

LAMPIRAN A

TABEL UJI r

DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT	DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT
1	.997	1.000	24	.388	.496
2	.950	.990	25	.381	.487
3	.878	.959	26	.374	.478
4	.811	.917	27	.367	.470
5	.754	.874	28	.361	.463
6	.707	.834	29	.355	.456
7	.666	.798	30	.349	.449
8	.632	.765	35	.325	.418
9	.602	.735	40	.304	.393
10	.576	.708	48	.288	.372
11	.553	.684	50	.273	.354
12	.532	.661	60	.250	.325
13	.514	.641	70	.232	.302
14	.497	.623	80	.217	.283
15	.482	.606	90	.205	.267
16	.468	.590	100	.195	.254
17	.456	.575	125	.174	.228
18	.444	.561	150	.159	.208
19	.433	.549	200	.138	.181
20	.423	.537	300	.113	.148
21	.413	.526	400	.098	.128
22	.404	.515	500	.088	.115
23	.396	.505	1000	.062	.081

LAMPIRAN B

Tabel uji F

Basis pertama pada setiap pasangan baris adalah titik pada distribusi F untuk aras 0.05; baris kedua untuk aras 0.01.

		Derajat kebebasan untuk rataan kuadrat yang lebih besar																											
		1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞				
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.45	2.42	2.37	2.33	2.28	2.24	2.20	2.16	2.14	2.13	2.09	2.07	2.04	2.02	2.01				
	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69	3.61	3.55	3.45	3.37	3.25	3.18	3.10	3.01	2.96	2.89	2.86	2.80	2.77	2.75					
17	4.45	3.59	3.20	2.96	2.81	2.70	2.62	2.55	2.50	2.45	2.41	2.38	2.33	2.29	2.23	2.19	2.15	2.11	2.10	2.08	2.04	2.02	1.99	1.97	1.96				
	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68	3.59	3.52	3.45	3.35	3.27	3.16	3.08	3.00	2.92	2.86	2.79	2.76	2.70	2.67	2.65					
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37	2.34	2.29	2.25	2.19	2.15	2.11	2.07	2.04	2.00	1.98	1.95	1.93	1.92					
	8.26	6.01	5.09	4.58	4.25	4.01	3.85	3.71	3.60	3.51	3.44	3.37	3.27	3.19	3.07	3.00	2.91	2.83	2.78	2.71	2.68	2.63	2.59	2.57					
19	4.38	3.52	3.13	2.90	2.74	2.63	2.55	2.48	2.43	2.38	2.34	2.31	2.26	2.21	2.15	2.11	2.07	2.02	2.00	1.96	1.94	1.91	1.90	1.88					
	8.10	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43	3.36	3.30	3.19	3.12	3.00	2.92	2.84	2.76	2.70	2.63	2.60	2.54	2.51	2.49					
20	4.35	3.49	3.10	2.87	2.71	2.60	2.52	2.45	2.40	2.35	2.31	2.28	2.23	2.18	2.12	2.08	2.04	1.99	1.96	1.92	1.90	1.87	1.85	1.84					
	8.10	5.85	4.94	4.43	4.10	3.87	3.71	3.56	3.45	3.37	3.30	3.23	3.13	3.05	2.94	2.86	2.77	2.69	2.63	2.56	2.53	2.47	2.44	2.42					
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28	2.25	2.20	2.15	2.09	2.05	2.00	1.96	1.93	1.89	1.87	1.84	1.82	1.81					
	8.02	5.78	4.87	4.37	4.04	3.81	3.65	3.51	3.40	3.31	3.24	3.17	3.07	2.99	2.88	2.80	2.72	2.65	2.58	2.51	2.47	2.43	2.38	2.36					
22	4.30	3.44	3.05	2.82	2.66	2.55	2.47	2.40	2.35	2.30	2.26	2.23	2.18	2.13	2.07	2.03	1.98	1.93	1.91	1.87	1.84	1.81	1.80	1.78					
	7.94	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.18	3.12	3.02	2.94	2.83	2.75	2.67	2.59	2.53	2.46	2.42	2.37	2.33	2.31					
23	4.28	3.42	3.03	2.80	2.64	2.53	2.45	2.38	2.32	2.28	2.24	2.20	2.14	2.10	2.04	2.00	1.96	1.91	1.88	1.84	1.82	1.79	1.77	1.76					
	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.14	3.07	2.97	2.89	2.78	2.70	2.62	2.53	2.48	2.41	2.37	2.32	2.28	2.26					
24	4.26	3.40	3.01	2.78	2.62	2.51	2.43	2.36	2.30	2.26	2.22	2.18	2.13	2.09	2.02	1.98	1.94	1.89	1.86	1.82	1.80	1.76	1.74	1.73					
	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.25	3.17	3.09	3.03	2.93	2.85	2.74	2.66	2.58	2.49	2.44	2.36	2.33	2.27	2.23	2.21					
25	4.24	3.38	2.99	2.76	2.60	2.49	2.41	2.34	2.28	2.24	2.20	2.16	2.11	2.06	2.00	1.96	1.92	1.87	1.84	1.80	1.77	1.74	1.72	1.71					
	7.77	5.57	4.68	4.18	3.86	3.63	3.46	3.32	3.21	3.13	3.05	2.99	2.89	2.81	2.70	2.62	2.54	2.45	2.40	2.32	2.29	2.23	2.19	2.17					
26	4.22	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.10	2.05	1.99	1.95	1.90	1.85	1.82	1.78	1.76	1.72	1.70	1.69					
	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.17	3.09	3.02	2.96	2.86	2.77	2.66	2.58	2.50	2.41	2.36	2.28	2.25	2.19	2.15	2.13					
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.30	2.25	2.20	2.16	2.13	2.08	2.03	1.97	1.93	1.88	1.84	1.80	1.76	1.74	1.71	1.68	1.67					
	7.68	5.49	4.60	4.11	3.79	3.56	3.39	3.26	3.14	3.06	2.98	2.93	2.83	2.74	2.63	2.55	2.47	2.38	2.33	2.25	2.21	2.16	2.12	2.10					
28	4.20	3.34	2.95	2.71	2.56	2.44	2.36	2.29	2.24	2.19	2.15	2.12	2.06	2.02	1.96	1.91	1.87	1.81	1.78	1.75	1.72	1.69	1.67	1.65					
	7.64	5.45	4.57	4.07	3.76	3.53	3.36	3.23	3.11	3.03	2.95	2.90	2.80	2.71	2.60	2.52	2.44	2.35	2.30	2.22	2.18	2.13	2.09	2.06					
29	4.18	3.33	2.93	2.70	2.54	2.43	2.35	2.28	2.22	2.18	2.14	2.10	2.05	2.00	1.94	1.90	1.85	1.80	1.77	1.73	1.71	1.68	1.65	1.64					
	7.60	5.42	4.54	4.04	3.73	3.50	3.32	3.20	3.08	3.00	2.92	2.87	2.77	2.68	2.57	2.49	2.41	2.32	2.27	2.19	2.15	2.10	2.06	2.04					
30	4.17	3.32	2.92	2.69	2.53	2.42	2.34	2.27	2.21	2.16	2.12	2.09	2.04	1.99	1.93	1.89	1.84	1.79	1.76	1.72	1.69	1.66	1.64	1.62					
	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.04	2.96	2.88	2.84	2.74	2.66	2.55	2.47	2.38	2.29	2.24	2.16	2.13	2.07	2.03	2.01					

(bersambung)

Tabel uji F (lanjutan)

Dari pertama pada setiap pasangan baris adalah titik pada distribusi F untuk aras 0.05; baris kedua untuk aras 0.01.

		Derajat kebebasan untuk rataan kuadrat yang lebih besar.																																														
		1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞																							
32	4.15	3.30	2.90	2.67	2.51	2.40	2.32	2.25	2.19	2.14	2.10	2.07	2.02	1.97	1.91	1.86	1.82	1.76	1.74	1.69	1.67	1.64	1.61	1.59	7.50	5.34	4.46	3.97	3.66	3.42	3.25	3.12	3.01	2.94	2.86	2.80	2.70	2.62	2.51	2.42	2.34	2.25	2.20	2.12	2.08	2.02	1.98	1.96
	4.13	3.28	2.88	2.65	2.49	2.38	2.30	2.23	2.17	2.12	2.08	2.05	2.00	1.95	1.89	1.84	1.80	1.74	1.71	1.67	1.64	1.61	1.59	1.57	7.44	5.29	4.42	3.93	3.61	3.38	3.21	3.08	2.97	2.89	2.82	2.76	2.66	2.58	2.47	2.38	2.30	2.21	2.15	2.08	2.04	1.98	1.94	1.91
34	4.11	3.26	2.86	2.63	2.48	2.36	2.28	2.21	2.15	2.10	2.06	2.03	1.99	1.93	1.87	1.82	1.78	1.72	1.69	1.65	1.62	1.59	1.56	1.55	7.39	5.25	4.38	3.89	3.58	3.35	3.18	3.04	2.94	2.86	2.78	2.72	2.62	2.54	2.43	2.35	2.26	2.17	2.12	2.04	2.00	1.94	1.90	1.87
	4.10	3.25	2.85	2.62	2.46	2.35	2.26	2.19	2.14	2.09	2.05	2.02	1.96	1.92	1.85	1.80	1.76	1.71	1.67	1.63	1.60	1.57	1.54	1.53	7.38	5.21	4.34	3.86	3.54	3.32	3.15	3.02	2.91	2.82	2.75	2.69	2.59	2.51	2.40	2.32	2.22	2.14	2.08	2.00	1.97	1.90	1.86	1.84
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.07	2.04	2.00	1.95	1.90	1.84	1.79	1.74	1.69	1.66	1.61	1.59	1.55	1.53	1.51	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.88	2.80	2.73	2.66	2.56	2.49	2.37	2.29	2.20	2.11	2.05	1.97	1.94	1.88	1.84	1.81
	4.07	3.22	2.83	2.59	2.44	2.32	2.24	2.17	2.11	2.06	2.02	1.90	1.94	1.89	1.82	1.78	1.73	1.68	1.64	1.60	1.57	1.54	1.51	1.49	7.27	5.15	4.29	3.80	3.49	3.26	3.10	2.96	2.86	2.77	2.70	2.64	2.54	2.46	2.35	2.26	2.17	2.10	2.02	1.94	1.91	1.85	1.80	1.78
44	4.06	3.21	2.82	2.58	2.43	2.31	2.23	2.16	2.10	2.05	2.01	1.98	1.92	1.88	1.81	1.76	1.72	1.66	1.63	1.58	1.56	1.52	1.50	1.48	7.24	5.12	4.26	3.78	3.46	3.24	3.07	2.94	2.84	2.75	2.68	2.62	2.52	2.44	2.32	2.24	2.15	2.06	2.09	1.92	1.88	1.82	1.78	1.75
	4.05	3.20	2.81	2.57	2.42	2.30	2.22	2.14	2.09	2.04	2.00	1.97	1.91	1.87	1.80	1.75	1.71	1.65	1.62	1.57	1.54	1.51	1.48	1.46	7.21	5.10	4.24	3.76	3.44	3.22	3.05	2.92	2.82	2.73	2.66	2.60	2.50	2.42	2.30	2.22	2.13	2.04	1.98	1.90	1.86	1.80	1.76	1.72
48	4.04	3.19	2.80	2.56	2.41	2.30	2.21	2.14	2.08	2.03	1.99	1.96	1.90	1.86	1.79	1.74	1.70	1.64	1.61	1.56	1.53	1.50	1.47	1.45	7.19	5.08	4.22	3.74	3.42	3.20	3.04	2.90	2.80	2.71	2.64	2.58	2.48	2.40	2.28	2.20	2.11	2.02	1.96	1.88	1.84	1.78	1.73	1.70
	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07	2.02	1.98	1.95	1.90	1.85	1.78	1.74	1.69	1.63	1.60	1.55	1.52	1.48	1.46	1.44	7.17	5.06	4.20	3.72	3.41	3.18	3.02	2.88	2.78	2.70	2.62	2.56	2.46	2.39	2.26	2.18	2.10	2.00	1.94	1.86	1.82	1.76	1.71	1.68
55	4.02	3.17	2.78	2.54	2.38	2.27	2.18	2.11	2.05	2.00	1.97	1.93	1.88	1.83	1.76	1.72	1.67	1.61	1.58	1.52	1.50	1.46	1.43	1.41	7.13	5.01	4.16	3.68	3.37	3.15	2.98	2.85	2.75	2.66	2.59	2.53	2.43	2.35	2.23	2.15	2.06	1.96	1.90	1.82	1.78	1.71	1.66	1.64
	4.00	3.15	2.76	2.52	2.37	2.25	2.17	2.10	2.04	1.99	1.95	1.92	1.86	1.81	1.75	1.70	1.65	1.59	1.56	1.50	1.48	1.44	1.41	1.39	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63	2.56	2.50	2.40	2.32	2.20	2.12	2.03	1.93	1.87	1.79	1.74	1.68	1.63	1.60
65	3.99	3.14	2.75	2.51	2.36	2.24	2.15	2.08	2.02	1.98	1.94	1.90	1.85	1.80	1.73	1.68	1.63	1.57	1.54	1.49	1.46	1.42	1.39	1.37	7.04	4.95	4.10	3.62	3.31	3.09	2.92	2.79	2.70	2.61	2.54	2.47	2.37	2.30	2.18	2.09	2.00	1.90	1.84	1.76	1.71	1.64	1.60	1.56
	3.98	3.13	2.74	2.50	2.35	2.23	2.14	2.07	2.01	1.97	1.93	1.89	1.84	1.79	1.72	1.67	1.62	1.56	1.53	1.47	1.45	1.40	1.37	1.35	7.01	4.92	4.08	3.60	3.29	3.07	2.91	2.77	2.67	2.57	2.49	2.42	2.32	2.25	2.13	2.04	1.95	1.89	1.81	1.76	1.69	1.62	1.56	1.53
80	3.96	3.11	2.72	2.48	2.33	2.21	2.12	2.05	1.99	1.95	1.91	1.88	1.82	1.77	1.70	1.65	1.60	1.54	1.51	1.45	1.42	1.38	1.35	1.32	6.96	4.88	4.04	3.56	3.25	3.04	2.87	2.74	2.64	2.55	2.48	2.41	2.32	2.24	2.11	2.03	1.94	1.84	1.78	1.70	1.65	1.57	1.51	1.49

Sumber: Scheffler (1987).

LAMPIRAN C

PERHITUNGAN *MOISTURE CONTENT* (MC)

Formula -1			
W (g)	Wp (g)	Wa (g)	MC (%)
0,391	0,378	0,013	3,4392
0,405	0,389	0,0161	4,1335
0,399	0,385	0,014	3,6364
Rata-rata			3,7363 ± 0,3578

Formula a			
W (g)	Wp (g)	Wa (g)	MC (%)
0,751	0,695	0,0558	8,0265
0,7825	0,72	0,0625	8,6806
0,7835	0,725	0,0585	8,0690
Rata-rata			8,2587± 0,3660

Formula b			
W (g)	Wp (g)	Wa (g)	MC (%)
0,3747	0,3527	0,022	6,2376
0,3621	0,3411	0,021	6,1566
0,3527	0,3312	0,0215	6,4915
Rata-rata			6,2952 ± 0,1748

Formula ab			
W (g)	Wp (g)	Wa (g)	MC (%)
0,803	0,737	0,066	8,9552
0,782	0,724	0,058	8,0110
0,755	0,691	0,064	9,2619
Rata-rata			8,7427 ± 0,6520

Keterangan :

W = berat mula-mula

Wp= Berat kering (setelah dioven 100 ± 2 °C selama 6 jam)

Wa= Selisih antara W dan Wp

$$MC = \frac{w_a}{w_p} \times 100\%$$

LAMPIRAN D
HASIL UJI ANAVA MOISTURE CONTENT (MC)

Anova Single Factor

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Column 1	3	11,21	3,7366	0,1260
Column 2	3	24,81	8,27	0,1273
Column 3	3	18,89	6,2966	0,0296
Column 4	3	26,23	8,7433	0,4258

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	46,7067	3	15,5689	87,8607	1,83095E-06	4,0661
Within Groups	1,4176	8	0,1772			
Total	48,1243	11				

LAMPIRAN E
DATA KURVA BAKU DENGAN TIGA KALI REPLIKASI

Pengujian 1

Konsentrasi ($\mu\text{g/ml}$)	Absorbansi
5,06	0,129
15,18	0,423
25,30	0,609
35,42	0,811
45,54	1,029
a	0,0532
b	0,0216
T_{hitung}	0,9968

Pengujian 2

Konsentrasi ($\mu\text{g/ml}$)	Absorbansi
5,04	0,114
15,12	0,334
25,20	0,614
35,28	0,838
45,36	1,020
a	0,005
b	0,0229
T_{hitung}	0,9976

Pengujian 3

Konsentrasi ($\mu\text{g/ml}$)	Absorbansi
5,06	0,129
15,18	0,423
25,30	0,609
35,42	0,811
45,54	1,029
a	0,06605
b	0,02166
r_{hitung}	0,9913

LAMPIRAN F

PERHITUNGAN STATISTIK ANAVA KURVA BAKU

Data kurva baku propranolol HCl dalam larutan dapar fosfat pH 7,4

Pengujian 1

Konsentrasi ($\mu\text{g/mL}$)	Serapan (A)	X^2	Y^2	XY
5,06	0,129	25,6036	0,0166	0,6527
15,18	0,423	230,4324	0,1789	6,4211
25,3	0,609	640,09	0,3709	15,4077
35,42	0,811	1254,5764	0,6577	28,7256
45,54	1,029	2073,8916	1,0588	46,8607
		$\Sigma =$ 4224,594	$\Sigma =$ 2,2830	$\Sigma =$ 98,0679

Pengujian 2

Konsentrasi ($\mu\text{g/mL}$)	Serapan (A)	X^2	Y^2	XY
5,04	0,114	25,4016	0,0130	0,5746
15,12	0,334	228,6144	0,1116	5,0501
25,2	0,614	635,0400	0,3770	15,4728
35,28	0,838	1244,6784	0,7022	29,5646
45,36	1,02	2057,5296	1,0404	46,2672
		$\Sigma =$ 4191,2640	$\Sigma =$ 2,2442	$\Sigma =$ 96,9293

Pengujian 3

Konsentrasi ($\mu\text{g/mL}$)	Serapan (A)	X^2	Y^2	XY
5,03	0,119	25,3009	0,014161	0,59857
15,09	0,458	227,7081	0,209764	6,91122
25,15	0,632	632,5225	0,399424	15,8948
35,21	0,815	1239,7441	0,664225	28,69615
45,27	1,03	2049,3729	1,0609	46,6281
		$\Sigma =$ 4174,6485	$\Sigma =$ 2,348474	$\Sigma =$ 98,72884

	ΣX^2	ΣXY	ΣY^2	N	SSi	RDF
Regresi I	4224,594	98,0679	2,2830	5	0,0065	4
Regresi II	4191,264	96,9293	2,2442	5	0,0026	4
Regresi III	4174,6485	98,72884	2,348474	5	0,0136	4
	12590,5065	293,7260	6,8757			

$$\begin{aligned} SSc &= \Sigma Yc - [(\Sigma XYc)^2 / \Sigma Xc] \\ &= 6,8757 - (293,7260^2 / 12590,5065) = 0,0233 \end{aligned}$$

$$\begin{aligned} SSp &= SS1 + SS2 + SS3 \\ &= 0,0065 + 0,0026 + 0,0136 = 0,0226 \end{aligned}$$

$$\begin{aligned} F &= (SSc - SSp / k - 1) / (SSp / 12) \\ &= (0,0233 - 0,0226) / (3 - 1) / (0,0226 : 12) = 0,1742 \end{aligned}$$

F hitung < F tabel 0,05 (2;12) 3,89

LAMPIRAN G
RANGKUMAN AKURASI DAN PRESISI

Konsetrasi	Uji	Serapan	Kadar teoritis	Kadar teramati	% perolehan kembali
Kadar 100%	1	0,585	25,20	25,24	100,16
	2	0,584	25,20	25,20	100,00
	3	0,589	25,20	25,42	100,87
	4	0,584	25,20	25,20	100,00
	5	0,583	25,20	25,16	99,84
	6	0,581	25,20	25,06	99,44
				Rata-rata	100,05
				SD	0,47
				KV	0,47

Contoh perhitungan :

Dari hasil serapan dimasukkan ke dalam persamaan kurva baku terpilih yaitu :

$$Y = 0,005 + 0,0229x$$

Dimana:

Y= Serapan

X= Konsetrasi teramati

Kemudian Hitung % perolehan kembali dengan rumus

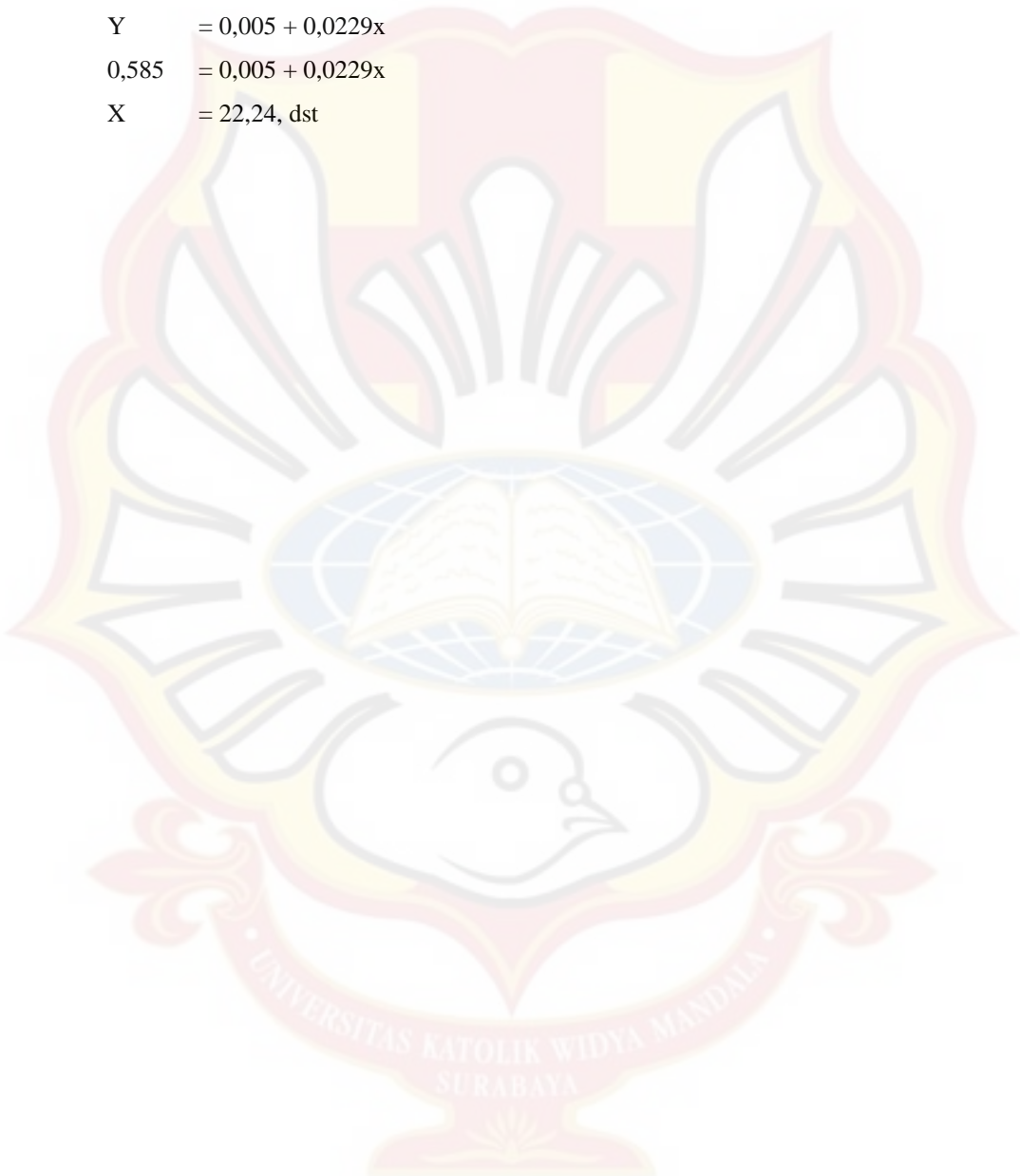
$$\% \text{ perolehan kembali} = \frac{\text{Kadar teramati}}{\text{kadar teoritis}} \times 100\%$$

Misal :

$$Y = 0,005 + 0,0229x$$

$$0,585 = 0,005 + 0,0229x$$

$$X = 22,24, \text{ dst}$$



LAMPIRAN H
PERHITUNGAN STATISTIK LOD DAN LOQ

Konsentrasi				
(x)	Abs (y)	Yi	Yi-Y	(Yi-Y)²
5,04	0,114	0,1204	0,0064	0,0000
15,12	0,334	0,3512	0,0172	0,0003
25,2	0,614	0,5821	-0,0319	0,0010
35,28	0,838	0,8129	-0,0251	0,0006
45,36	1,02	1,0437	0,0237	0,0006
$\Sigma (Yi-Y)^2$				0,0026

Dari Konsentrasi (x) dan Abs (y) setelah dimasukan dalam regresi linear akan menghasilkan persamaan $Y = 0,005 + 0,0229x$

Kemudian dari persamaan tersebut Konsentrasi (x) dimasukan kembali ke dalam persamaan di atas sehingga menghasilkan Yi

$$S_{y/x} = \sqrt{\frac{\Sigma (Yi-Y)^2}{n-2}} = 0,0292$$

$$S_b = \frac{S_{y/x}}{b} = 1,2751$$

b = slope dari persamaan di atas

$$LOD = 3S_b = 3,8199 \mu\text{g /mL}$$

$$LOQ = 10S_b = 12,7332 \mu\text{g /mL}$$

LAMPIRAN I
DATA PELEPASAN PROPRANOLOL HCl

Akar waktu (jam)	FORMULA -1						Rata-rata ± SD
	Absorbansi			Konsentrasi (ppm)			
	Replikasi 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,5	0,224	0,234	0,231	9,56	10,00	9,87	9,81 ± 0,22
0,707	0,284	0,282	0,298	12,18	12,10	12,79	12,36 ± 0,38
0,866	0,295	0,308	0,298	12,66	13,23	12,79	12,90 ± 0,30
1,00	0,330	0,359	0,335	14,19	15,46	14,41	14,69 ± 0,68
1,10	0,333	0,325	0,341	14,32	13,97	14,67	14,32 ± 0,35
1,41	0,372	0,361	0,353	16,03	15,55	15,20	15,59 ± 0,42
1,58	0,405	0,407	0,391	17,47	17,55	16,86	17,29 ± 0,38
1,73	0,422	0,413	0,395	18,21	17,82	17,03	17,69 ± 0,60
2,00	0,465	0,477	0,488	20,09	20,61	21,10	20,60 ± 0,50
2,24	0,662	0,651	0,652	28,69	28,21	28,25	28,38 ± 0,27
2,45	0,652	0,653	0,642	28,25	28,30	27,82	28,12 ± 0,27

FORMULA A							
Akar Waktu (jam)	Absorbansi			Konsentrasi (ppm)			Rata-rata ± SD
	Replikasi 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,5	0,247	0,258	0,265	10,57	11,05	11,35	10,99 ± 0,40
0,707	0,256	0,261	0,286	10,96	11,18	12,27	11,47 ± 0,70
0,866	0,263	0,264	0,294	11,27	11,31	12,62	11,73 ± 0,77
1,00	0,318	0,327	0,327	13,67	14,06	14,06	13,93 ± 0,23
1,10	0,323	0,333	0,338	13,89	14,32	14,54	14,25 ± 0,33
1,41	0,354	0,363	0,343	15,24	15,63	14,76	15,21 ± 0,44
1,58	0,358	0,369	0,355	15,41	15,90	15,28	15,53 ± 0,32
1,73	0,361	0,375	0,374	15,55	16,16	16,11	15,94 ± 0,34
2,00	0,401	0,397	0,397	17,29	17,12	17,12	17,18 ± 0,10
2,24	0,468	0,499	0,478	20,22	21,57	20,66	20,82 ± 0,69
2,45	0,558	0,535	0,548	24,15	23,14	23,71	23,67 ± 0,50

FORMULA B							
Akar Waktu (jam)	Absorbansi			Konsentrasi (ppm)			Rata-rata ± SD
	Replikasi 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,5	0,29	0,263	0,281	12,45	11,27	12,05	11,92 ± 0,60
0,707	0,367	0,387	0,375	15,81	16,68	16,16	16,22 ± 0,44
0,866	0,377	0,389	0,386	16,24	16,77	16,64	16,55 ± 0,27
1,00	0,409	0,391	0,419	17,64	16,86	18,08	17,53 ± 0,62
1,10	0,436	0,440	0,454	18,82	19,00	19,61	19,14 ± 0,41
1,41	0,457	0,423	0,457	19,74	18,25	19,74	19,24 ± 0,86
1,58	0,470	0,46	0,457	20,31	19,87	19,74	19,97 ± 0,30
1,73	0,646	0,633	0,657	27,99	27,42	28,47	27,96 ± 0,52
2,00	0,688	0,682	0,677	29,83	29,56	29,34	29,58 ± 0,24
2,24	0,705	0,693	0,699	30,57	30,04	30,31	30,31 ± 0,26
2,45	0,755	0,751	0,749	32,75	32,58	32,49	32,61 ± 0,13

FORMULA AB							
Akar Waktu (jam)	Absorbansi			Konsentrasi			Rata-rata ± SD
	Replikasi 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,5	0,189	0,189	0,187	8,03	8,03	7,95	8,01 ± 0,05
0,707	0,227	0,216	0,255	9,69	9,21	10,92	9,94 ± 0,88
0,866	0,267	0,266	0,287	11,44	11,40	12,31	11,72 ± 0,52
1,00	0,284	0,291	0,297	12,18	12,49	12,75	12,47 ± 0,28
1,10	0,331	0,309	0,314	14,24	13,28	13,49	13,67 ± 0,50
1,41	0,327	0,325	0,323	14,06	13,97	13,89	13,97 ± 0,09
1,58	0,322	0,33	0,336	13,84	14,19	14,45	14,16 ± 0,31
1,73	0,367	0,377	0,387	15,81	16,24	16,68	16,24 ± 0,44
2,00	0,383	0,384	0,397	16,51	16,55	17,12	16,72 ± 0,34
2,24	0,41	0,402	0,4	17,69	17,34	17,25	17,42 ± 0,23
2,45	0,415	0,402	0,409	17,90	17,34	17,64	17,63 ± 0,28

Contoh perhitungan :

Dari hasil penganmatan absorbansi penetrasi propranolol HCl dimasukkan ke dalam persamaan kurva baku terpilih yaitu

$$Y = 0,005 + 0,0229x,$$

Dimana:

Y= Absorbansi

X= Konsentrasi (ppm)

Misal :

Y = 0,224 (penetrasi formula 1, replikasi 1)

Maka,

$$0,224 = 0,005 + 0,0229x$$

$$X = 9,56 \text{ ppm}$$

Dst

LAMPIRAN J
DATA PENETRASI PROPRANOLOL HCl

Waktu (jam)	FORMULA (-1)						Rata-rata ± SD
	Absorbansi			Konsentrasi (ppm)			
	Replikaai 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,25	0,193	0,195	0,188	8,21	8,30	8,0	8,17 ± 0,16
0,50	0,281	0,278	0,298	12,05	11,92	12,8	12,26 ± 0,47
0,75	0,329	0,338	0,355	14,15	14,54	15,3	14,66 ± 0,58
1,0	0,392	0,379	0,379	16,90	16,33	16,3	16,52 ± 0,33
1,5	0,404	0,399	0,422	17,42	17,21	18,2	17,61 ± 0,53
2,0	0,543	0,537	0,543	23,49	23,23	23,5	23,41 ± 0,15
2,5	0,713	0,698	0,724	30,92	30,26	31,4	30,86 ± 0,57
3,0	0,905	0,913	0,901	39,30	39,65	39,1	39,36 ± 0,27
4,0	1,010	1,000	1,001	43,89	43,45	43,5	43,61 ± 0,24
5,0	1,144	1,154	1,166	49,74	50,17	50,7	50,20 ± 0,48
6,0	1,203	1,198	1,184	52,31	52,10	51,5	51,97 ± 0,43

FORMULA A

Waktu (jam)	Absorbansi			Konsentrasi (ppm)			Rata-rata ± SD
	Replikasi	Replikasi	Replikasi	Replikasi	Replikasi	Replikasi	
	1	Replikasi 2	3	1	2	3	
0,25	0,228	0,231	0,228	9,74	9,87	9,74	9,78 ± 0,08
0,50	0,326	0,315	0,329	14,02	13,54	14,15	13,90 ± 0,32
0,75	0,326	0,33	0,328	14,02	14,19	14,10	14,10 ± 0,09
1,0	0,348	0,345	0,35	14,98	14,85	15,07	14,96 ± 0,11
1,5	0,358	0,362	0,369	15,41	15,59	15,90	15,63 ± 0,24
2,0	0,398	0,391	0,396	17,16	16,86	17,07	17,03 ± 0,16
2,5	0,469	0,456	0,454	20,26	19,69	19,61	19,85 ± 0,36
3,0	0,494	0,489	0,473	21,35	21,14	20,44	20,98 ± 0,48
4,0	0,537	0,543	0,543	23,23	23,49	23,49	23,41 ± 0,15
5,0	0,713	0,699	0,7	30,92	30,31	30,35	30,52 ± 0,34
6,0	0,932	0,912	0,896	40,48	39,61	38,91	39,67 ± 0,79

FORMULA B

Waktu (jam)	Absorbansi			Konsentrasi (ppm)			Rata-rata ± SD
	Replikasi 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,25	0,286	0,276	0,295	12,27	11,83	12,66	12,26 ± 0,42
0,50	0,356	0,376	0,365	15,33	16,20	15,72	15,75 ± 0,44
0,75	0,41	0,4	0,401	17,69	17,25	17,29	17,41 ± 0,24
1,0	0,412	0,408	0,408	17,77	17,60	17,60	17,66 ± 0,10
1,5	0,589	0,567	0,577	25,50	24,54	24,98	25,01 ± 0,48
2,0	0,609	0,622	0,617	26,38	26,94	26,72	26,68 ± 0,29
2,5	0,728	0,71	0,731	31,57	30,79	31,70	31,35 ± 0,50
3,0	0,85	0,844	0,815	36,90	36,64	35,37	36,30 ± 0,82
4,0	0,972	0,955	0,962	42,23	41,48	41,79	41,83 ± 0,37
5,0	1,086	1,101	1,098	47,21	47,86	47,73	47,60 ± 0,35
6,0	1,318	1,337	1,329	57,34	58,17	57,82	57,77 ± 0,42

Waktu (jam)	FORMULA AB						
	Absorbansi			Konsentrasi (ppm)			Rata-rata ± SD
	Replikasi 1	Replikasi 2	Replikasi 3	Replikasi 1	Replikasi 2	Replikasi 3	
0,25	0,269	0,267	0,277	11,53	11,44	11,88	11,62 ± 0,23
0,50	0,297	0,298	0,3	12,75	12,79	12,88	12,81 ± 0,07
0,75	0,303	0,31	0,312	13,01	13,32	13,41	13,25 ± 0,21
1,0	0,319	0,315	0,313	13,71	13,54	13,45	13,57 ± 0,13
1,5	0,332	0,323	0,318	14,28	13,89	13,67	13,94 ± 0,31
2,0	0,367	0,368	0,37	15,81	15,85	15,94	15,87 ± 0,07
2,5	0,387	0,399	0,408	16,68	17,21	17,60	17,16 ± 0,46
3,0	0,442	0,446	0,44	19,08	19,26	19,00	19,11 ± 0,13
4,0	0,493	0,499	0,478	21,31	21,57	20,66	21,18 ± 0,47
5,0	0,538	0,576	0,575	23,28	24,93	24,89	24,37 ± 0,95
6,0	0,693	0,683	0,697	30,04	29,61	30,22	29,96 ± 0,31

Contoh perhitungan :

Dari hasil penganmatan absorbansi pelepasan propranolol HCl dimasukan ke dalam persamaan kurva baku terpilih yaitu

$$Y = 0,005 + 0,0229x,$$

Dimana:

Y= Absorbansi

X= Konsentrasi (ppm)

Misal :

Y = 0,193 (penetrasi formula 1, replikasi 1)

Maka,

$$0,193 = 0,005 + 0,0229x$$

$$X = 8,21 \text{ ppm}$$

Dst

LAMPIRAN K

HASIL UJI ANAVA PELEPASAN DENGAN *FACTORIAL DESIGN*

Use your mouse to right click on individual cells for definitions.

Response	1	Pelepasan		
ANOVA for selected factorial model				
Analysis of variance table [Partial sum of squares - Type III]				
Source	Sum of Squares	df	Mean Square	F Value
Model	538.47	3	179.49	4158.84
<i>A-Eudragit RL-100</i>		507.65	1	507.65
<i>B-Gliserol</i>		27.39	1	27.39
<i>AB</i>		3.42	1	3.42
Pure Error		0.35	8	0.043
Cor Total		538.81	11	

The Model F-value of 4158.84 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.

In this case A, B, AB are significant model terms.

Values greater than 0.1000 indicate the model terms are not significant.

If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.0.21

Mean17.04

C.V. %1.22

PRESS0.78

R-Squared

Adj R-Squared

Pred R-Squared

Adeq Precision

The "Pred R-Squared" of 0.9986 is in reasonable agreement with the "Adj R-Squared" of 0.9991.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable.

Your

ratio of 133.648 indicates an adequate signal. This model can be used to navigate the design space.

Coefficient	Standard	95% CI	95% CI	
Factor	Estimate	df	Error	Low
Intercept	17.04	1	0.060	16.90
A-Eudragit RL-100	-6.50	1	0.060	0.060
B-Gliserol	-1.51	1	0.060	0.060
AB	-0.53	1	0.060	-0.67

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Pelepasan} &= \\ &+17.04 \\ &-6.50 * A \\ &-1.51 * B \\ &-0.53 * A * B \end{aligned}$$

Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{Pelepasan} &= \\ &+17.03917 \\ &-6.50417 * \text{Eudragit RL-100} \\ &-1.51083 * \text{Gliserol} \\ &-0.53417 * \text{Eudragit RL-100} * \text{Gliserol} \end{aligned}$$

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.

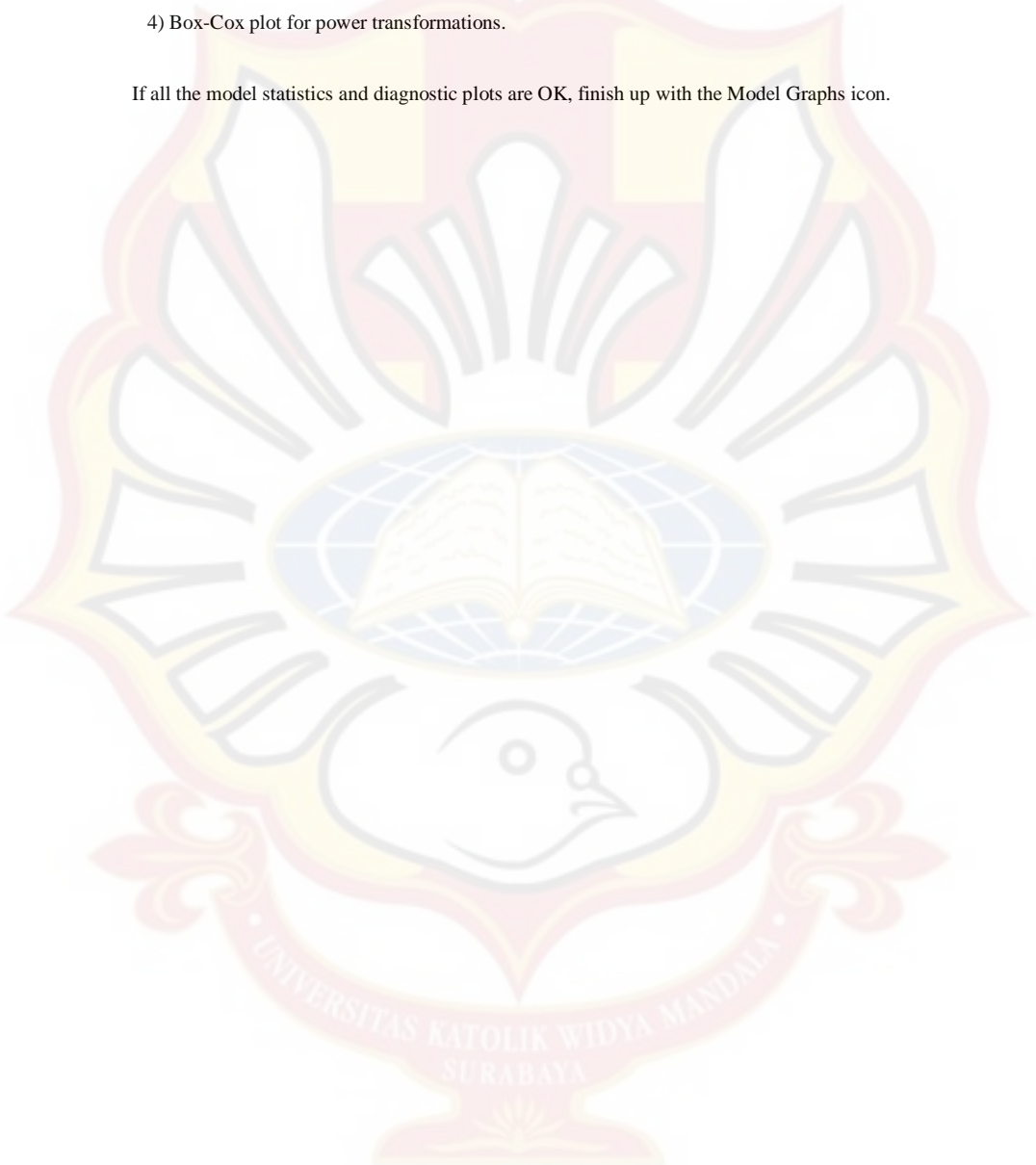
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

- 1) Normal probability plot of the studentized residuals to check for normality of residuals.

- 2) Studentized residuals versus predicted values to check for constant error.
- 3) Externally Studentized Residuals to look for outliers, i.e., influential values.
- 4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.



LAMPIRAN L

HASIL UJI ANAVA PENETRASI DENGAN FACTORIAL DESIGN

Use your mouse to right click on individual cells for definitions.

Response **2** **Penetrasi**

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value
Model	6.95	3	2.32	161.99
<i>A-Eudragit RL-100</i>		6.47	1	6.47
<i>B-Gliserol</i>		0.052	1	0.052
<i>AB0.43</i>		1	0.43	30.03
Pure Error		0.11	8	0.014
Cor Total		7.06	11	

The Model F-value of 161.99 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.

In this case A, AB are significant model terms.

Values greater than 0.1000 indicate the model terms are not significant.

If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.12	
Mean	2.48	Adj R-Squared
C.V. %	4.82	Pred R-Squared
PRESS	0.26	Adeq Precision

The "Pred R-Squared" of 0.9636 is in reasonable agreement with the "Adj R-Squared" of 0.9777.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable.

Your

ratio of 26.747 indicates an adequate signal. This model can be used to navigate the design space.

Coefficient	Standard	95% CI	
FactorEstimate	df	Low	
Intercept	2.48	1	0.035
A-Eudragit RL-100	-0.73	1	0.035
B-Gliserol	-0.066	1	0.035
AB-0.19	1	0.035	-0.27

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Penetrasi} &= \\ &+2.48 \\ &-0.73 \quad * A \\ &-0.066 \quad * B \\ &-0.19 \quad * A * \end{aligned}$$

Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{Penetrasi} &= \\ &+2.48250 \\ &-0.73417 \quad * \text{Eudragit RL-100} \\ &-0.065833 \quad * \text{Gliserol} \\ &-0.18917 \quad * \text{Eudragit RL-100} * \text{Gliserol} \end{aligned}$$

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.

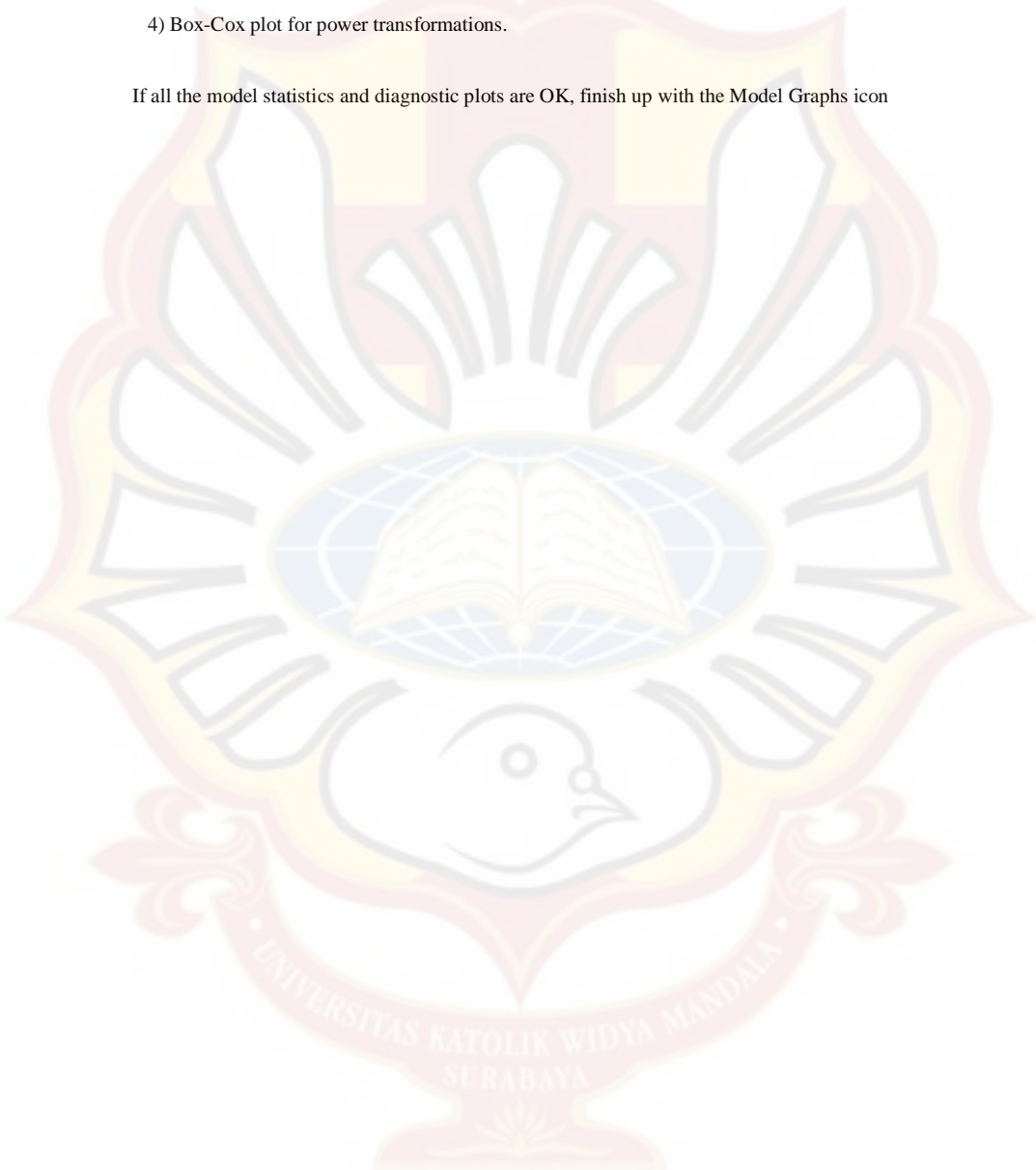
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

- 1) Normal probability plot of the studentized residuals to check for normality of residuals.

- 2) Studentized residuals versus predicted values to check for constant error.
- 3) Externally Studentized Residuals to look for outliers, i.e., influential values.
- 4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon



LAMPIRAN M
PERHITUNGAN PELEPASAN dan PENETRASI TEORITIS

Patch pada percobaan berbentuk lingkaran dengan diameter 3 cm memberikan fluk pelepasan sebesar 17,04 $\mu\text{g/mL}$ dan fluks penetrasi 2,48 $\mu\text{g/mL}$.

Maka, untuk patch berukuran panjang 3 cm dan lebar 4 cm dirancang untuk pemakaian selama 6 jam adalah:

$$\text{Pelepasan} : \frac{(3 \times 4)}{(3,14 \times 1,5 \times 1,5)} \times 17,04 \mu \frac{\text{g}}{\text{mL}} \times 6 \text{ jam} = 173,66 \mu\text{g/mL}$$

$$\text{Penetrasi} : \frac{(3 \times 4)}{(3,14 \times 1,5 \times 1,5)} \times 2,48 \mu \frac{\text{g}}{\text{mL}} \times 6 \text{ jam} = 25,27 \mu\text{g/mL}$$