)N
		0.19	general corrections
CH	6.81	7.26	1-benzene
		-0.64	1 -N
		0.19	general corrections

LAMPIRAN F

ESTIMASI RMI-^{1}H N-(4-HIDROKSIFENIL)-N'-2-KLOROBENZOILTIOUREA



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

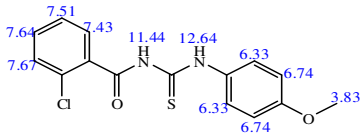


Protocol of the H-1 NMR Prediction:

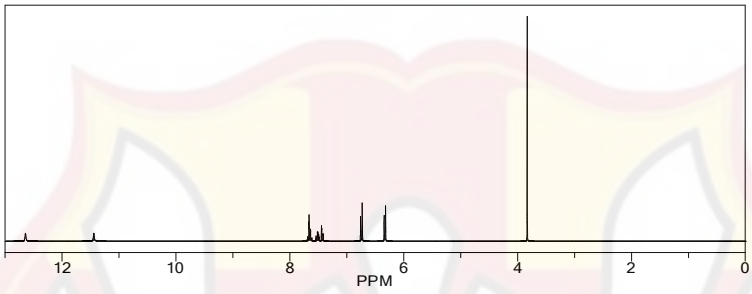
Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
OH	9.43	5.00	aromatic C-OH
		4.43	general corrections
NH	12.64	4.00	aromatic C-NH
		8.64	general corrections
NH	11.44	8.00	sec. amide
		3.44	general corrections
CH	7.67	7.26	1-benzene
		0.01	1 -Cl
		0.18	1 -C(=O)N
		0.22	general corrections
CH	6.70	7.26	1-benzene
		-0.53	1 -O
		-0.25	1 -N
		0.22	general corrections
CH	6.27	7.26	1-benzene
		-0.17	1 -O
		-0.80	1 -N
		-0.02	general corrections
CH	7.43	7.26	1-benzene
		-0.06	1 -Cl
		0.69	1 -C(=O)N
		-0.46	general corrections
CH	6.70	7.26	1-benzene
		-0.53	1 -O
		-0.25	1 -N
		0.22	general corrections
CH	6.27	7.26	1-benzene
		-0.17	1 -O
		-0.80	1 -N
		-0.02	general corrections
CH	7.64	7.26	1-benzene
		-0.06	1 -Cl
		0.25	1 -C(=O)N
		0.19	general corrections
CH	7.51	7.26	1-benzene
		-0.12	1 -Cl
		0.18	1 -C(=O)N
		0.19	general corrections

LAMPIRAN G

ESTIMASI RMI-^{1}H N-(4-METOKSIFENIL)-N'-2-KLOROBENZOILTIOUREA



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



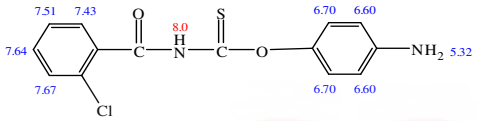
Protocol of the H-1 NMR Prediction:

Node	Shift	Base + Inc.	Comment (ppm rel. to TMS)
NH	12.64	4.00	aromatic C-NH
		8.64	general corrections
NH	11.44	8.00	sec. amide
		3.44	general corrections
CH	7.67	7.26	1-benzene
		0.01	1 -Cl
		0.18	1 -C(=O)N
		0.22	general corrections
CH	6.74	7.26	1-benzene
		-0.49	1 -O-C
		-0.25	1 -N
		0.22	general corrections
CH	6.33	7.26	1-benzene
		-0.11	1 -O-C
		-0.80	1 -N
		-0.02	general corrections
CH	7.43	7.26	1-benzene
		-0.06	1 -Cl
		0.69	1 -C(=O)N
		-0.46	general corrections
CH	6.74	7.26	1-benzene
		-0.49	1 -O-C
		-0.25	1 -N
		0.22	general corrections
CH	6.33	7.26	1-benzene
		-0.11	1 -O-C
		-0.80	1 -N
		-0.02	general corrections
CH	7.64	7.26	1-benzene
		-0.06	1 -Cl
		0.25	1 -C(=O)N
		0.19	general corrections
CH	7.51	7.26	1-benzene
		-0.12	1 -Cl
		0.18	1 -C(=O)N
		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

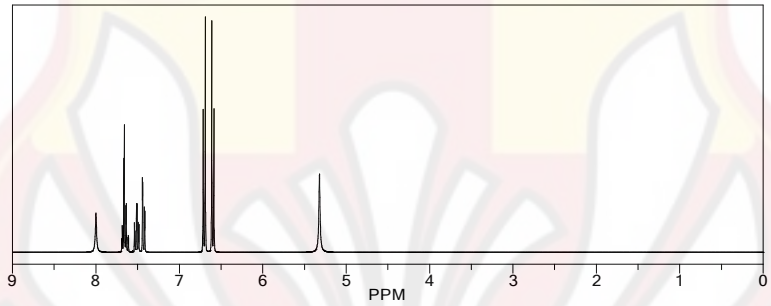
LAMPIRAN H

ESTIMASI RMI-^{1}H O-4-AMINOFENIL-2-KLOROBENZOILKARBAMOTIOAT

ChemNMR ^{1}H Estimation



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	5.32	4.00	aromatic C-NH
		1.32	general corrections
NH	8.0	8.00	sec. amide
CH	6.70	7.26	1-benzene
		-0.53	1 -O
		-0.25	1 -N
		0.22	general corrections
CH	6.60	7.26	1-benzene
		-0.17	1 -O
		-0.80	1 -N
		0.31	general corrections
CH	7.67	7.26	1-benzene
		0.01	1 -Cl
		0.18	1 -C(=O)N
		0.22	general corrections
CH	6.70	7.26	1-benzene
		-0.53	1 -O
		-0.25	1 -N
		0.22	general corrections
CH	6.60	7.26	1-benzene
		-0.17	1 -O
		-0.80	1 -N
		0.31	general corrections
CH	7.43	7.26	1-benzene
		-0.06	1 -Cl
		0.69	1 -C(=O)N
		-0.46	general corrections
CH	7.64	7.26	1-benzene
		-0.06	1 -Cl
		0.25	1 -C(=O)N
		0.19	general corrections
CH	7.51	7.26	1-benzene
		-0.12	1 -Cl
		0.18	1 -C(=O)N
		0.19	general corrections

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