LAMPIRAN A.

PERHITUNGAN PERSENTASE HASIL SINTESIS

Reaksi:

Piroksikam + 4-fluorobenzoil klorida → O-(4-fluorobenzoil)piroksikam

M :	0,010 mol	0,017 mol	-
B :	0,010 mol	0,010 mol	0,010 mol
S :	-	0,007 mol	0,010 mol

BM O-(4-fluorobenzoil)piroksikam = 453,44

Berat teoritis O-(4-fluorobenzoil)piroksikam = 0,010 mol × 453,44

= 4.53 gram

Hasil O-(4-fluorobenzoil)piroksikam yang didapat = 1,983 gram

$$\text{Jadi, persentase hasil} = \frac{\text{Berat senyawa hasil sintesis}}{\text{Berat senyawa secara teoritis}} \times 100\%$$

$$= \frac{1{,}983}{4{,}53} \times 100\%$$

$$= 43{,}77\ \%$$

LAMPIRAN B.

PERHITUNGAN BERAT

Piroksikam = mol x BM

= 0,010 mol x 331,35

= 3,314 gram

4-fluorobenzoil klorida = mol x BM

= 0,017 mol x 158,56

= 2,695 gram

Volume 4-fluorobenzoil klorida $= \frac{\text{berat}}{\rho}$

$= \frac{2,695}{1,34}$

$= 2,01 \text{ ml} \approx 2 \text{ ml}$

Piridin = mol x BM

= 0.025 mol x 79,10

= 1,9775 gram

Volume piridin $= \frac{\text{berat}}{\rho}$

$= \frac{1,9775}{0,9827}$

$= 2,0123 \text{ ml} \approx 2 \text{ ml}$

LAMPIRAN C.

PERHITUNGAN % HAMBATAN NYERI SENYAWA UJI O-(4-FLUOROBENZOIL)PIROKSIKAM DAN SENYAWA PEMBANDING PIROKSIKAM

Rumus : $\%\ \text{hambatan nyeri} = \frac{fK - fT}{fK} \times 100\ \%$

f_T = frekuensi geliat rata-rata pada kelompok uji atau kelompok pembanding

f_K = frekuensi geliat rata-rata pada kelompok kontrol

Piroksikam	O-(4-fluorobenzoil)piroksikam
Dosis 1 mg/kg BB % hambatan nyeri = $\frac{88,8 - 73,6}{88,8} x100\% = 17,12\%$	Dosis 1 mg/kg BB % hambatan nyeri = $\frac{88,8 - 70,2}{88,8} x100\% = 20,95\%$
Dosis 2 mg/kg BB % hambatan nyeri = $\frac{88,8 - 58,8}{88,8} x100\% = 33,78\%$	Dosis 2 mg/kg BB % hambatan nyeri = $\frac{88,8 - 57}{88,8} x100\% = 35,81\%$
Dosis 3 mg/kg BB % hambatan nyeri = $\frac{88,8 - 49,6}{88,8} x100\% = 44,14\%$	Dosis 3 mg/kg BB % hambatan nyeri = $\frac{88,8 - 48}{88,8} x100\% = 45,95\%$
Dosis 4 mg/kg BB % hambatan nyeri = $\frac{88,8 - 40,6}{40,6} x100\% = 54,28\%$	Dosis 4 mg/kg BB % hambatan nyeri = $\frac{88,8 - 39,6}{88,8} x100\% = 55,41\%$
Dosis 5 mg/kg BB % hambatan nyeri = $\frac{88,8 - 30}{88,8} x100\% = 66,22\%$	Dosis 5 mg/kg BB % hambatan nyeri = $\frac{88,8 - 28}{88,8} x100\% = 68,47\%$

LAMPIRAN D.
HASIL UJI HSD ANTARA KELOMPOK SENYAWA UJI O-(4-FLUOROBENZOIL)PIROKSIKAM, SENYAWA PEMBANDING PIROKSIKAM, DAN KONTROL CMC-NA 0,5%

Multiple Comparisons

Dependent Variable: GELIAT
Tukey HSD

(I) DOSIS	(J) DOSIS	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	14.8000*	3.50739	.005	2.8994	26.7006
	3.00	24.0000*	3.50739	.000	12.0994	35.9006
	4.00	33.0000*	3.50739	.000	21.0994	44.9006
	5.00	43.6000*	3.50739	.000	31.6994	55.5006
	6.00	3.4000	3.50739	.996	-8.5006	15.3006
	7.00	16.6000*	3.50739	.001	4.6994	28.5006
	8.00	25.6000*	3.50739	.000	13.6994	37.5006
	9.00	34.0000*	3.50739	.000	22.0994	45.9006
	10.00	45.6000*	3.50739	.000	33.6994	57.5006
	11.00	-15.2000*	3.50739	.004	-27.1006	-3.2994
2.00	1.00	-14.8000*	3.50739	.005	-26.7006	-2.8994
	3.00	9.2000	3.50739	.268	-2.7006	21.1006
	4.00	18.2000*	3.50739	.000	6.2994	30.1006
	5.00	28.8000*	3.50739	.000	16.8994	40.7006
	6.00	-11.4000	3.50739	.071	-23.3006	.5006
	7.00	1.8000	3.50739	1.000	-10.1006	13.7006
	8.00	10.8000	3.50739	.106	-1.1006	22.7006
	9.00	19.2000*	3.50739	.000	7.2994	31.1006
	10.00	30.8000*	3.50739	.000	18.8994	42.7006
	11.00	-30.0000*	3.50739	.000	-41.9006	-18.0994
3.00	1.00	-24.0000*	3.50739	.000	-35.9006	-12.0994

	2.00	-9.2000	3.50739	.268	-21.1006	2.7006
	4.00	9.0000	3.50739	.297	-2.9006	20.9006
	5.00	19.6000*	3.50739	.000	7.6994	31.5006
	6.00	-20.6000*	3.50739	.000	-32.5006	-8.6994
	7.00	-7.4000	3.50739	.577	-19.3006	4.5006
	8.00	1.6000	3.50739	1.000	-10.3006	13.5006
	9.00	10.0000	3.50739	.173	-1.9006	21.9006
	10.00	21.6000*	3.50739	.000	9.6994	33.5006
	11.00	-39.2000*	3.50739	.000	-51.1006	-27.2994
4.00	1.00	-33.0000*	3.50739	.000	-44.9006	-21.0994
	2.00	-18.2000*	3.50739	.000	-30.1006	-6.2994
	3.00	-9.0000	3.50739	.297	-20.9006	2.9006
	5.00	10.6000	3.50739	.120	-1.3006	22.5006
	6.00	-29.6000*	3.50739	.000	-41.5006	-17.6994
	7.00	-16.4000*	3.50739	.001	-28.3006	-4.4994
	8.00	-7.4000	3.50739	.577	-19.3006	4.5006
	9.00	1.0000	3.50739	1.000	-10.9006	12.9006
	10.00	12.6000*	3.50739	.030	.6994	24.5006
	11.00	-48.2000*	3.50739	.000	-60.1006	-36.2994
5.00	1.00	-43.6000*	3.50739	.000	-55.5006	-31.6994
	2.00	-28.8000*	3.50739	.000	-40.7006	-16.8994
	3.00	-19.6000*	3.50739	.000	-31.5006	-7.6994
	4.00	-10.6000	3.50739	.120	-22.5006	1.3006
	6.00	-40.2000*	3.50739	.000	-52.1006	-28.2994
	7.00	-27.0000*	3.50739	.000	-38.9006	-15.0994
	8.00	-18.0000*	3.50739	.000	-29.9006	-6.0994
	9.00	-9.6000	3.50739	.217	-21.5006	2.3006
	10.00	2.0000	3.50739	1.000	-9.9006	13.9006
	11.00	-58.8000*	3.50739	.000	-70.7006	-46.8994
6.00	1.00	-3.4000	3.50739	.996	-15.3006	8.5006
	2.00	11.4000	3.50739	.071	-.5006	23.3006
	3.00	20.6000*	3.50739	.000	8.6994	32.5006
	4.00	29.6000*	3.50739	.000	17.6994	41.5006

	5.00	40.2000*	3.50739	.000	28.2994	52.1006
	7.00	13.2000*	3.50739	.019	1.2994	25.1006
	8.00	22.2000*	3.50739	.000	10.2994	34.1006
	9.00	30.6000*	3.50739	.000	18.6994	42.5006
	10.00	42.2000*	3.50739	.000	30.2994	54.1006
	11.00	-18.6000*	3.50739	.000	-30.5006	-6.6994
7.00	1.00	-16.6000*	3.50739	.001	-28.5006	-4.6994
	2.00	-1.8000	3.50739	1.000	-13.7006	10.1006
	3.00	7.4000	3.50739	.577	-4.5006	19.3006
	4.00	16.4000*	3.50739	.001	4.4994	28.3006
	5.00	27.0000*	3.50739	.000	15.0994	38.9006
	6.00	-13.2000*	3.50739	.019	-25.1006	-1.2994
	8.00	9.0000	3.50739	.297	-2.9006	20.9006
	9.00	17.4000*	3.50739	.001	5.4994	29.3006
	10.00	29.0000*	3.50739	.000	17.0994	40.9006
	11.00	-31.8000*	3.50739	.000	-43.7006	-19.8994
8.00	1.00	-25.6000*	3.50739	.000	-37.5006	-13.6994
	2.00	-10.8000	3.50739	.106	-22.7006	1.1006
	3.00	-1.6000	3.50739	1.000	-13.5006	10.3006
	4.00	7.4000	3.50739	.577	-4.5006	19.3006
	5.00	18.0000*	3.50739	.000	6.0994	29.9006
	6.00	-22.2000*	3.50739	.000	-34.1006	-10.2994
	7.00	-9.0000	3.50739	.297	-20.9006	2.9006
	9.00	8.4000	3.50739	.393	-3.5006	20.3006
	10.00	20.0000*	3.50739	.000	8.0994	31.9006
	11.00	-40.8000*	3.50739	.000	-52.7006	-28.8994
9.00	1.00	-34.0000*	3.50739	.000	-45.9006	-22.0994
	2.00	-19.2000*	3.50739	.000	-31.1006	-7.2994
	3.00	-10.0000	3.50739	.173	-21.9006	1.9006
	4.00	-1.0000	3.50739	1.000	-12.9006	10.9006
	5.00	9.6000	3.50739	.217	-2.3006	21.5006
	6.00	-30.6000*	3.50739	.000	-42.5006	-18.6994
	7.00	-17.4000*	3.50739	.001	-29.3006	-5.4994

	8.00	-8.4000	3.50739	.393	-20.3006	3.5006
	10.00	11.6000	3.50739	.062	-.3006	23.5006
	11.00	-49.2000*	3.50739	.000	-61.1006	-37.2994
10.00	1.00	-45.6000*	3.50739	.000	-57.5006	-33.6994
	2.00	-30.8000*	3.50739	.000	-42.7006	-18.8994
	3.00	-21.6000*	3.50739	.000	-33.5006	-9.6994
	4.00	-12.6000*	3.50739	.030	-24.5006	-.6994
	5.00	-2.0000	3.50739	1.000	-13.9006	9.9006
	6.00	-42.2000*	3.50739	.000	-54.1006	-30.2994
	7.00	-29.0000*	3.50739	.000	-40.9006	-17.0994
	8.00	-20.0000*	3.50739	.000	-31.9006	-8.0994
	9.00	-11.6000	3.50739	.062	-23.5006	.3006
	11.00	-60.8000*	3.50739	.000	-72.7006	-48.8994
11.00	1.00	15.2000*	3.50739	.004	3.2994	27.1006
	2.00	30.0000*	3.50739	.000	18.0994	41.9006
	3.00	39.2000*	3.50739	.000	27.2994	51.1006
	4.00	48.2000*	3.50739	.000	36.2994	60.1006
	5.00	58.8000*	3.50739	.000	46.8994	70.7006
	6.00	18.6000*	3.50739	.000	6.6994	30.5006
	7.00	31.8000*	3.50739	.000	19.8994	43.7006
	8.00	40.8000*	3.50739	.000	28.8994	52.7006
	9.00	49.2000*	3.50739	.000	37.2994	61.1006
	10.00	60.8000*	3.50739	.000	48.8994	72.7006

* The mean difference is significant at the .05 level.

LAMPIRAN E.
HASIL UJI ED_{50} SENYAWA PIROKSIKAM

* * * * * * P R O B I T A N A L Y S I S * * * * * *

Observed and Expected Frequencies

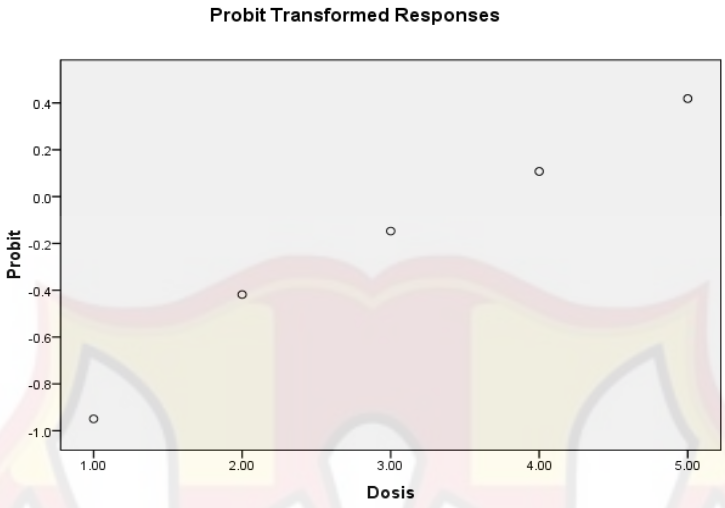
Cell Counts and Residuals

	Number	Dosis	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	1.000	100	17	20.177	-3.057	.202
	2	2.000	100	34	30.360	3.420	.304
	3	3.000	100	44	42.354	1.786	.424
	4	4.000	100	54	55.108	-.828	.551
	5	5.000	100	66	67.350	-1.130	.674

Confidence Limits

		95% Confidence Limits for Dosis		
	Probability	Estimate	Lower Bound	Upper Bound
PROBIT	0.01	-3.642	-6.049	-2.214
	0.02	-2.793	-4.907	-1.536
	0.03	-2.255	-4.183	-1.105
	0.04	-1.850	-3.639	-.780
	0.05	-1.520	-3.196	-.515
	0.06	-1.240	-2.821	-.289
	0.07	-.994	-2.491	-.091
	0.08	-.774	-2.197	.087
	0.09	-.573	-1.929	.249
	0.1	-.389	-1.683	.398

0.15	.374	-.669	1.021
0.2	.980	.130	1.523
0.25	1.501	.806	1.963
0.3	1.968	1.401	2.371
0.35	2.401	1.933	2.768
0.4	2.812	2.413	3.169
0.45	3.209	2.847	3.589
0.5	3.600	3.241	4.033
0.55	3.992	3.610	4.504
0.6	4.389	3.966	5.001
0.65	4.800	4.321	5.527
0.7	5.233	4.686	6.091
0.75	5.700	5.073	6.706
0.8	6.220	5.499	7.396
0.85	6.827	5.992	8.205
0.9	7.590	6.608	9.226
0.91	7.774	6.756	9.473
0.92	7.974	6.917	9.742
0.93	8.195	7.094	10.038
0.94	8.440	7.291	10.368
0.95	8.721	7.515	10.745
0.96	9.050	7.779	11.188
0.97	9.455	8.103	11.733
0.98	9.994	8.533	12.458
0.99	10.842	9.210	13.602


Probit Transformed Responses
Probit
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
1.00
2.00
3.00
4.00
5.00
Dosis

LAMPIRAN F.
HASIL UJI ED_{50} SENYAWA O-(4-FLUOROBENZOIL)PIROKSIKAM

* * * * * * * * P R O B I T A N A L Y S I S * * * * *

Observed and Expected Frequencies

Cell Counts and Residuals

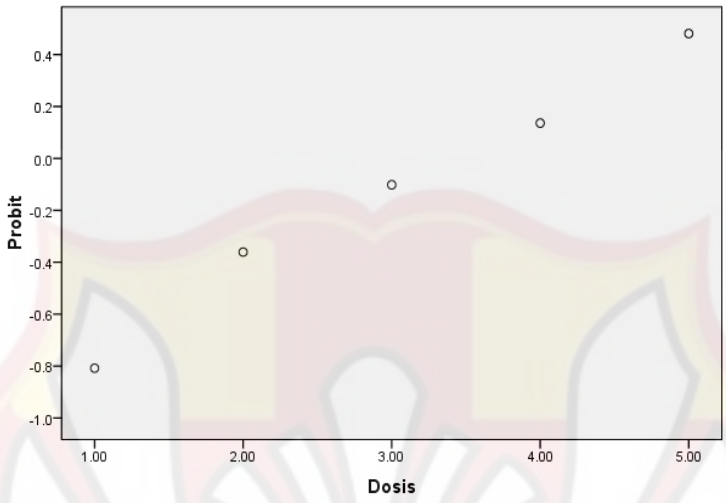
	Number	Dosis	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	1.000	100	21	23.000	-2.050	.230
	2	2.000	100	36	33.223	2.687	.332
	3	3.000	100	46	44.882	1.068	.449
	4	4.000	100	55	57.003	-1.593	.570
	5	5.000	100	68	68.494	-.024	.685

Confidence Limits

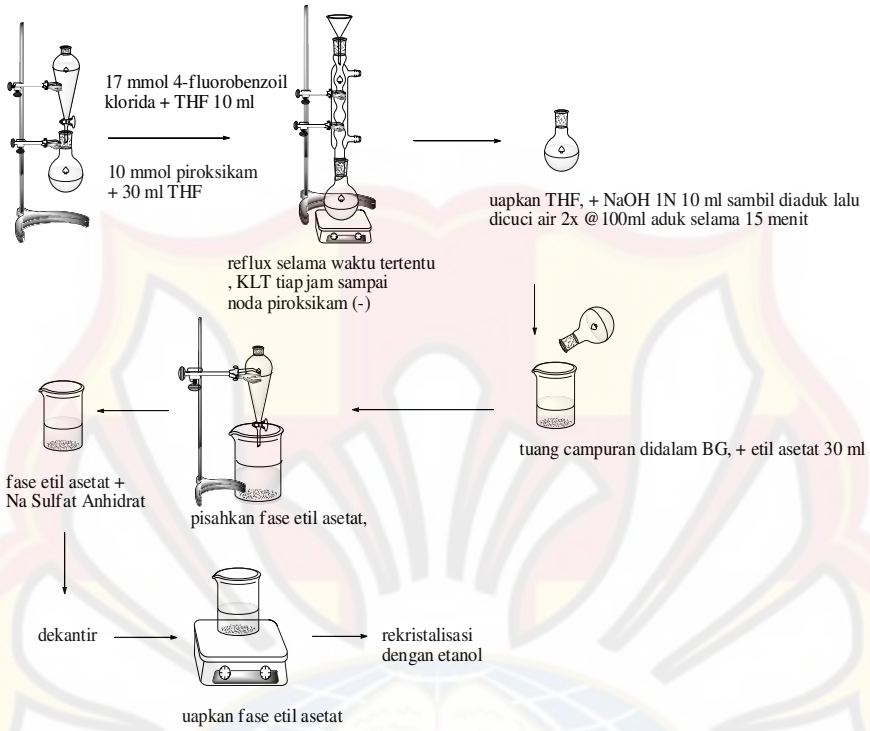
	Probability	95% Confidence Limits for Dosis		
		Estimate	Lower Bound	Upper Bound
PROBIT	0.01	-4.203	-6.939	-2.619
	0.02	-3.310	-5.718	-1.912
	0.03	-2.743	-4.944	-1.462
	0.04	-2.316	-4.362	-1.123
	0.05	-1.969	-3.890	-.847
	0.06	-1.674	-3.488	-.612
	0.07	-1.415	-3.135	-.405
	0.08	-1.184	-2.820	-.220
	0.09	-.973	-2.534	-.051
	0.1	-.779	-2.271	.105

0.15	.025	-1.185	.753
0.2	.663	-.328	1.274
0.25	1.211	.399	1.730
0.3	1.703	1.041	2.150
0.35	2.159	1.619	2.556
0.4	2.591	2.143	2.965
0.45	3.010	2.618	3.394
0.5	3.422	3.048	3.853
0.55	3.834	3.446	4.344
0.6	4.252	3.825	4.869
0.65	4.685	4.200	5.427
0.7	5.140	4.583	6.028
0.75	5.632	4.989	6.684
0.8	6.180	5.435	7.420
0.85	6.819	5.950	8.283
0.9	7.622	6.594	9.374
0.91	7.816	6.748	9.638
0.92	8.027	6.916	9.926
0.93	8.259	7.101	10.241
0.94	8.518	7.307	10.594
0.95	8.813	7.542	10.997
0.96	9.160	7.817	11.470
0.97	9.586	8.155	12.053
0.98	10.153	8.604	12.827
0.99	11.046	9.311	14.049

Probit Transformed Responses



LAMPIRAN G.
SKEMA SINTESIS O-(4-FLUOROBENZOIL)PIROKSIKAM



LAMPIRAN H.
SERTIFIKAT PIROKSIKAM

南通精华制药股份有限公司检验报告

NANTONG JINGHUA PHARMACEUTICAL CO. LTD.

CERTIFICATE OF ANALYSIS

APIs.ADD:43 Yaogang Road,Nantong Jiangsu China
Tel:86-513-85609405/85609406

17/7 '09 PD 1150 = 25 kg

吡罗昔康

PIROXICAM MICRONIZED

Batch No.	PRX2009005M	Manufacture Date	2009.3.4
Total Quantity	200.0KG	Report Date	2009.3.5
Commercial Quantity	200.0KG	Re-test Date	2012.3.3
Inspection No.	09030020		

TEST	SPECIFICATIONS (USP)	RESULTS
Characteristics	off-white to light tan or light yellow odorless powder	Complies
Identification	A. IR B. UV C. TLC	Complies
Water	≤0.5%	0.32%
Residue on ignition	≤0.3%	0.14%
Heavy metals	≤0.005%	<0.005%
Organic volatile impurities	complies	Complies
Residual solvents	Ethanol ≤0.5%	<0.5%
Particle size	100%≤1000mesh	Complies
Assay	97.0~103.0%	99.46%

Conclusion The product meets the requirements of USP 31 and the additional items defined by customer

Analyst Supervisor Chief of Laboratory

QA Release Date

LAMPIRAN I.

SERTIFIKAT HEWAN COBA MENCIT

CV. SURABAYA MOUSE SERVICE
WEDORO MASJID NO. 20-E RT. 01 RW.05 WEDORO
KECAMATAN WARU SIDOARJO
TELP. 081938310682 – 03170259110

Yang bertanda tangan di bawah ini:

Nama : M. Syamsul Bahri, S.Kom

Selaku penanggung jawab Pengembangan Hewan Percobaan

Menerangkan bahwa yang digunakan pada penelitian:

Judul :Sintesis O-(4-Fluoro Benzoil) Piroksikam dan Uji Aktivitas Analgesik terhadap Mencit (Mus Musculus).

Peneliti :Yuli Anggraini

Institusi :Fakultas Farmasi Universitas Katolik Widya Mandala Surabaya

NRP :2443006087

Merupakan hewan uji dengan spesifikasi:

Mencit galur : Swiss Webster

Umur : 2 – 3 bulan

Jenis kelamin : Jantan

Jumlah : 55 ekor

Demikian surat keterangan ini dibuat untuk dapat digunakan sebaik-baiknya.

Sidoarjo, 30 Maret 2010

Penanggung Jawab

SMS SURABAYA MOUSE SERVICE

(M. Syamsul Bahri, S.Kom)