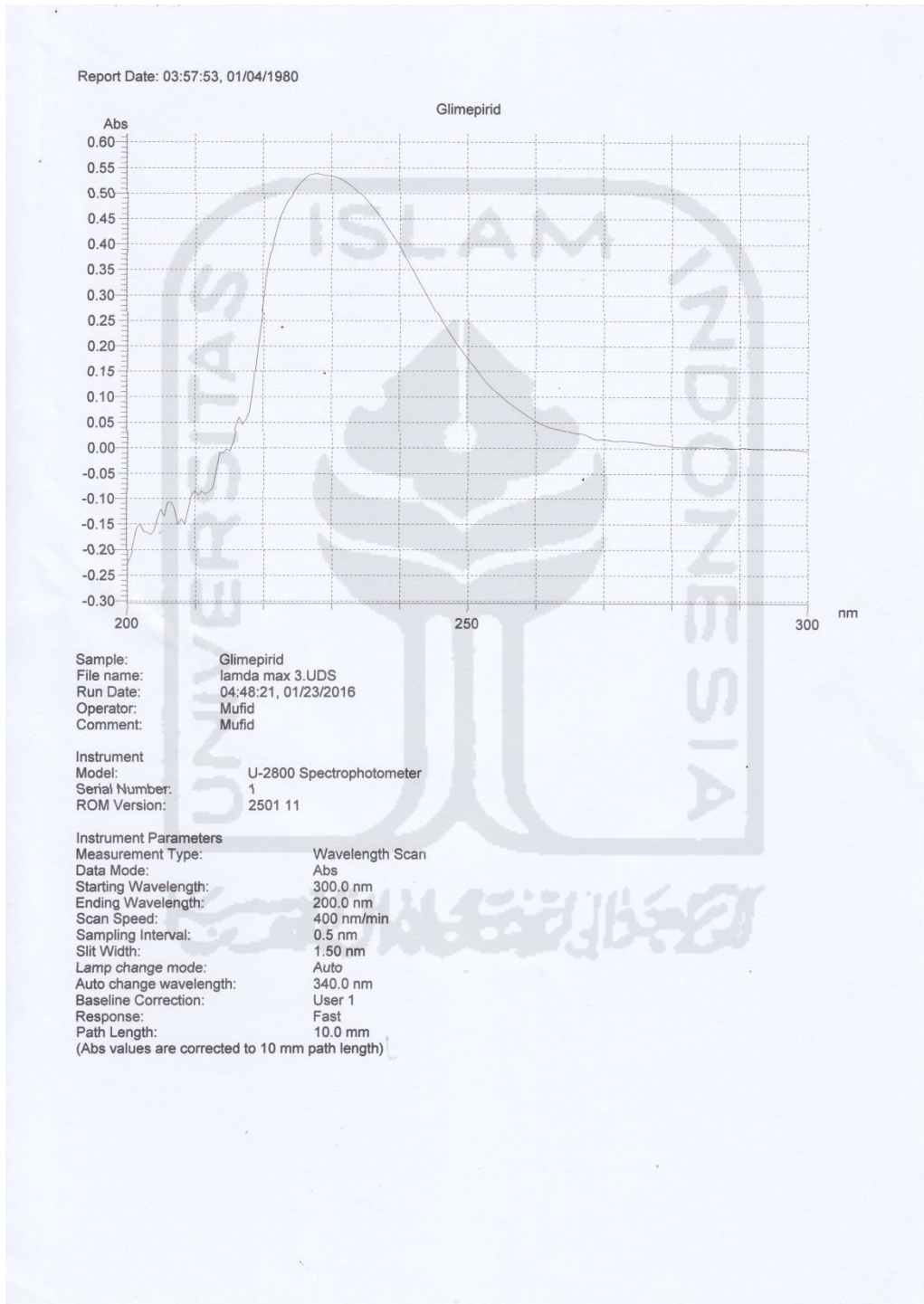


## LAMPIRAN

### Lampiran 1. Panjang gelombang maksimal dan kurva baku glimepirid



Processing Performed  
Savitsky-Golay Smoothed  
Smoothing Order: 3  
Number of Points: 7  
Number of Times: 1

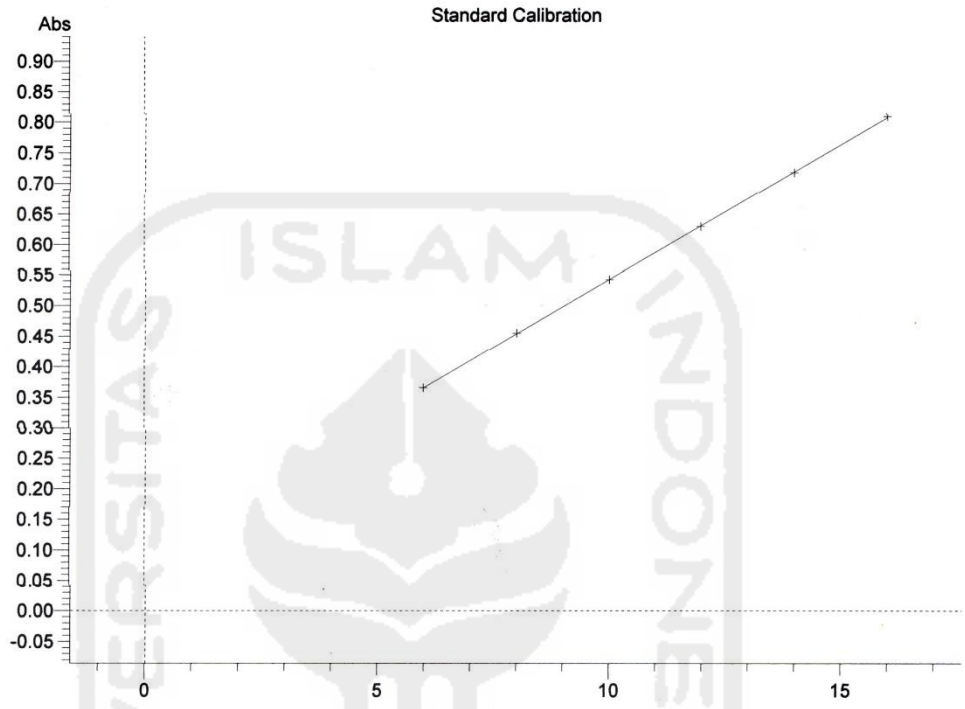
Peak Integration  
Method: Rectangular  
Sensitivity: 1  
Threshold: 0.0100

Peaks	Start (nm)	Apex (nm)	End (nm)	Height (Abs)	Area (Abs*nm)	Valley (nm)	Valley
1	300.0	227.5	207.5	0.539	13.805	207.5	-0.15
2	207.5	208.5	200.0	-0.107	-1.124	200.0	-0.22



### Kurva baku glimepirid

Report Date: 03:56:49, 01/04/1980



Sample: Glimepirid  
File Name: kurva baku glimepirid  
Run Date: 01:25:25, 01/04/1980  
Operator: Mufid  
Comment: Mufid

Instrument Model: U-2800 Spectrophotometer  
Serial Number: 1  
ROM Version: 2501 11

Instrument Parameters  
Measurement Type: Photometry  
Data Mode: Abs  
Number of Wavelengths: 1  
Wavelength 1: 227.5 nm  
Slit Width: 1.50 nm  
Lamp source: Auto  
Lamp change wavelength: 340.0 nm  
Baseline Correction: User 1  
Path Length: 10.0 mm  
(Abs values are corrected to 10 mm path length)

Std No. / Name	Abs(227.5)	Conc(ppm)	diff	RD	t
1 Standar 1	0.366	6.00	0.01	1.0077	0.2057
2 Standar 2	0.455	8.00	0.03	4.2726	0.8721
3 Standar 3	0.542	10.00	-0.02	-2.8508	-0.5819
4 Standar 4	0.630	12.00	-0.02	-4.2030	-0.8579
5 Standar 5	0.718	14.00	-0.03	-5.1704	-1.0553
6 Standar 6	0.810	16.00	0.04	6.9439	1.4173

**Lampiran 2.** Perhitungan kurva kalibrasi glimepirid dalam pelarut metanol

**1. Penimbangan glimepirid**

$$\frac{10 \text{ mg}}{100 \text{ ml}} = \frac{100 \text{ mg}}{1000 \text{ ml}} = 100 \text{ ppm}$$

**2. Pengenceran dan pembuatan seri kadar**

Dari 100 ppm diencerkan menjadi 50 ppm kemudian dibuat seri kadar 6 ppm, 8 ppm, 10 ppm, 12 ppm, 14 ppm, 16 ppm dengan rumus pengenceran  $M_1 \times V_1 = M_2 \times V_2$

6 ppm :

$$50 \text{ ppm} \times V_1 = 6 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 1,2 \text{ ml}$$

12 ppm :

$$50 \text{ ppm} \times V_1 = 12 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 2,4 \text{ ml}$$

8 ppm :

$$50 \text{ ppm} \times V_1 = 8 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 1,6 \text{ ml}$$

14 ppm :

$$50 \text{ ppm} \times V_1 = 14 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 2,8 \text{ ml}$$

10 ppm :

$$50 \text{ ppm} \times V_1 = 10 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 2 \text{ ml}$$

16 ppm :

$$50 \text{ ppm} \times V_1 = 16 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 3,2 \text{ ml}$$

**Lampiran 3.** Persamaan kurva baku glimepirid

Tabel kurva baku glimepirid

Konsentrasi (ppm)	Absorbansi (Abs)
6	0,366
8	0,455
10	0,542
12	0,63
14	0,718
16	0,81

$$a = 0,1$$

$$b = 0,044$$

$$r = 0,9999$$

$$y = bx + a$$

$$y = 0,044x + 0,1$$

**Lampiran 4.** Perhitungan kelarutan glimepirid

Tabel absorbansi sampel

Sampel	Absorbansi (Abs)	Rata-Rata (mg/ml)	SD
Blanko Myritol	0,004		
Myritol 1	0,366		
Myritol 2	0,393	4,449	0,015
Myritol 3	0,392		
Blanko Capryol	0,003		
Capryol 1	0,374		
Capryol 2	0,375	4,311	0,001
Capryol 3	0,373		
Blanko Tween 20	0,007		
Tween 20 1	0,484		
Tween 20 2	0,48	6,812	0,002
Tween 20 3	0,481		
Blanko Tween 80	0,1		
Tween 80	0,504		
Tween 80	0,512	7,030	0,005
Tween 80	0,512		
Blanko Labrasol	0,1		
Labrasol 1	0,576		
Labrasol 2	0,578	3,464	0,007
Labrasol 3	0,589		
Blanko Labrafil	0,1		
Labrafil 1	0,586		
Labrafil 2	0,589	1,814	0,020
Labrafil 3	0,622		

Contoh Perhitungan Kadar :

- Kadar Glimepirid dalam Myritol

$$- \text{ Abs sampel (y) = } 0,394 - 0,004 = 0,39$$

$$y = bx + a$$

$$y = 0,044 X_1 + 0,1$$

$$0,38 = 0,044 X_1 + 0,1$$

$$X_1 = 6,59$$

$$\text{Kadar} = X_1 \times \text{FP}$$

$$= 6,59 \times 700$$

$$= 4.613 \text{ ppm}$$

$$= 4.613 \text{ mg/1000 ml}$$

$$= 4,613 \text{ mg/ml}$$

$$\begin{aligned} \text{- Rata-rata Kadar} &= \frac{(4.613 + 4.232 + 4.582) \text{ mg/mL}}{3} \\ &= 4.449 \text{ mg/1000 mL} \end{aligned}$$

$$\text{- SD} = \sqrt{\frac{(4.613-4.449)^2 + (4.613-4.232)^2 + (4.613-4.582)^2}{3-1}}$$

$$= 0,015$$

Kadar Glimepirid dalam Myritol 318 = 4,449 ± 0,015 mg/ml



**Lampiran 5.** Hasil pengukuran respon formula optimal

1. Tabel hasil % transmittan

<i>Batch</i>	<b>Transmittan (%)</b>	<b>Rata-rata±SD (%)</b>	<b>Rata-rata % Transmittan (%)±SD</b>
R1	99,2783		
	99,2844	99,2798±0,004	
	99,2767		
R2	98,9960		
	99,0005	98,9985±0,002	99,11±0,002
	98,9990		
R3	99,0860		
	99,0814	99,0835±0,002	
	99,0829		

2. Tabel hasil ukuran partikel

<i>Batch</i>	<b>Ukuran partikel (nm)</b>	<b>Rata-rata±SD (nm)</b>	<b>Rata-rata ukuran partikel (nm) ±SD</b>
R1	20,4		
	20,9	20,9±0,5	
	21,5		
R2	20,5		
	21,1	20,7±0,32	20,8±0,31
	20,7		
R3	20,7		
	20,7	20,7±0,07	
	20,8		



## 3. Tabel hasil zeta potensial

<b>Batch</b>	<b>Zeta potensial (mV)</b>	<b>Rata-rata±SD (mV)</b>	<b>Rata-rata zeta potensial (mV) ±SD</b>
R1	-32,2		
	-26,5	-29,83±2,96	
	-30,8		
R2	-47,8		
	-39,4	-44,36±4,32	-34,34±2,84
	-45,9		
R3	-30		
	-28,5	-28,83±1,25	
	-28		

4. Tabel hasil *polydispersity index* (PDI)

<b>Batch</b>	<b><i>polydispersity</i> index (PDI)</b>	<b>Rata-rata±SD</b>	<b>Rata-rata PDI±SD</b>
R1	0,382		
	0,343	0,364±0,02	
	0,366		
R2	0,362		
	0,333	0,38±0,06	0,414±0,17
	0,446		
R3	0,033		
	0,0354	0,498±0,44	
	0,111		

### Lampiran 6. Perhitungan kurva baku glimepirid

Formula :

Myritol 318 = 17,23 %

Tween 80 = 52,77 %

PEG 400 = 30 %

Glimepirid = 2 mg

Sediaan SNEDDS = 400 ppm

Diambil 1000  $\mu$ l diencerkan dalam labu ukur 10 ml (40 ppm)

Rumus pengenceran :  $M_1 \times V_1 = M_2 \times V_2$

0,3 ppm :

$$40 \text{ ppm} \times V_1 = 0,3 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 0,0075 \text{ ml}$$

$$V_1 = 7,5 \mu\text{l}$$

0,6 ppm :

$$40 \text{ ppm} \times V_1 = 0,6 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 0,015 \text{ ml}$$

$$V_1 = 15 \mu\text{l}$$

0,4 ppm :

$$40 \text{ ppm} \times V_1 = 0,4 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 0,01 \text{ ml}$$

$$V_1 = 10 \mu\text{l}$$

0,7 ppm :

$$40 \text{ ppm} \times V_1 = 0,7 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 0,0175 \text{ ml}$$

$$V_1 = 15 \mu\text{l}$$

0,5 ppm :

$$40 \text{ ppm} \times V_1 = 0,5 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 0,0125 \text{ ml}$$

$$V_1 = 12,5 \mu\text{l}$$

0,8 ppm :

$$40 \text{ ppm} \times V_1 = 0,8 \text{ ppm} \times 10 \text{ ml}$$

$$V_1 = 0,02 \text{ ml}$$

$$V_1 = 20 \mu\text{l}$$

**Lampiran 7.** Persamaan kurva baku glimepirid

Tabel kurva kalibrasi

Konsentrasi (ppm)	Absorbansi
0,3	0,2842
0,4	0,3752
0,5	0,4505
0,6	0,5266
0,7	0,6047
0,8	0,6930

$$a = 0,0477$$

$$b = 0,8025$$

$$r = 0,9995$$

$$y = bx + a$$

$$y = 0,8025x + 0,0477$$

**Lampiran 8.** Perhitungan kadar glimepirid dalam sampel

Tabel absorbansi dan konsentrasi glimepirid dalam sediaan SNEDDS

<i>Batch</i>	<i>Abs</i>	<i>Konsentrasi</i> (ppm)	<i>Kadar</i> (%)	<i>Rata-rata kadar</i> (%)±SD
R1	0,4651			
	0,4651	0,5214	104,28	
	0,4651			
R2	0,4560			
	0,4560	0,5097	101,94	103,28 ± 1,2
	0,4560			
R3	0,4626			
	0,4626	0,5181	103,62	
	0,4626			

Contoh perhitungan kadar :

Konsentrasi (x) = 0,5214 ppm

Kadar = x . FP

$$= 0,5214 \times 800$$

$$= 417,12 \text{ ppm}$$

$$\% \text{ Kadar} = \frac{417,12 \text{ ppm}}{400 \text{ ppm}} \times 100 \%$$

$$= 104,28 \%$$

$$\text{Rata-rata } \% \text{ kadar} = \frac{104,28 \% + 101,94 \% + 103,62 \%}{3}$$

$$= 103,28 \%$$

### Lampiran 9. Perhitungan perbedaan prediksi dengan percobaan

Tabel perbandingan prediksi respon desain D-Optimal dengan hasil percobaan

Respon	Prediksi <i>Design Expert</i>	Hasil Percobaan	% Bias
Ukuran Partikel	19,74 nm	20,7 ± 0.31 nm	4,86 %

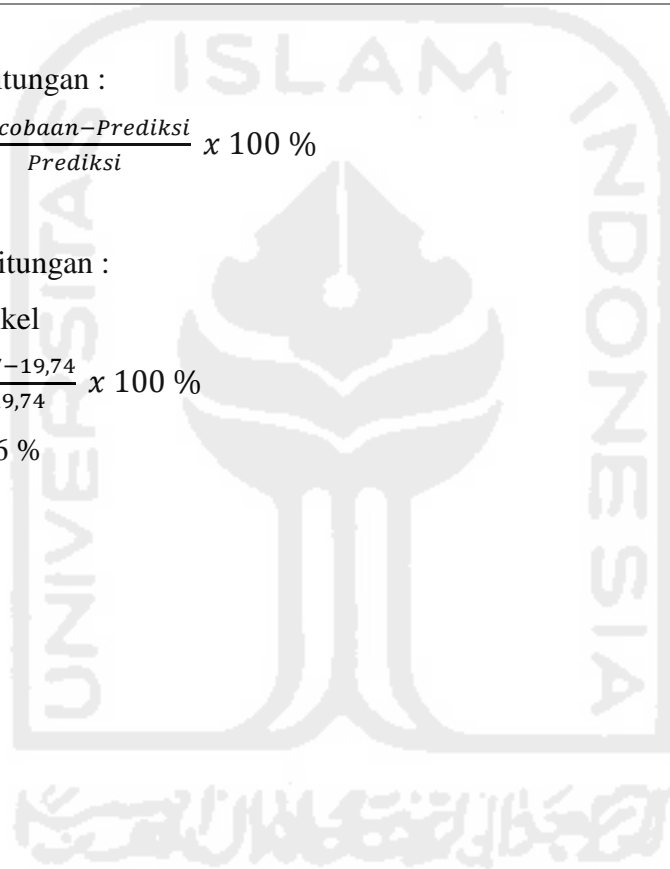
Rumus perhitungan :

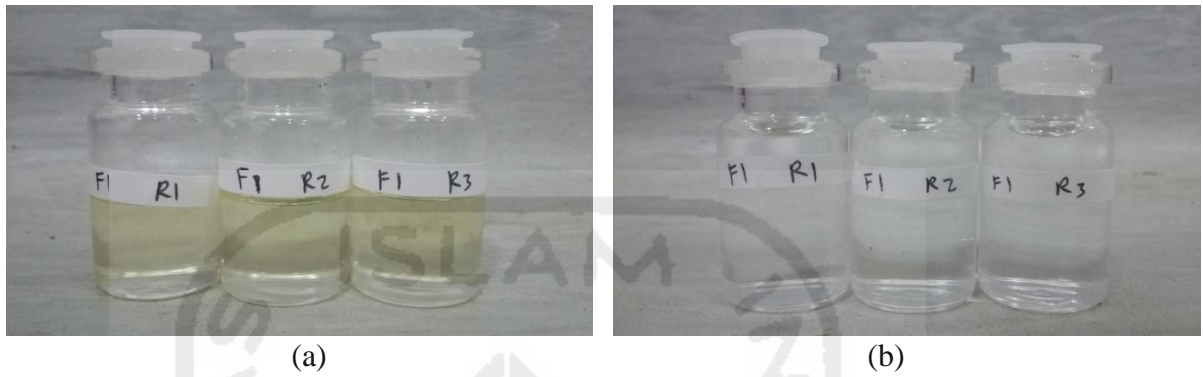
$$\% \text{ bias} = \frac{\text{Percobaan} - \text{Prediksi}}{\text{Prediksi}} \times 100 \%$$

Contoh perhitungan :

Ukuran partikel

$$\begin{aligned} \% \text{ bias} &= \frac{20,7 - 19,74}{19,74} \times 100 \% \\ &= 4,86 \% \end{aligned}$$



**Lampiran 10. Gambar sediaan**

Keterangan :

- (a) Gambar SNEDDS Glimepirid formula optimal
- (b) Gambar nanoemulsi formula optimal