

LAMPIRAN A
PERHITUNGAN STATISTIK KURVA BAKU

Data Kurva Baku Atenolol dalam Larutan Dapar Fosfat Isotonis pH 6,8, Hari ke-1.

Penimbangan Atenolol = 50,5 mg

Konsentrasi (ppm)	Absorbansi	X²	Y²	XY
1,01	0,029	1,020	0,001	0,029
3,03	0,031	9,181	0,001	0,094
5,05	0,045	2,503	0,002	0,227
15,15	0,104	229,523	0,011	1,576
25,25	0,159	637,563	0,025	4,015
35,35	0,191	1249,623	0,036	6,752
50,50	0,266	2550,250	0,071	13,433
65,65	0,350	4309,923	0,123	22,978
80,80	0,424	6528,640	0,180	34,259
95,95	0,485	9206,403	0,235	46,536
		$\Sigma = 24747,626$	$\Sigma = 0,685$	$\Sigma = 129,898$

Data Kurva Baku Atenolol dalam Larutan Dapar Fosfat Isotonis pH 6,8, Hari ke-2.

Penimbangan Atenolol = 50,5 mg

Konsentrasi (ppm)	Absorbansi	X ²	Y ²	XY
1,01	0,017	1,020	0,000	0,017
3,03	0,021	9,181	0,000	0,064
5,05	0,024	25,503	0,001	0,121
15,15	0,077	229,523	0,006	1,167
25,25	0,128	637,563	0,016	3,232
35,35	0,176	1249,623	0,031	6,222
50,50	0,252	2550,250	0,064	12,726
65,65	0,321	4309,923	0,103	21,074
80,80	0,391	6528,640	0,153	31,593
95,95	0,462	9206,403	0,213	44,329
		$\Sigma=24747,626$	$\Sigma=0,587$	$\Sigma=120,544$

Data Kurva Baku Atenolol dalam Larutan Dapar Fosfat Isotonis pH 6,8, Hari ke-3.

Penimbangan Atenolol = 50,5 mg

Konsentrasi (ppm)	Absorbansi	X ²	Y ²	XY
1,01	0,024	1,020	0,001	0,024
3,03	0,034	9,181	0,001	0,103
5,05	0,051	25,503	0,003	0,258
15,15	0,089	229,523	0,008	1,348
25,25	0,142	637,563	0,020	3,586
35,35	0,191	1249,623	0,036	6,752
50,50	0,258	2550,250	0,067	13,029
65,65	0,338	4309,923	0,114	22,190
80,80	0,410	6528,640	0,168	33,128
95,95	0,482	9206,403	0,232	46,248
		$\Sigma=24747,626$	$\Sigma = 0,650$	$\Sigma=126,665$

Hari	ΣX^2	ΣXY	ΣY^2	N	SSi	RDF
I	24747,626	129,898	0,685	10	0,679	9
II	24747,626	120,544	0,587	10	0,583	9
III	24747,626	126,665	0,650	10	0,645	9
74242,878		377,107	1,922		1,907	

$$SSc = \Sigma Yc - [\Sigma XYc / \Sigma Xc]$$

$$= 1,922 - [377,107 / 74242,878]$$

$$= 1,917$$

$$SSp = 1,907$$

$$\begin{aligned} F_{\text{hitung}} &= (SSc - SSp / k - 1) / (SSp/27) \\ &= (1,917 - 1,907/3-1) / (1,907/27) \\ &= 0,071 \end{aligned}$$

$$F_{\text{hitung}} < F_{\text{tabel}} \text{ } 0,05 (2 ; 27) = 3,35$$



LAMPIRAN B
PERHITUNGAN UJI AKURASI DAN PRESISI

Replikasi	%	Abs	C (ppm)	C Teoritis (ppm)	% Perolehan Kembali
1	80	0,083	15,9744	16,08	99,34
	100	0,102	19,9609	20,20	98,82
	120	0,121	23,9473	24,00	99,78
2	80	0,084	16,1843	16,02	101,03
	100	0,104	20,3805	20,20	100,89
	120	0,124	24,5768	24,24	101,39
3	80	0,083	15,9744	16,18	98,73
	100	0,105	20,1707	20,28	99,46
	120	0,124	24,5768	24,40	100,72

Keterangan :

% Perolehan kembali = $\left[\frac{C}{C_{\text{teoritis}}} \right] \times 100\%$

LAMPIRAN C
PEHITUNGAN PENETAPAN KADAR ATENOLOL DALAM FILM

Formula	Rep	Abs	C (ppm)	Q ($\mu\text{g}/\text{cm}^2$)	Q teoritis ($\mu\text{g}/\text{cm}^2$)	% Kadar Atenolol
1	1	0,168	33,809	1690,500	1600,000	105,66
	2	0,164	32,969	1648,500		103,03
	3	0,163	32,759	1638,000		102,38
2	1	0,173	34,860	1743,000	1600,000	108,94
	2	0,169	34,018	1701,000		106,31
	3	0,171	34,438	1722,000		107,63
3	1	0,166	33,389	1669,500	1600,000	104,34
	2	0,170	34,228	1711,500		106,97
	3	0,169	34,018	1701,000		106,31
4	1	0,158	31,710	1585,500	1600,000	99,09
	2	0,162	32,550	1627,500		101,72
	3	0,160	32,130	1606,500		100,41

LAMPIRAN D
PERHITUNGAN UJI HOMOGENITAS FILM ATENOLOL

Formula	Rep	Tempat Pengambilan	Abs	C (ppm)	Q (µg/cm ²)	Qt	SD	KV (%)
I	1	a	0,168	33,809	1690,450	1697,433	12,095	0,713
		b	0,168	33,809	1690,450			
		c	0,170	34,228	1711,400			
	2	a	0,164	32,969	1648,450	1613,483	32,051	1,986
		b	0,160	32,130	1606,500			
		c	0,158	31,710	1585,500			
	3	a	0,161	32,340	1617,000	1623,983	12,095	0,745
		b	0,161	32,340	1617,000			
		c	0,163	32,759	1637,950			
II	1	a	0,173	34,858	1742,900	1749,917	32,007	1,829
		b	0,177	35,697	1784,850			
		c	0,171	34,440	1722,000			
	2	a	0,168	33,809	1690,450	1707,917	21,837	1,279
		b	0,169	34,018	1700,900			
		c	0,172	34,648	1732,400			
	3	a	0,171	34,440	1722,000	1714,950	32,062	1,870
		b	0,167	33,599	1679,950			
		c	0,173	34,858	1742,900			

III	1	a	0,166	33,389	1669,450	1679,933	27,752	1,652
		b	0,170	34,228	1711,400			
		c	0,165	33,179	1658,950			
	2	a	0,170	34,228	1711,400	1704,417	12,095	0,710
		b	0,170	34,228	1711,400			
		c	0,168	33,809	1690,450			
	3	a	0,169	34,018	1700,900	1686,933	12,095	0,717
		b	0,167	33,599	1679,950			
		c	0,167	33,599	1679,950			
IV	1	a	0,158	31,710	1585,500	1613,500	32,078	1,988
		b	0,164	32,970	1648,500			
		c	0,160	32,130	1606,500			
	2	a	0,172	34,648	1732,400	1714,900	16,039	0,935
		b	0,170	34,228	1711,400			
		c	0,169	34,018	1700,900			
	3	a	0,160	32,130	1606,500	1606,500	31,450	1,958
		b	0,157	31,501	1575,050			
		c	0,163	32,759	1637,950			

LAMPIRAN E
HASIL UJI PELEPASAN FILM *BUCCOADHESIVE* ATENOLOL

Perhitungan Uji Pelepasan Film Atenolol, Formula 1

Replikasi	t (menit)	Abs	C (ppm)	Q ($\mu\text{g}/\text{cm}^2$)
1	0,083	0,068	15,500	320,860
	0,167	0,079	18,250	377,787
	0,25	0,093	21,750	450,239
	0,333	0,089	20,750	429,538
	0,417	0,099	23,250	481,290
	0,5	0,122	29,000	600,318
	1	0,173	41,750	864,252
	2	0,222	54,000	1117,834
	3	0,241	58,750	1216,162
	4	0,252	61,500	1273,089
	5	0,265	64,750	1340,366
	6	0,291	71,250	1474,920
2	0,083	0,040	8,500	175,955
	0,167	0,055	12,250	253,583
	0,25	0,072	16,500	341,561
	0,333	0,082	19,000	393,312
	0,417	0,091	21,250	439,889
	0,5	0,110	26,000	538,217
	1	0,168	40,500	838,376
	2	0,197	47,750	988,455
	3	0,203	49,250	1019,506
	4	0,214	52,000	1076,433
	5	0,244	59,500	1231,688
	6	0,292	71,500	1480,096

3	0,083	0,043	9,250	191,481
	0,167	0,053	11,750	243,232
	0,25	0,075	17,250	357,086
	0,333	0,099	23,250	481,290
	0,417	0,101	23,750	491,640
	0,5	0,141	33,750	698,646
1	0,171	41,250	853,901	
2	0,237	57,750	1195,462	
3	0,242	59,000	1221,338	
4	0,251	61,250	1267,914	
5	0,263	64,250	1330,016	
6	0,286	70,000	1449,045	

t (jam)	Rep 1	Rep 2	Rep 3	Qt ($\mu\text{g}/\text{cm}^2$)	SD
0,083	320,860	175,955	191,481	229,432	79,558
0,167	377,787	253,583	243,232	291,534	74,876
0,25	450,239	341,561	357,086	382,962	58,779
0,333	429,538	393,312	481,290	434,713	44,217
0,417	481,290	439,889	491,640	470,939	27,384
0,5	600,318	538,217	698,646	612,394	80,894
1	864,252	838,376	853,901	852,176	13,024
2	1117,834	988,455	1195,462	1100,584	104,576
3	1216,162	1019,506	1221,338	1152,335	115,062
4	1273,089	1076,433	1267,914	1205,812	112,075
5	1340,366	1231,688	1330,016	1300,690	59,981
6	1474,920	1480,096	1449,045	1468,020	16,636

Perhitungan Uji Pelepasan Film Atenolol, Formula 2

Replikasi	t (jam)	Abs	C (ppm)	Q (µg/cm ²)
1	0,083	0,049	10,750	222,532
	0,167	0,068	15,500	320,860
	0,25	0,075	17,250	357,086
	0,333	0,097	22,750	470,939
	0,417	0,129	30,750	636,545
	0,5	0,105	24,750	512,341
	1	0,160	38,500	796,975
	2	0,206	50,000	1035,032
	3	0,255	62,250	1288,615
	4	0,278	68,000	1407,643
	5	0,265	64,750	1340,366
	6	0,326	80,000	1656,051
2	0,083	0,063	14,250	294,984
	0,167	0,079	18,250	377,787
	0,25	0,079	18,250	377,787
	0,333	0,091	21,250	439,889
	0,417	0,103	24,250	501,990
	0,5	0,106	25,000	517,516
	1	0,195	47,250	978,105
	2	0,191	46,250	957,404
	3	0,241	58,750	1216,162
	4	0,278	68,000	1407,643
	5	0,273	66,750	1381,768
	6	0,355	87,250	1806,131
3	0,083	0,032	6,500	134,554
	0,167	0,074	17,000	351,911
	0,25	0,081	18,750	388,137
	0,333	0,123	29,250	605,494
	0,417	0,136	32,500	672,771
	0,5	0,142	34,000	703,822
	1	0,194	47,000	972,930
	2	0,205	49,750	1029,857
	3	0,239	58,250	1205,812
	4	0,250	61,000	1262,739
	5	0,246	60,000	1242,038
	6	0,323	79,250	1640,525

t (jam)	Rep 1	Rep 2	Rep 3	Qt ($\mu\text{g}/\text{cm}^2$)	SD
0,083	222,532	294,984	134,554	217,357	80,340
0,167	320,860	377,787	351,911	350,186	28,503
0,25	357,086	377,787	388,137	374,337	15,810
0,333	470,939	439,889	605,494	505,441	88,028
0,417	636,545	501,990	672,771	603,769	89,984
0,5	512,341	517,516	703,822	577,893	109,088
1	796,975	978,105	972,930	916,003	103,114
2	1035,032	957,404	1029,857	1007,431	43,401
3	1288,615	1216,162	1205,812	1236,863	45,116
4	1407,643	1407,643	1262,739	1359,342	83,661
5	1340,366	1381,768	1242,038	1321,391	71,771
6	1656,051	1806,131	1640,525	1700,902	91,460

Perhitungan Uji Pelepasan Film Atenolol, Formula 3

Replikasi	t (menit)	Abs	C (ppm)	Q ($\mu\text{g}/\text{cm}^2$)
1	0,083	0,079	18,250	377,787
	0,167	0,112	26,500	548,567
	0,25	0,129	30,750	636,545
	0,333	0,175	42,250	874,602
	0,417	0,187	45,250	936,704
	0,5	0,201	48,750	1009,156
	1	0,231	56,250	1164,411
	2	0,282	69,000	1428,344
	3	0,301	73,750	1526,672
	4	0,295	72,250	1495,621
	5	0,349	85,750	1775,080
	6	0,385	94,750	1961,385
2	0.083	0,082	19,000	393,312
	0.167	0,094	22,000	455,414
	0.25	0,118	28,000	579,618
	0.333	0,166	40,000	828,025
	0.417	0,174	42,000	869,427
	0.5	0,193	46,750	967,755
	1	0,210	51,000	1055,732
	2	0,289	70,750	1464,570
	3	0,333	81,750	1692,277
	4	0,306	75,000	1552,548
	5	0,355	87,250	1806,131
	6	0,420	103,500	2142,516
3	0,083	0,075	17,250	357,086
	0,167	0,109	25,750	533,041
	0,25	0,139	33,250	688,296
	0,333	0,144	34,500	714,172
	0,417	0,177	42,750	884,952
	0,5	0,185	44,750	926,354
	1	0,233	56,750	1174,761
	2	0,309	75,750	1568,073
	3	0,333	81,750	1692,277
	4	0,311	76,250	1578,424
	5	0,366	90,000	1863,057
	6	0,418	103,000	2132,166

t (jam)	Rep 1	Rep 2	Rep3	Qt ($\mu\text{g}/\text{cm}^2$)	SD
0,083	377,787	393,312	357,086	376,062	18,17
0,167	548,567	455,414	533,041	512,341	49,91
0,25	636,545	579,618	688,296	634,820	54,36
0,333	874,602	828,025	714,172	805,600	82,53
0,417	936,704	869,427	884,952	897,028	35,23
0,5	1009,156	967,755	926,354	967,755	41,40
1	1164,411	1055,732	1174,761	1131,635	65,94
2	1428,344	1464,570	1568,073	1486,996	72,51
3	1526,672	1692,277	1692,277	1637,075	95,61
4	1495,621	1552,548	1578,424	1542,197	42,36
5	1775,080	1806,131	1863,057	1814,756	44,62
6	1961,385	2142,516	2132,166	2078,689	101,72

Perhitungan Uji Pelepasan Film Atenolol, Formula 4

Replikasi	t (jam)	Abs	C(ppm)	Q (µg/cm ²)
1	0,083	0,024	4,500	93,153
	0,167	0,058	13,000	269,108
	0,25	0,047	10,250	212,182
	0,333	0,076	17,500	362,261
	0,417	0,088	20,500	424,363
	0,5	0,088	20,500	424,363
	1	0,130	31,000	641,720
	2	0,161	38,750	802,150
	3	0,144	34,500	714,172
	4	0,183	44,250	916,003
	5	0,212	51,500	1066,083
	6	0,227	55,250	1143,710
2	0.083	0,031	6,250	129,379
	0.167	0,064	14,500	300,159
	0.25	0,058	13,000	269,108
	0.333	0,089	20,750	429,538
	0.417	0,085	19,750	408,838
	0.5	0,099	23,250	481,290
	1	0,110	26,000	538,217
	2	0,143	34,250	708,997
	3	0,133	31,750	657,245
	4	0,186	45,000	931,529
	5	0,228	55,500	1148,885
	6	0,239	58,250	1205,812
3	0,083	0,029	5,750	119,029
	0,167	0,065	14,750	305,334
	0,25	0,069	15,750	326,035
	0,333	0,105	24,750	512,341
	0,417	0,099	23,250	481,290
	0,5	0,110	26,000	538,217
	1	0,140	33,500	693,471
	2	0,146	35,000	724,522
	3	0,166	40,000	828,025
	4	0,191	46,250	957,404
	5	0,237	57,750	1195,462
	6	0,242	59,000	1221,338

t (jam)	rep 1	rep 2	rep 3	Qt ($\mu\text{g}/\text{cm}^2$)	SD
0,083	93,153	129,379	119,029	113,854	18,659
0,167	269,108	300,159	305,334	291,534	19,593
0,25	212,182	269,108	326,035	269,108	56,927
0,333	362,261	429,538	512,341	434,713	75,174
0,417	424,363	408,838	481,290	438,163	38,147
0,5	424,363	481,290	538,217	481,290	56,927
1	641,720	538,217	693,471	624,469	79,052
2	802,150	708,997	724,522	745,223	49,907
3	714,172	657,245	828,025	733,148	86,957
4	916,003	931,529	957,404	934,979	20,915
5	1066,083	1148,885	1195,462	1136,810	65,529
6	1143,710	1205,812	1221,338	1190,287	41,077

Fluks Pelepasan untuk Masing-Masing Formula

Formula	Pelepasan ($\mu\text{g}/\text{cm}^2$)		
	Rep 1	Rep 2	Rep 3
1	193,40	191,80	198,80
2	222,10	232,30	212,50
3	225,50	254,70	250,00
4	148,90	160,50	155,90

LAMPIRAN F
HASIL UJI SWELLING INDEX

Formula	Replikasi	Wo (g)	Wt (g)	Swelling Index	Rata-rata Swelling Index	SD
F1	1	0,062	0,114	0,846	0,946	0,269
	2	0,052	0,090	0,742		
	3	0,068	0,153	1,250		
F2	1	0,052	0,132	1,551	1,422	0,172
	2	0,058	0,145	1,487		
	3	0,067	0,149	1,227		
F3	1	0,059	0,135	1,287	1,346	0,188
	2	0,066	0,144	1,195		
	3	0,055	0,140	1,556		
F4	1	0,042	0,131	2,112	2,136	0,036
	2	0,046	0,146	2,177		
	3	0,045	0,141	2,119		

LAMPIRAN G
HASIL UJI ADHESION TIME

Formula	Replikasi	t (detik)	t rata-rata	SD
1	1	720	690,67	30,02
	2	660		
	3	692		
2	1	1440	1457,00	39,36
	2	1429		
	3	1502		
3	1	976	1010,00	33,51
	2	1043		
	3	1011		
4	1	1745	1740,00	12,29
	2	1726		
	3	1749		

[illegible]

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Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F
Model	0.000	3	0.000		significant
<i>A-Gelatin</i>	0.000	1	0.000		
<i>B-Gliserin</i>	0.000	1	0.000		
<i>AB</i>	0.000	1	0.000		
Pure Error	0.000	8	0.000		
Cor Total	0.000	11			

[illegible]

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.

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Folding Endurance} &= \\ &+250.00 \\ &+0.000 * A \\ &+0.000 * B \\ &+0.000 * A * B \end{aligned}$$

LAMPIRAN I
HASIL UJI ANAVA SWELLING INDEX

Response 2 Swelling Index

ANOVA for selected factorial model

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

Source	Sum of Squares	df	Mean Square	F Value	Prob > F	p-value
Model	2.21	3	0.74	21.33	0.0004	significant
<i>A-Gelatin</i>	<i>1.20</i>	<i>1</i>	<i>1.20</i>	<i>34.84</i>	<i>0.0004</i>	
<i>B-Gliserin</i>	<i>0.93</i>	<i>1</i>	<i>0.93</i>	<i>27.01</i>	<i>0.0008</i>	
<i>AB</i>	<i>0.074</i>	<i>1</i>	<i>0.074</i>	<i>2.15</i>	<i>0.1808</i>	
Pure Error	0.28	8	0.034			
Cor Total	2.48	11				

The Model F-value of 21.33 implies the model is significant. There is only a 0.04% 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 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.

The "Pred R-Squared" of 0.7500 is in reasonable agreement with the "Adj R-Squared" of 0.8472.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 11.100 indicates an adequate signal. This model can be used to navigate the design space.

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Swelling Index} &= \\ &+1.46 \\ &+0.32 * A \\ &+0.28 * B \\ &+0.079 * A * B \end{aligned}$$

LAMPIRAN J
HASIL UJI ANAVA ADHESION TIME

Response 3 Adhesion Time
ANOVA for selected factorial model
Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	Prob > F	p-value
Model	1.952E+006	3	6.508E+005	698.95	< 0.0001	significant
<i>A-Gelatin</i>	1.679E+006	1	1.679E+006	1803.56	< 0.0001	
<i>B-Gliserin</i>	2.721E+005	1	2.721E+005	292.24	< 0.0001	
<i>AB</i>	990.08	1	990.08	1.06	0.3326	
Pure Error	7448.67	8	931.08			
Total	1.960E+006	11				

The Model F-value of 698.95 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 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.

The "Pred R-Squared" of 0.9914 is in reasonable agreement with the "Adj R-Squared" of 0.9948.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 59.563 indicates an adequate signal. This model can be used to navigate the design space.

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Adhesion Time} &= \\ &+1224.42 \\ &+374.08 * A \\ &+150.58 * B \\ &-9.08 * A * B \end{aligned}$$

LAMPIRAN K
ANALISA FAKTORIAL DESAIN PELEPASAN

Response	4	Release				
ANOVA for selected factorial model						
Analysis of variance table [Partial sum of squares - Type III]						
Source	Sum of Squares	df	Mean Square	F Value	p-value	Prob > F
Model	13092.82	3	4364.27	44.71		< 0.0001
significant						
<i>A-Gelatin</i>	2763.37	1	2763.37	28.31		0.0007
<i>B-Gliserin</i>	254.84	1	254.84	2.61		0.1448
<i>AB10074.61</i>	1	10074.61	103.21	< 0.0001		
Pure Error	780.89	8	97.61			
Cor Total	13873.71	11				

The Model F-value of 44.71 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.

The "Pred R-Squared" of 0.8734 is in reasonable agreement with the "Adj R-Squared" of 0.9226.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 15.480 indicates an adequate signal. This model can be used to navigate the design space.

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Release} &= \\ +203.86 & \\ -15.18 & * A \\ -4.61 & * B \\ -28.97 & * A * B \end{aligned}$$

Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{Release} &= \\ +203.85833 - 15.17500 & * \text{Gelatin} \\ -4.60833 & * \text{Gliserin} \\ -28.97500 & * \text{Gelatin} * \text{Gliserin} \end{aligned}$$

LAMPIRAN L

TABEL 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 M

TABEL UJI F

TABEL DISTRIBUSI F UNTUK 5% DAN 1%

Baris atas untuk taraf signifikansi 5%

Baris bawah untuk taraf signifikansi 1%

$V_2 = dk$ penyebut	$V_1 = dk$ pembilang																															
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞								
1	161 4052	200 4999	216 5403	225 5825	230 5764	234 5959	237 5928	239 5961	241 6022	242 6056	243 6082	244 6106	245 6142	246 6189	248 6208	249 6234	250 6258	251 6286	252 6302	253 6323	253 6334	254 6352	254 6361	254 6366								
2	18,51 98,49	19,00 99,01	19,16 99,17	19,25 99,25	19,30 99,30	19,33 99,33	19,36 99,34	19,37 99,36	19,38 97,38	19,39 99,40	19,41 99,41	19,42 99,42	19,43 99,44	19,44 99,45	19,45 99,46	19,46 99,47	19,47 99,48	19,48 99,48	19,49 99,49	19,49 99,49	19,50 99,50	19,50 99,50	19,50 99,50	19,50 99,50								
3	10,13 34,12	9,55 30,81	9,28 29,46	9,12 28,71	9,01 28,24	8,94 27,91	8,88 27,67	8,84 27,49	8,81 27,34	8,78 27,23	8,76 27,13	8,74 27,05	8,71 26,92	8,69 26,83	8,66 26,69	8,64 26,60	8,62 26,50	8,60 26,41	8,58 26,30	8,57 26,27	8,56 26,23	8,54 26,18	8,54 26,14	8,53 26,12								
4	7,71 21,20	6,94 18,00	6,59 16,69	6,39 15,98	6,26 15,52	6,16 15,21	6,09 14,98	6,04 14,80	6,00 14,66	5,96 14,54	5,93 14,45	5,91 14,37	5,87 14,24	5,84 14,15	5,80 14,02	5,77 13,93	5,74 13,83	5,71 13,74	5,70 13,69	5,68 13,61	5,66 13,57	5,65 13,52	5,64 13,48	5,63 13,46								
5	6,61 16,26	5,79 13,27	5,41 12,06	5,19 11,39	5,05 10,97	4,95 10,67	4,88 10,45	4,82 10,27	4,78 10,15	4,74 10,05	4,70 9,96	4,68 9,89	4,64 9,77	4,60 9,68	4,56 9,55	4,50 9,47	4,46 9,38	4,44 9,29	4,42 9,24	4,40 9,17	4,38 9,13	4,37 9,07	4,36 9,04	4,36 9,02								
6	5,99 13,74	5,14 10,92	4,76 9,78	4,53 9,15	4,39 8,75	4,28 8,47	4,21 8,26	4,15 8,10	4,10 7,98	4,06 7,87	4,03 7,79	4,00 7,72	3,96 7,60	3,92 7,52	3,87 7,39	3,84 7,31	3,81 7,23	3,77 7,14	3,75 7,09	3,72 7,02	3,71 6,99	3,69 6,94	3,68 6,90	3,67 6,88								
7	5,59 12,25	4,74 9,55	4,35 8,45	4,12 7,85	3,97 7,46	3,87 7,19	3,79 7,00	3,73 6,84	3,68 6,71	3,63 6,62	3,60 6,54	3,57 6,47	3,52 6,35	3,49 6,27	3,44 6,15	3,41 6,07	3,38 5,98	3,34 5,90	3,32 5,85	3,29 5,78	3,28 5,75	3,25 5,70	3,24 5,67	3,23 5,65								
8	5,32 11,26	4,46 8,65	4,07 7,59	3,84 7,01	3,69 6,63	3,58 6,37	3,50 6,19	3,44 6,03	3,39 5,91	3,34 5,82	3,31 5,74	3,28 5,67	3,23 5,56	3,20 5,48	3,15 5,36	3,12 5,28	3,08 5,20	3,05 5,11	3,03 5,06	3,00 5,00	2,98 4,96	2,96 4,91	2,94 4,88	2,93 4,86								
9	5,12 10,56	4,26 8,02	3,86 6,99	3,63 6,42	3,48 6,06	3,37 5,80	3,29 5,62	3,23 5,47	3,18 5,35	3,13 5,26	3,10 5,18	3,07 5,11	3,02 5,00	2,98 4,92	2,93 4,80	2,90 4,73	2,86 4,61	2,82 4,56	2,80 4,51	2,77 4,45	2,76 4,41	2,73 4,36	2,72 4,33	2,71 4,34								

$V_2 = dk$ penyebut	$V_1 = dk$ pembilang																							
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
10	4,96	4,10	3,71	3,48	3,33	3,22	3,14	3,07	3,02	2,97	2,94	2,91	2,86	2,82	2,77	2,74	2,70	2,67	2,64	2,61	2,59	2,56	2,55	2,54
	10,04	7,56	6,55	5,99	5,64	5,39	5,21	5,06	4,95	4,85	4,78	4,71	4,60	4,52	4,41	4,33	4,25	4,17	4,12	4,05	4,01	3,96	3,93	3,91
11	4,84	3,98	3,59	3,36	3,20	3,09	3,01	2,95	2,90	2,86	2,82	2,79	2,74	2,70	2,65	2,61	2,57	2,53	2,50	2,47	2,45	2,42	2,41	2,40
	9,65	7,20	6,22	5,67	5,32	5,07	4,88	4,74	4,63	4,54	4,46	4,40	4,29	4,21	4,10	4,02	3,94	3,86	3,80	3,74	3,70	3,66	3,62	3,60
12	4,75	3,88	3,49	3,26	3,11	3,00	2,92	2,85	2,80	2,76	2,72	2,69	2,64	2,60	2,54	2,50	2,46	2,42	2,40	2,36	2,35	2,32	2,31	2,30
	9,33	6,93	5,95	5,41	5,06	4,82	4,65	4,50	4,39	4,30	4,22	4,16	4,05	3,98	3,86	3,78	3,70	3,61	3,56	3,49	3,46	3,41	3,38	3,36
13	4,67	3,80	3,41	3,18	3,02	2,92	2,84	2,77	2,72	2,67	2,63	2,60	2,55	2,51	2,46	2,42	2,38	2,34	2,32	2,28	2,26	2,24	2,22	2,21
	9,07	6,70	5,74	5,20	4,86	4,62	4,44	4,30	4,19	4,10	4,02	3,96	3,85	3,78	3,67	3,59	3,51	3,42	3,37	3,30	3,27	3,21	3,18	3,16
14	4,60	3,74	3,34	3,11	2,96	2,85	2,77	2,70	2,65	2,60	2,56	2,53	2,48	2,44	2,39	2,35	2,31	2,27	2,24	2,21	2,19	2,16	2,14	2,13
	8,86	6,51	5,56	5,03	4,69	4,46	4,28	4,14	4,03	3,94	3,86	3,80	3,70	3,62	3,51	3,43	3,34	3,26	3,21	3,14	3,11	3,06	3,02	3,00
15	4,54	3,68	3,29	3,06	2,90	2,79	2,70	2,64	2,59	2,55	2,51	2,48	2,43	2,39	2,33	2,29	2,25	2,21	2,18	2,15	2,12	2,10	2,08	2,07
	8,68	6,36	5,42	4,89	4,56	4,32	4,14	4,00	3,89	3,80	3,73	3,67	3,56	3,48	3,36	3,29	3,20	3,12	3,07	3,00	2,97	2,92	2,89	2,87
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	2,13	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	2,08	2,04	2,02	1,99	1,97	1,96
	8,47	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
	8,28	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	2,62	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
	8,18	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	2,26	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	2,63	2,58	2,51	2,47	2,42	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	2,58	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

$V_2 = dk$ penyebut	$V_1 = dk$ pembilang																									
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞		
24	4,26	3,40	3,01	2,78	2,62	2,51	2,43	2,36	2,30	2,26	2,22	2,19	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	2,89	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	5,52	4,54	4,04	3,73	3,50	3,33	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	2,03		
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		
	7,58	5,39	4,51	4,02	3,70	3,47	3,30	3,17	3,06	2,98	2,90	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		
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		
34	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		
36	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		
	7,38	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		
38	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		
	7,35	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		
42	4,07	3,22	2,83	2,59	2,44	2,32	2,24	2,17	2,11	2,06	2,02	1,99	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	2,08	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	2,00	1,92	1,88	1,82	1,78	1,75		

LAMPIRAN N
SERTIFIKAT ANALISIS ATENOLOL

calao

Certificate of Analysis

CAS NO. 29122-68-7 - HS NO. 2924.29.90.90

Product:	ATENOLOL		
Batch No.:	AM20110038	Mfg. date:	March 2010
Quantity:	100 KG	Exp. date:	February 2015
Test	Specifications	Result	
Appearance	A white or almost white powder	Conform	
Solubility	Sparingly soluble in water, soluble in ethanol, slightly soluble in methylene chloride.	Conform	
Identification	Identification A, B, D. a) Melting Point: 152°C to 155°C b) By UV: 1.15 TO 1.20 c) T.L.C. to comply	154 °C. Conform Conform	
Appearance of solution	1.0% w/v solution in water should be clear & not more intensely coloured than degree 6 of the range of reference solutions of the most appropriate colour.	Conform	
Optical rotation	- 0.10° to + 0.10°	+ 0.007°	
Chlorides	NMT 0.1%	< 0.1%	
Loss on drying	NMT 0.5% w/w	0.31%	
Sulphated ash	NMT 0.1 % w/w	0.09%	
Assay (On dry basis)	99.0 - 101.0% w/w	99.9%	
Related substances	Any individual impurity: NMT 0.23% Total impurity: NMT 0.5%	0.05% 0.15%	
Additional tests			
Bulk density (*) 1) Unapped 2) Tapped (By 50 strokes)	Informative	0.37 gm/ml 0.59 gm/ml	
The product is conform to EP			
(*) Bulk density determined as per in-house requirement			

APPROVED

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