

CHAPTER 8

8.0 APPENDICES

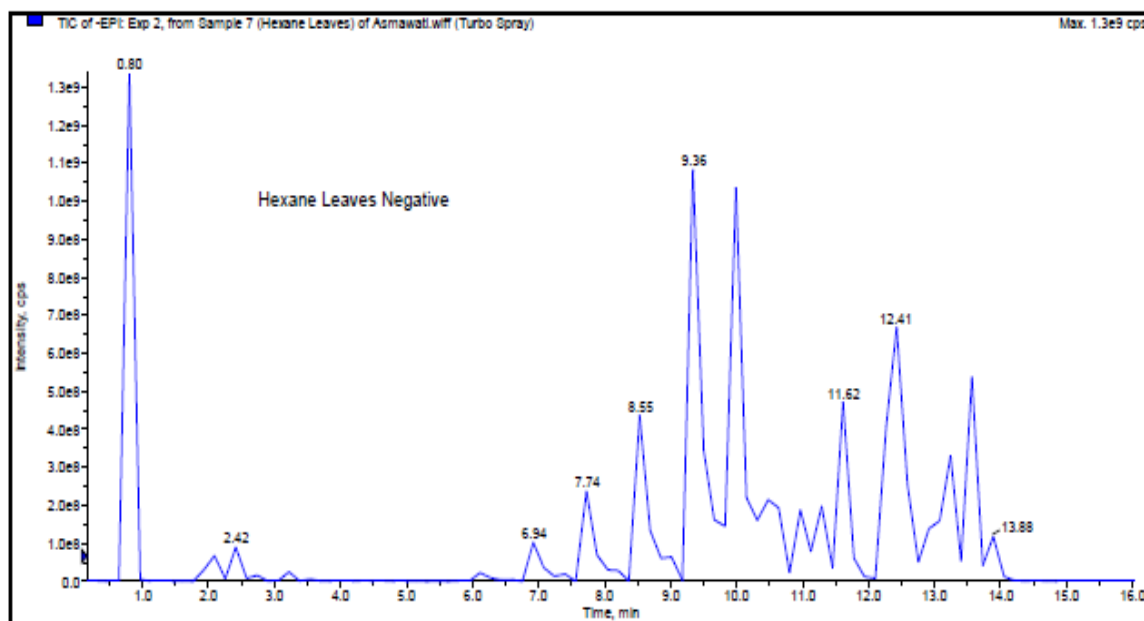


Figure 8.1 The full LCMS/MS chromatograms of leaves hexane crude extract from *L. flavescens*

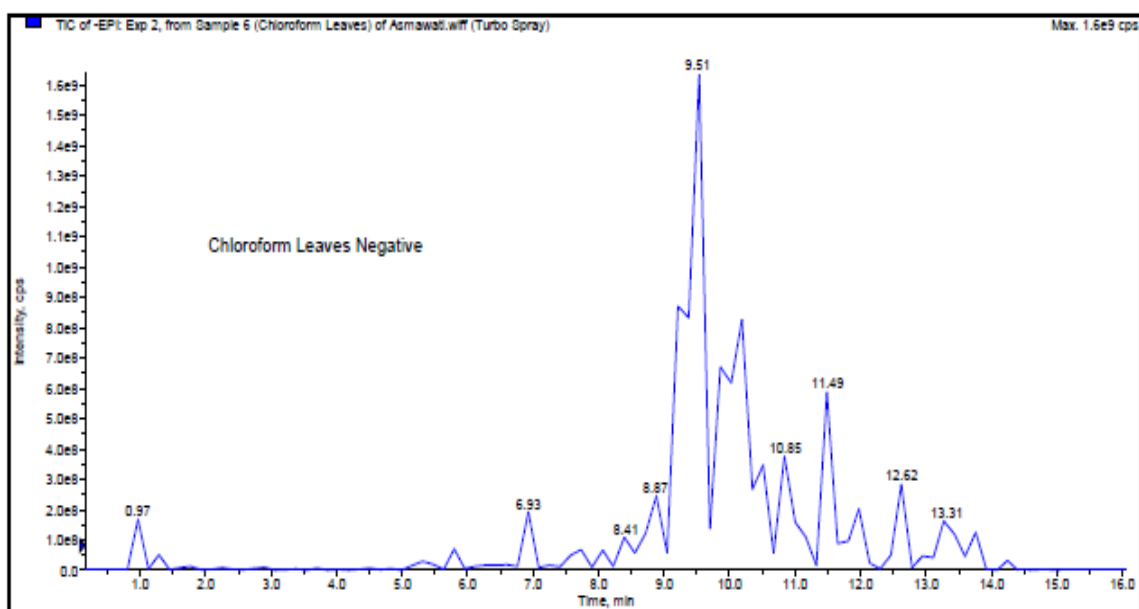


Figure 8.2 The full LCMS/MS chromatograms of leaves chloroform crude extract from *L. flavescens*

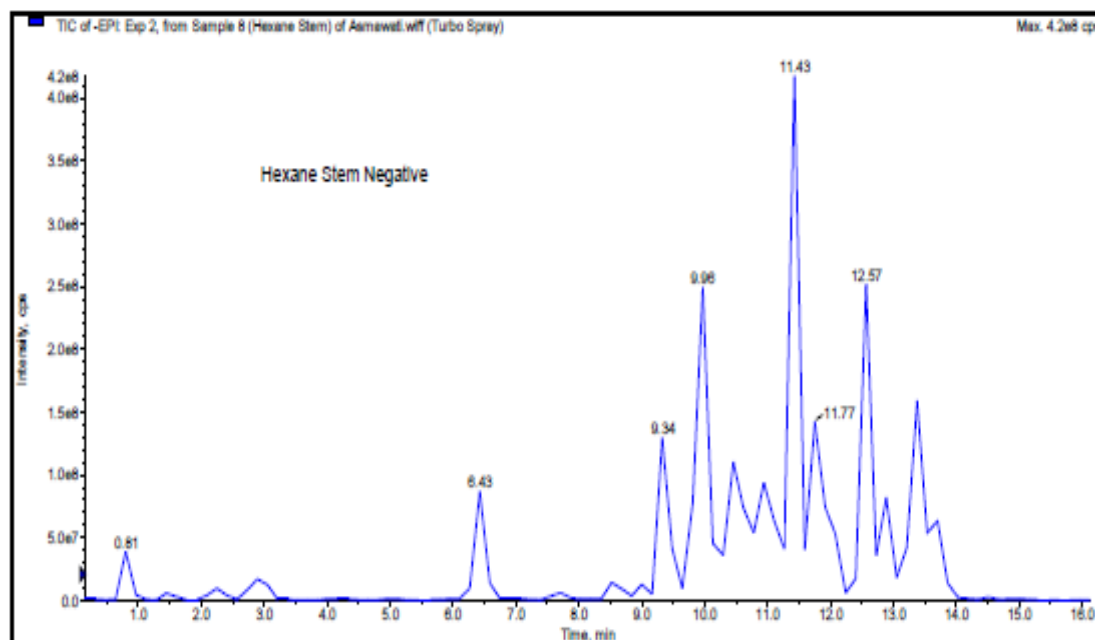


Figure 8.3 The full LCMS/MS chromatograms of leaves water crude extract from *L. flavescens*

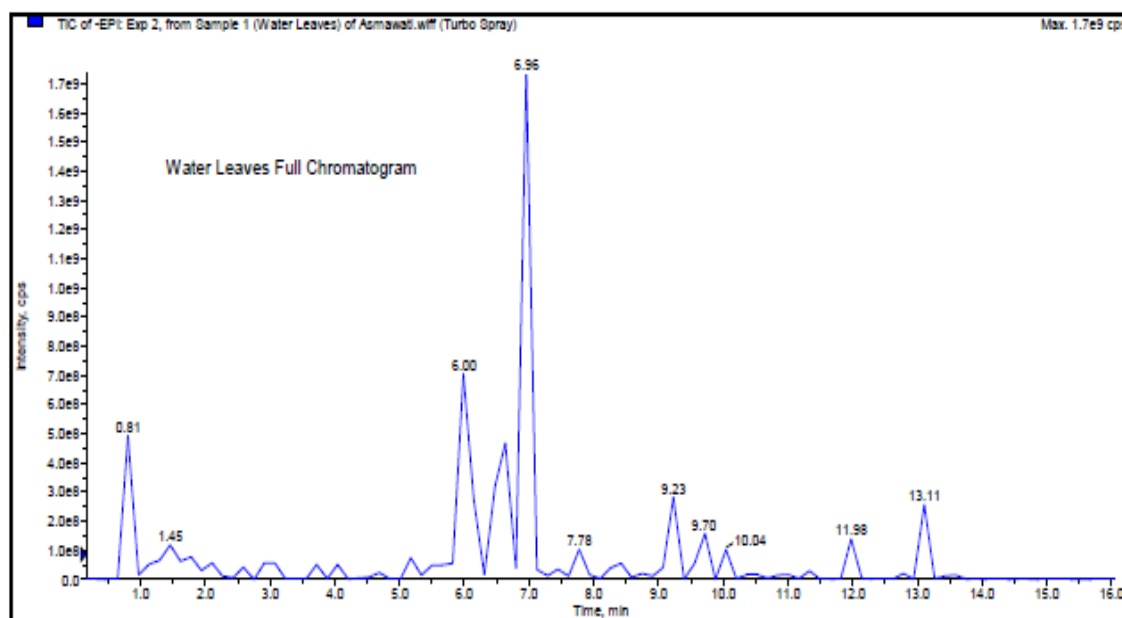


Figure 8.4 The full LCMS/MS chromatograms of stems hexane crude extract from *L. flavescens*

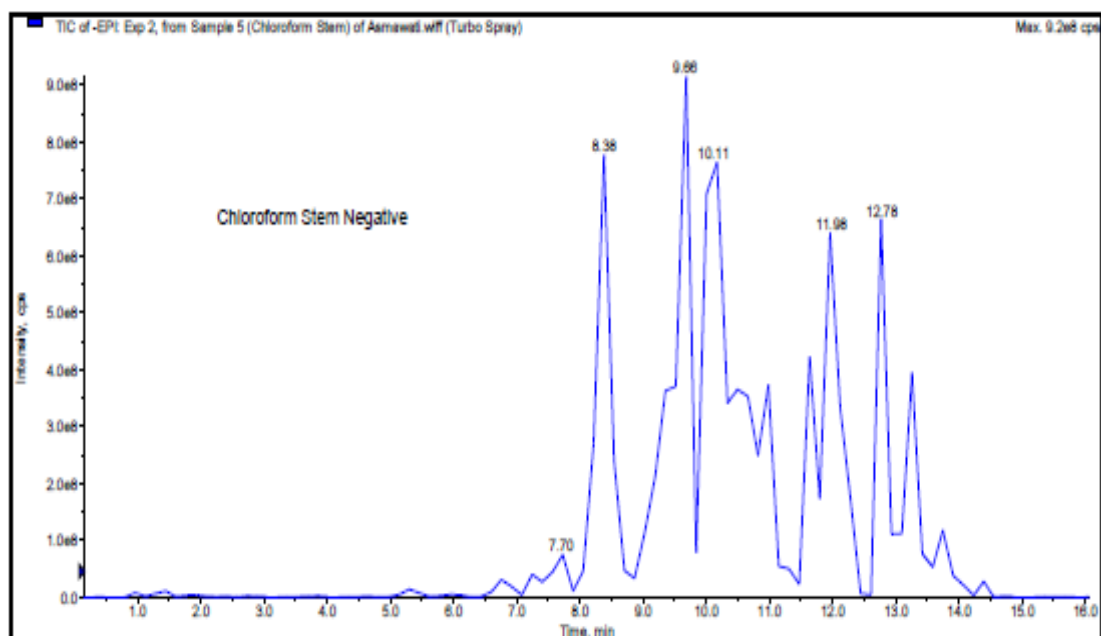


Figure 8.5 The full LCMS/MS chromatograms of stems chloroform crude extract from *L. flavescens*

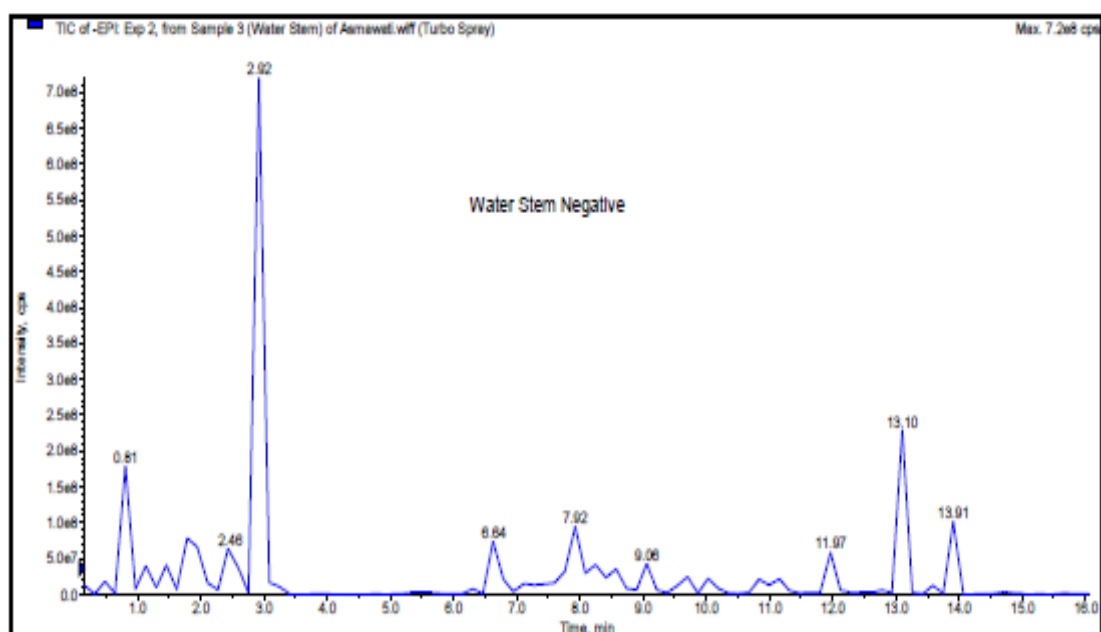


Figure 8.6 The full LCMS/MS chromatograms of stems water crude extract from *L. flavescens*

Table 8.1 Probit analysis table of crude Hexane extract from leaves of *Leptospermum flavescens*.

Concentration Leaves Hexane [µg / ml]	Log ₁₀ concentration sample	Total No.of Shrimp	Number of dead	Percentage Mortality (%)	LC ₅₀ [µg /ml]	95 percent confidence
1000	3	10	9	90		39.04102 - 426.1089
100	2	10	4	40	124.2343	
10	1	10	1	10		

Table 8.2 Probit analysis table of crude Hexane extract from stems of *Leptospermum flavescens*.

Concentration Stems Hexane [µg / ml]	Log ₁₀ concentration sample	Total No.of Shrimp	Number of dead	Percentage Mortality (%)	LC ₅₀ [µg /ml]	95 percent confidence
1000	3	10	9	90		138.8547 - 724.241
100	2	10	1	10	316.3283	
10	1	10	0	0		

Table 8.3 Probit analysis table of crude Chloroform extract from leaves of *Leptospermum flavescens*.

Concentration Leaves Chloroform [µg / ml]	Log ₁₀ concentration sample	Total No.of Shrimp	Number of dead	Percentage Mortality (%)	LC ₅₀ [µg /ml]	95 percent confidence
1000	3	10	6	60		0 and + infinity
100	2	10	5	50	21.54165	
10	1	10	5	50		

Table 8.4 Probit analysis table of crude Chloroform extract from stems of *Leptospermum flavescens*.

Concentration Stems Chloroform [µg / ml]	Log ₁₀ concentration sample	Total No.of Shrimp	Number of dead	Percentage Mortality (%)	LC ₅₀ [µg /ml]	95 percent confidence
1000	3	10	7	70		0 and + infinity
100	2	10	0	0	609.1383	
10	1	10	1	10		

Table 8.5 Probit analysis table of crude Water extract from leaves of *Leptospermum flavescens*.

Concentration Leaves Water [$\mu\text{g} / \text{ml}$]	Log ₁₀ concentration sample	Total No.of Shrimp	Number of dead	Percentage Mortality (%)	LC ₅₀ [$\mu\text{g} / \text{ml}$]	95 percent confidence
1000	3	10	9	90		0 and + infinity
100	2	10	2	20	124.5716	
10	1	10	3	30		

Table 8.6 Probit analysis table of crude water extract from stems of *Leptospermum flavescens*.

Concentration Stems Water [$\mu\text{g} / \text{ml}$]	Log ₁₀ concentration sample	Total No.of Shrimp	Number of dead	Percentage Mortality (%)	LC ₅₀ [$\mu\text{g} / \text{ml}$]	95 percent confidence
1000	3	10	9	90		0 and + infinity
100	2	10	0	0	295.6541	
10	1	10	1	10		

Table 8.7 Hyperglycemic bioassay for leaves and stems of *Leptospermum flavescens*

Samples	Concentration (mg/ml)	Absorbance was measured at 655nm						% of GP inhibition
		R1	R2	R3	Mean	± S.D	S.E	
Control		1.142	1.114	1.318	1.191	± 0.111	0.064	
Standard (Caffein)	0.2	0.128	0.148	0.169	0.148	± 0.021	0.012	88
	0.4	0.039	0.071	0.050	0.053	± 0.016	0.009	96
	0.6	0.022	0.050	0.052	0.042	± 0.017	0.010	97
	0.8	0.052	0.053	0.055	0.053	± 0.001	0.001	96
	1.0	0.062	0.073	0.025	0.053	± 0.025	0.015	96
Leaves Hexane (LH)	0.2	0.311	0.290	0.306	0.302	± 0.011	0.006	75
	0.4	0.212	0.209	0.201	0.207	± 0.006	0.003	83
	0.6	0.215	0.213	0.159	0.196	± 0.032	0.018	84
	0.8	0.185	0.183	0.254	0.207	± 0.040	0.023	83
	1.0	0.201	0.258	0.199	0.219	± 0.034	0.019	82
Leaves Chloroform (LC)	0.2	0.372	0.360	0.353	0.362	± 0.010	0.006	70
	0.4	0.213	0.239	0.242	0.231	± 0.016	0.009	81
	0.6	0.218	0.215	0.225	0.219	± 0.005	0.003	82
	0.8	0.223	0.247	0.224	0.231	± 0.014	0.008	81
	1.0	0.265	0.237	0.227	0.243	± 0.020	0.011	80
Leaves Water (LD)	0.2	0.252	0.239	0.238	0.243	± 0.008	0.005	80
	0.4	0.163	0.158	0.159	0.160	± 0.003	0.002	87
	0.6	0.156	0.173	0.151	0.160	± 0.012	0.007	87
	0.8	0.219	0.140	0.121	0.160	± 0.052	0.030	87
	1.0	0.178	0.175	0.163	0.172	± 0.008	0.005	86
Stems Hexane (SH)	0.2	0.411	0.518	0.511	0.480	± 0.060	0.035	60
	0.4	0.413	0.430	0.420	0.421	± 0.009	0.005	65
	0.6	0.386	0.402	0.475	0.421	± 0.047	0.027	65
	0.8	0.433	0.377	0.453	0.421	± 0.039	0.023	65
	1.0	0.472	0.399	0.392	0.421	± 0.044	0.026	65
Stems Chloroform (SC)	0.2	0.596	0.597	0.603	0.599	± 0.004	0.002	50
	0.4	0.504	0.556	0.558	0.539	± 0.031	0.018	55
	0.6	0.521	0.528	0.534	0.528	± 0.007	0.004	56
	0.8	0.516	0.520	0.511	0.516	± 0.005	0.003	57
	1.0	0.595	0.532	0.420	0.516	± 0.089	0.051	57
Stems Water (SD)	0.2	0.710	0.712	0.730	0.717	± 0.011	0.006	40
	0.4	0.674	0.635	0.665	0.658	± 0.020	0.012	45
	0.6	0.652	0.677	0.645	0.658	± 0.017	0.010	45
	0.8	0.636	0.665	0.673	0.658	± 0.019	0.011	45
	1.0	0.646	0.649	0.679	0.658	± 0.018	0.011	45

Table 8.8 Calculation for preparation of doses during OGTT

Weight (Kg)	Dilution 5 ml/kg, body weight	Amount of Samples,g		
		0.2g/kg, body weight	0.5g/kg, body weight	3g/kg, body weight
0.160	0.800	0.0320	0.0800	0.4800
0.161	0.805	0.0322	0.4025	0.4830
0.162	0.810	0.0324	0.4050	0.4860
0.163	0.815	0.0326	0.4075	0.4890
0.164	0.820	0.0328	0.4100	0.4920
0.165	0.825	0.0330	0.4125	0.4950
0.166	0.830	0.0332	0.4150	0.4980
0.167	0.835	0.0334	0.4175	0.5010
0.168	0.840	0.0336	0.4200	0.5040
0.169	0.845	0.0338	0.4225	0.5070
0.170	0.850	0.0340	0.4250	0.5100
0.171	0.855	0.0342	0.4275	0.5130
0.172	0.860	0.0344	0.4300	0.5160
0.173	0.865	0.0346	0.4325	0.5190
0.174	0.870	0.0348	0.4350	0.5220
0.175	0.875	0.0350	0.4375	0.5250
0.176	0.880	0.0352	0.4400	0.5280
0.177	0.885	0.0354	0.4425	0.5310
0.178	0.890	0.0356	0.4450	0.5340
0.179	0.895	0.0358	0.4475	0.5370
0.180	0.900	0.0360	0.4500	0.5400
0.181	0.905	0.0362	0.4525	0.5430
0.182	0.910	0.0364	0.4550	0.5460
0.183	0.915	0.0366	0.4575	0.5490
0.184	0.920	0.0368	0.4600	0.5520
0.185	0.925	0.0370	0.4625	0.5550
0.186	0.930	0.0372	0.4650	0.5580
0.187	0.935	0.0374	0.4675	0.5610
0.188	0.940	0.0376	0.4700	0.5640
0.189	0.945	0.0378	0.4725	0.5670
0.190	0.950	0.0380	0.4750	0.5700
0.191	0.955	0.0382	0.4775	0.5730
0.192	0.960	0.0384	0.4800	0.5760
0.193	0.965	0.0386	0.4825	0.5790
0.194	0.970	0.0388	0.4850	0.5820
0.195	0.975	0.0390	0.4875	0.5850
0.196	0.980	0.0392	0.4900	0.5880
0.197	0.985	0.0394	0.4925	0.5910
0.198	0.990	0.0396	0.4950	0.5940
0.199	0.995	0.0398	0.4975	0.5970
0.200	1.000	0.0400	0.5000	0.6000
0.201	1.005	0.0402	0.5025	0.6030
0.202	1.010	0.0404	0.5050	0.6060
0.203	1.015	0.0406	0.5075	0.6090
0.204	1.020	0.0408	0.5100	0.6120

Table 8.9 The effect of leaves of *Leptospermum flavescens* in low doses on fasting blood glucose level (FBGL) of normal rats during OGTT.

Treatment groups Normal rats Low doses : Leaves	Body weight (B.W), kg	Sample weight,g (0.2 g/kg) sample, g + dH ₂ O, ml	Glucose weight,g (3 g/kg) glucose, g + dH ₂ O, ml	FBG, mmol/L 0 Minutes	FBG, mmol/L 30 Minutes	FBG, mmol/L 60 Minutes	FBG, mmol/L 90 Minutes	FBG, mmol/L 120 Minutes
1	0.252	0.0504 + 1.260	0.756 + 1.260	6.1	10.5	6.8	5.1	5.0
2	0.182	0.0364 + 0.910	0.546 + 0.910	4.8	7.5	6.1	5.3	4.8
3	0.253	0.0506 + 1.265	0.759 + 1.265	5.3	8.6	6.5	4.9	4.9
4	0.200	0.0400 + 1.000	0.600 + 1.000	6.2	7.4	7.1	5.6	4.8
5	0.218	0.0436 + 1.090	0.654 + 1.090	4.8	7.6	6.4	8.0	4.9
6	0.214	0.0428 + 1.070	0.642 + 1.070	4.8	6.9	6.6	7.7	5.1
AVERAGE	0.224			5.4	8.0	6.7	5.9	5.0
S.D				0.655	1.221	0.467	1.338	0.151
S.E				0.248	0.462	0.177	0.506	0.057

Table 8.10 The effect of leaves of *Leptospermum flavescens* in high doses on fasting blood glucose level (FBGL) of normal rats during OGTT.

Treatment groups Normal rats High doses : Leaves	Body weight (B.W), kg	Sample weight,g (0.5 g/kg) sample, g + dH ₂ O, ml	Glucose weight,g (3 g/kg) glucose, g + dH ₂ O, ml	FBG, mmol/L 0 Minutes	FBG, mmol/L 30 Minutes	FBG, mmol/L 60 Minutes	FBG, mmol/L 90 Minutes	FBG, mmol/L 120 Minutes
1	0.242	0.1210 + 1.210 0.0855	0.726 + 1.210 0.513	5.8	7.2	6.5	6.7	5.2
2	0.171	+ 0.855 0.0875	+ 0.855 0.525	5.3	6.9	6.8	7.2	5.0
3	0.175	+ 0.875 0.0810	+ 0.875 0.486	4.8	7.5	6.4	4.9	4.9
4	0.162	+ 0.810 0.1130	+ 0.810 0.678	5.2	7.2	5.9	5.4	5.8
5	0.226	+ 1.130 0.1150	+ 1.130 0.690	4.1	7.3	6.5	6.0	4.3
6	0.230	+ 1.150	+ 1.150	4.9	7.9	6.7	5.9	4.8
AVERAGE	0.203			4.8	7.4	6.6	5.9	5.1
S.D				0.747	0.356	0.399	0.840	0.565
S.E				0.282	0.135	0.151	0.317	0.213

Table 8.11 The effect of stems of *Leptospermum flavescens* in low doses on fasting blood glucose level (FBGL) of normal rats during OGTT.

Treatment groups Normal rats Low doses : Stems	Body weight (B.W), kg	Sample weight,g (0.2 g/kg) sample, g + dH ₂ O, ml	Glucose weight,g (3 g/kg) glucose, g + dH ₂ O, ml	FBG, mmol/L 0 Minutes	FBG, mmol/L 30 Minutes	FBG, mmol/L 60 Minutes	FBG, mmol/L 90 Minutes	FBG, mmol/L 120 Minutes
1	0.217	0.0434 + 1.085 0.0446	0.651 + 1.085 0.669	5.2	8.0	7.8	3.8	5.2
2	0.223	+ 1.115 0.0366	+ 1.115 0.549	5.7	7.8	6.2	5.4	5.1
3	0.183	+ 0.915 0.0434	+ 0.915 0.651	4.2	7.9	4.3	6.2	5.1
4	0.217	+ 1.085 0.0396	+ 1.085 0.594	5.9	7.4	5.7	6.9	5.1
5	0.198	+ 0.990 0.0456	+ 0.990 0.684	4.9	7.8	9.7	5.0	4.9
6	0.228	+ 1.140	+ 1.140	6.4	7.5	6.8	5.7	4.8
AVERAGE	0.208			5.4	7.7	6.9	5.9	5.1
S.D				0.732	0.231	1.724	1.380	0.170
S.E				0.277	0.087	0.652	0.522	0.064

Table 8.12 The effect of stems of *Leptospermum flavescens* in high doses on fasting blood glucose level (FBGL) of normal rats during OGTT.

Treatment groups Normal rats High doses : Stems	Body weight (B.W), kg	Sample weight,g (0.5 g/kg) sample, g + dH ₂ O, ml	Glucose weight,g (3 g/kg) glucose, g + dH ₂ O, ml	FBG, mmol/L 0 Minutes	FBG, mmol/L 30 Minutes	FBG, mmol/L 60 Minutes	FBG, mmol/L 90 Minutes	FBG, mmol/L 120 Minutes
1	0.237	0.1185 + 1.185 0.0865	0.711 + 1.185 0.519	4.5	7.8	6.3	5.4	5.1
2	0.173	+ 0.865 0.0850	+ 0.865 0.510	5.3	8.0	6.5	6.7	5.4
3	0.170	+ 0.850 0.0910	+ 0.850 0.546	4.9	8.1	6.8	5.2	4.8
4	0.182	+ 0.910 0.0805	+ 0.910 0.483	4.8	8.1	7.5	6.9	5.3
5	0.161	+ 0.805 0.0970	+ 0.805 0.582	5.9	6.6	6.5	5.6	5.5
6	0.194	+ 0.970	+ 0.970	4.4	7.8	7.1	6.4	4.9
AVERAGE	0.185			5.1	7.8	7.0	5.9	5.2
S.D				0.598	0.597	0.800	0.748	0.257
S.E				0.226	0.226	0.302	0.283	0.097

Table 8.13 The effect of control (without administration of sample) on fasting blood glucose level (FBGL) of normal rats during OGTT.

Treatment groups Normal rats	Body weight (B.W), kg	Sample weight,g sample, g + dH ₂ O, ml	Glucose weight,g (3 g/kg) glucose, g + dH ₂ O, ml	FBG, mmol/L 0 Minutes	FBG, mmol/L 30 Minutes	FBG, mmol/L 60 Minutes	FBG, mmol/L 90 Minutes	FBG, mmol/L 120 Minutes
1	0.312	-	0.9362 + 1.56	5.5	7.8	6.9	5.9	5.2
2	0.292	-	0.8768 + 1.46	4.3	7.2	6.9	6.5	5.8
3	0.203	-	0.6090 + 1.02	4.4	7.6	5.7	4.2	3.6
4	0.235	-	0.7054 + 1.18	4.1	8.2	5.3	7.2	5.2
5	0.230	-	0.6903 + 1.15	5.4	7.4	9.1	3.2	2.8
6	0.233	-	0.7002 + 1.17	6.6	7.5	7.1	6.4	5.8
AVERAGE	0.251			5.1	7.6	6.8	5.6	4.7
S.D				0.961	0.349	1.331	1.537	1.244
S.E				0.392	0.142	0.543	0.628	0.508

Table 8.14 The effect of Glipizide (standard) on fasting blood glucose level (FBGL) of normal rats during OGTT.

Treatment groups Normal rats Glipizide	Body weight (B.W), kg	Sample weight,g (5 mg/kg) sample, g + dH ₂ O, ml	Glucose weight,g (3 g/kg) glucose, g + dH ₂ O, ml	FBG, mmol/L 0 Minutes	FBG, mmol/L 30 Minutes	FBG, mmol/L 60 Minutes	FBG, mmol/L 90 Minutes	FBG, mmol/L 120 Minutes
1	0.225	0.0045 + 1.125	0.675 + 1.125	4.2	7.8	6.9	5.1	4.2
2	0.239	0.0048 + 1.195	0.717 + 1.195	4.9	6.9	6.9	4.2	4.7
3	0.235	0.0047 + 1.175	0.705 + 1.175	5.2	7.7	6.5	4.9	4.7
4	0.219	0.0044 + 1.095	0.657 + 1.095	4.2	7.8	5.9	5.1	4.9
5	0.258	0.0052 + 1.290	0.774 + 1.290	5.5	7.8	6.9	4.9	4.8
6	0.223	0.0046 + 1.150	0.690 + 1.150	4.7	7.3	6.7	4.9	5.0
AVERAGE	0.233			4.8	7.6	6.6	4.9	4.7
S.D				0.527	0.373	0.393	0.333	0.279
S.E				0.215	0.152	0.161	0.136	0.114

Table 8.15 Acute toxicity study for leaves of water extract from *Leptospermum flavescens* at 0.2 g /kg, body weight in the acute toxicity study

GROUP Leaves Water [0.2 g /kg ,B.W]	Behavioral profile				Neurological profile					Autonomic profile	
	Alertness	Restlessness	Irritability	Fearfulness	Spontaneous activities	Reactivity	Touch response	Pain response	Gait	Defecation	Urination
LL - 1	N	N	N	N	N	N	N	N	N	N	N
LL - 2	N	N	N	N	N	N	N	N	N	N	N
LL - 3	N	N	N	N	N	N	N	N	N	N	N
LL - 4	N	N	N	N	N	N	N	N	N	N	N
LL - 5	N	N	N	N	N	N	N	N	N	N	N
LL - 6	N	N	N	N	N	N	N	N	N	N	N
LL - 7	N	N	N	N	N	N	N	N	N	N	N
LL - 8	N	N	N	N	N	N	N	N	N	N	N
LL - 9	N	N	N	N	N	N	N	N	N	N	N
LL - 10	N	N	N	N	N	N	N	N	N	N	N
Remark	N	N	N	N	N	N	N	N	N	N	N

Table 8.16 Acute toxicity study for leaves of water extract from *Leptospermum flavescens* at 0.5 g /kg, body weight in the acute toxicity study

GROUP Leaves Water [0.5 g /kg ,B.W]	Behavioral profile				Neurological profile					Autonomic profile	
	Alertness	Restlessness	Irritability	Fearfulness	Spontaneous activities	Reactivity	Touch response	Pain response	Gait	Defecation	Urination
LH - 1	N	N	N	N	N	N	N	N	N	N	N
LH - 2	N	N	N	N	N	N	N	N	N	N	N
LH - 3	N	N	N	N	N	N	N	N	N	N	N
LH - 4	N	N	N	N	N	N	N	N	N	N	N
LH - 5	N	N	N	N	N	N	N	N	N	N	N
LH - 6	N	N	N	N	N	N	N	N	N	N	N
LH - 7	N	N	N	N	N	N	N	N	N	N	N
LH - 8	N	N	N	N	N	N	N	N	N	N	N
LH - 9	N	N	N	N	N	N	N	N	N	N	N
LH - 10	N	N	N	N	N	N	N	N	N	N	N
Remark	N	N	N	N	N	N	N	N	N	N	N

Table 8.17 Acute toxicity study for stems of water extract from *Leptospermum flavescens* at 0.2 g /kg, body weight in the acute toxicity study

GROUP Stems Water [0.2 g /kg ,B.W]	Behavioral profile				Neurological profile					Autonomic profile	
	Alertness	Restlessness	Irritability	Fearfulness	Spontaneous activities	Reactivity	Touch response	Pain response	Gait	Defecation	Urination
SL - 1	N	N	N	N	N	N	N	N	N	N	N
SL - 2	N	N	N	N	N	N	N	N	N	N	N
SL - 3	N	N	N	N	N	N	N	N	N	N	N
SL - 4	N	N	N	N	N	N	N	N	N	N	N
SL - 5	N	N	N	N	N	N	N	N	N	N	N
SL - 6	N	N	N	N	N	N	N	N	N	N	N
SL - 7	N	N	N	N	N	N	N	N	N	N	N
SL - 8	N	N	N	N	N	N	N	N	N	N	N
SL - 9	N	N	N	N	N	N	N	N	N	N	N
SL - 10	N	N	N	N	N	N	N	N	N	N	N
Remark	N	N	N	N	N	N	N	N	N	N	N

Table 8.18 Acute toxicity study for stems of water extract from *Leptospermum flavescens* at 0.5 g /kg, body weight in the acute toxicity study

GROUP Stems Water [0.5 g /kg ,B.W]	Behavioral profile				Neurological profile					Autonomic profile	
	Alertness	Restlessness	Irritability	Fearfulness	Spontaneous activities	Reactivity	Touch response	Pain response	Gait	Defecation	Urination
SH - 1	N	N	N	N	N	N	N	N	N	N	N
SH - 2	N	N	N	N	N	N	N	N	N	N	N
SH - 3	N	N	N	N	N	N	N	N	N	N	N
SH - 4	N	N	N	N	N	N	N	N	N	N	N
SH - 5	N	N	N	N	N	N	N	N	N	N	N
SH - 6	N	N	N	N	N	N	N	N	N	N	N
SH - 7	N	N	N	N	N	N	N	N	N	N	N
SH - 8	N	N	N	N	N	N	N	N	N	N	N
SH - 9	N	N	N	N	N	N	N	N	N	N	N
SH - 10	N	N	N	N	N	N	N	N	N	N	N
Remark	N	N	N	N	N	N	N	N	N	N	N

Table 8.19 Acute toxicity study for normal control rats in the acute toxicity study

GROUP Normal Control	Behavioral profile				Neurological profile					Autonomic profile	
	Alertness	Restlessness	Irritability	Fearfulness	Spontaneous activities	Reactivity	Touch response	Pain response	Gait	Defecation	Urination
CN - 1	N	N	N	N	N	N	N	N	N	N	N
CN - 2	N	N	N	N	N	N	N	N	N	N	N
CN - 3	N	N	N	N	N	N	N	N	N	N	N
CN - 4	N	N	N	N	N	N	N	N	N	N	N
CN - 5	N	N	N	N	N	N	N	N	N	N	N
CN - 6	N	N	N	N	N	N	N	N	N	N	N
CN - 7	N	N	N	N	N	N	N	N	N	N	N
CN - 8	N	N	N	N	N	N	N	N	N	N	N
CN - 9	N	N	N	N	N	N	N	N	N	N	N
CN - 10	N	N	N	N	N	N	N	N	N	N	N
Remark	N	N	N	N	N	N	N	N	N	N	N

Table 8.20 Acute toxicity study for Glipizide at 5 mg /kg, body weight in the acute toxicity study

GROUP Glipizide [5 mg /kg ,B.W]	Behavioral profile				Neurological profile					Autonomic profile	
	Alertness	Restlessness	Irritability	Fearfulness	Spontaneous activities	Reactivity	Touch response	Pain response	Gait	Defecation	Urination
GH - 1	N	N	N	N	N	N	N	N	N	N	N
GH - 2	N	N	N	N	N	N	N	N	N	N	N
GH - 3	N	N	N	N	N	N	N	N	N	N	N
GH - 4	N	N	N	N	N	N	N	N	N	N	N
GH - 5	N	N	N	N	N	N	N	N	N	N	N
GH - 6	N	N	N	N	N	N	N	N	N	N	N
GH - 7	N	N	N	N	N	N	N	N	N	N	N
GH - 8	N	N	N	N	N	N	N	N	N	N	N
GH - 9	N	N	N	N	N	N	N	N	N	N	N
GH - 10	N	N	N	N	N	N	N	N	N	N	N
Remark	N	N	N	N	N	N	N	N	N	N	N

N = Normal, A = Abnormal

Table 8.21 The effect of fasting blood glucose level (FBGL) in normal control rats.

GROUP Normal Control	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
CN - 1	5.6	5.9	5.6	5.3	4.6
CN - 2	6.1	5.8	5.2	4.8	5.8
CN - 3	5.5	6.2	5.1	5.5	4.4
CN - 4	6.3	6.0	6.3	4.9	4.9
CN - 5	5.9	5.8	5.4	5.2	4.8
CN - 6	6.9	5.9	5.7	5.2	5.9
AVERAGE	6.1	5.9	5.6	5.2	5.1
S.D	0.5	0.2	0.4	0.3	0.6
S.E	0.2	0.1	0.2	0.1	0.3

Table 8.22 The effect of fasting blood glucose level (FBGL) in diabetic control rats.

GROUP Diabetic Control	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
CD - 1	14.8	14.5	14.3	14.1	13.0
CD - 2	14.9	15.0	14.3	13.9	14.1
CD - 3	14.9	14.2	14.2	14.1	14.0
CD - 4	14.8	14.7	14.4	13.1	13.5
CD - 5	14.8	14.6	14.3	14.9	14.5
CD - 6	15.1	14.9	14.4	14.3	13.2
AVERAGE	14.9	14.7	14.3	14.1	13.7
S.D	0.1	0.3	0.1	0.6	0.6
S.E	0.0	0.1	0.0	0.2	0.2

Table 8.23 The effect of Glipizide at 5 mg/kg, body weight on fasting blood glucose level (FBGL) in diabetic rats.

GROUP Glipizide (5 mg/kg, body weight)	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
GH - 1	14.6	13.1	10.8	8.8	7.2
GH - 2	14.9	13.1	10.5	9.9	8.1
GH - 3	14.3	13.4	10.5	8.1	7.5
GH - 4	14.8	13.2	10.4	8.3	7.5
GH - 5	14.6	13.0	10.5	8.7	8.2
GH - 6	15.1	13.5	10.4	8.5	8.2
AVERAGE	14.7	13.2	10.5	8.7	7.8
S.D	0.3	0.2	0.1	0.6	0.4
S.E	0.1	0.1	0.1	0.3	0.2

Table 8.24 Effect of leaves water extract at 0.5 g/kg, body weight from *L. flavescens* on fasting blood glucose level (FBGL) in diabetic rats.

GROUP Leaves Water (0.5 g /kg, body weight)	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
LH - 1	14.1	12.3	8.2	6.9	5.2
LH - 2	14.3	12.1	8.7	7.1	5.7
LH - 3	14.3	12.1	8.5	6.7	4.7
LH - 4	14.5	12.5	8.1	6.8	4.9
LH - 5	14.6	11.9	8.3	6.5	5.2
LH - 6	13.9	12.4	7.9	7.1	5.0
AVERAGE	14.3	12.2	8.3	6.9	5.1
S.D	0.3	0.2	0.3	0.2	0.3
S.E	0.1	0.1	0.1	0.1	0.1

Table 8.25 Effect of leaves water extract at 0.2 g/kg, body weight from *L. flavescens* on fasting blood glucose level (FBGL) in diabetic rats.

GROUP Leaves Water (0.2 g /kg, body weight)	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
LL - 1	14.1	13.3	11.9	10.9	7.9
LL - 2	14.3	13.1	11.6	10.8	8.5
LL - 3	14.3	14.1	11.0	10.7	8.7
LL - 4	14.5	12.5	11.3	11.0	8.1
LL - 5	14.6	13.9	12.1	10.0	8.9
LL - 6	14.9	12.8	11.5	11.5	9.1
AVERAGE	14.5	13.3	11.6	10.8	8.5
S.D	0.3	0.6	0.4	0.5	0.5
S.E	0.1	0.3	0.2	0.2	0.2

Table 8.26 Effect of stems water extract at 0.5 g/kg, body weight from *L. flavescens* on fasting blood glucose level (FBGL) in diabetic rats.

GROUP Stems Water (0.5 g /kg, body weight)	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
SH - 1	14.8	13.9	10.1	6.5	4.8
SH - 2	14.6	13.7	9.8	7.5	5.1
SH - 3	14.4	14.9	9.3	7.3	6.6
SH - 4	14.7	13.8	9.3	6.9	4.8
SH - 5	15.0	13.9	9.6	7.2	5.2
SH - 6	14.4	12.9	9.5	6.8	4.6
AVERAGE	14.7	13.9	9.6	7.0	5.2
S.D	0.2	0.6	0.3	0.4	0.7
S.E	0.1	0.3	0.1	0.1	0.3

Table 8.27 Effect of stems water extract at 0.2 g/kg, body weight from *L. flavescens* on fasting blood glucose level (FBGL) in diabetic rats.

GROUP Stems Water (0.2 g /kg, body weight)	DAY	DAY	DAY	DAY	DAY
	0	5	10	15	20
	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)	BGL, (mmol/L)
SL - 1	14.1	13.9	13.2	10.5	7.9
SL - 2	14.1	13.7	14.0	11.7	8.8
SL - 3	14.0	14.2	13.0	11.9	8.6
SL - 4	14.2	13.8	13.6	9.8	8.4
SL - 5	15.0	13.9	13.2	9.9	9.0
SL - 6	13.4	12.9	14.1	11.6	9.4
AVERAGE	14.1	13.7	13.5	10.9	8.7
S.D	0.5	0.4	0.5	0.9	0.5
S.E	0.2	0.2	0.2	0.4	0.2

Table 8.28 The effect of serum lipid profile and liver function in normal control rats.

GROUP	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Triglyceride (mmol/L)	Total Cholesterol (mmol/L)	HDL Cholesterol (mmol/L)	LDL Cholesterol (mmol/L)	ALT (IU/L)	AST (IU/L)	ALP (IU/L)	Total Protein (g/L)
CN - 1	0.7	1.8	1.53	0.72	157.0	387.0	219.0	68.0
CN - 2	0.9	1.8	1.27	1.01	151.0	184.0	348.0	66.0
CN - 3	1.9	1.4	0.38	1.00	160.0	219.0	199.0	66.0
CN - 4	0.5	1.7	1.26	0.76	120.0	216.0	483.0	72.0
CN - 5	1.0	1.5	0.85	0.18	219.0	648.0	459.0	71.0
CN - 6	0.5	1.6	1.29	0.12	129.0	469.0	560.0	70.0
Mean	0.9	1.6	1.10	0.63	156.0	353.8	378.0	68.8
S.D	0.5	0.2	0.41	0.39	34.7	182.7	147.6	2.6
S.E	0.2	0.1	0.17	0.16	14.2	74.6	60.3	1.0

Table 8.29 The effect of serum lipid profile and liver function in diabetic control rats.

GROUP	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Triglyceride (mmol/L)	Total Cholesterol (mmol/L)	HDL Cholesterol (mmol/L)	LDL Cholesterol (mmol/L)	ALT (IU/L)	AST (IU/L)	ALP (IU/L)	Total Protein (g/L)
CD - 1	1.0	2.1	0.44	1.14	66.0	173.0	974.0	75.0
CD - 2	1.1	1.9	0.75	0.65	78.0	257.0	833.0	66.0
CD - 3	1.1	1.6	0.46	0.72	83.0	141.0	1340.0	71.0
CD - 4	1.1	2.1	0.54	1.01	389.0	638.0	871.0	70.0
CD - 5	1.2	1.7	0.49	0.76	240.0	1219.0	933.0	71.0
CD - 6	1.1	1.7	0.41	1.00	339.0	1709.0	257.0	68.0
Mean	1.1	1.9	0.52	0.88	199.2	689.5	868.0	70.2
S.D	0.0	0.2	0.12	0.20	143.6	644.5	350.1	3.1
S.E	0.0	0.1	0.05	0.08	58.6	263.1	142.9	1.2

Table 8.30 The effect of Glipizide at 5 mg/kg, body weight on serum lipid profile and liver function in diabetic rats.

GROUP	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Triglyceride	Total Cholesterol	HDL Cholesterol	LDL Cholesterol	ALT	AST	ALP	Total Protein
Glipizide 5 mg/kg, body weight	(mmol/L)	(mmol/L)	(mmol/L)	(mmol/L)	(IU/L)	(IU/L)	(IU/L)	(g/L)
GH - 1	0.5	1.4	1.19	1.14	72.0	161.0	419.0	60.0
GH - 2	0.3	1.6	0.93	0.72	122.0	269.0	165.0	75.0
GH - 3	0.3	1.6	0.82	1.01	149.0	212.0	251.0	66.0
GH - 4	1.1	1.4	0.61	0.14	69.0	205.0	419.0	65.0
GH - 5	1.1	1.5	1.45	1.00	98.0	475.0	280.0	66.0
GH - 6	1.3	1.8	1.29	0.76	146.0	223.0	662.0	74.0
Mean	0.8	1.6	1.05	0.80	109.3	257.5	366.0	67.7
S.D	0.4	0.2	0.32	0.36	35.3	112.0	175.6	5.8
S.E	0.2	0.1	0.13	0.15	14.4	45.7	71.7	2.3

Table 8.31 The effect of leaves water at 0.2 g/kg, body weight from *L. flavescens* on serum lipid profile and liver function in diabetic rats.

GROUP	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Triglyceride	Total Cholesterol	HDL Cholesterol	LDL Cholesterol	ALT	AST	ALP	Total Protein
Leaves Water 0.2 g/kg, body weight	(mmol/L)	(mmol/L)	(mmol/L)	(mmol/L)	(IU/L)	(IU/L)	(IU/L)	(g/L)
LL - 1	0.5	1.4	1.36	0.03	74.0	485.0	187.0	68.0
LL - 2	0.4	1.2	0.85	0.12	89.0	175.0	178.0	60.0
LL - 3	0.5	1.3	1.07	0.18	113.0	116.0	167.0	65.0
LL - 4	0.3	1.6	1.32	0.01	83.0	128.0	319.0	35.0
LL - 5	0.5	1.7	1.43	0.59	69.0	186.0	215.0	75.0
LL - 6	0.6	1.2	0.89	0.55	73.0	250.0	199.0	71.0
Mean	0.5	1.4	1.15	0.25	83.5	223.3	210.8	62.3
S.D	0.1	0.2	0.25	0.26	16.2	136.8	55.5	14.3
S.E	0.0	0.1	0.10	0.11	6.6	55.8	22.7	5.9

Table 8.32 The effect of leaves water at 0.5 g/kg, body weight from *L. flavescens* on serum lipid profile and liver function in diabetic rats.

GROUP Leaves Water 0.5 g/kg, body weight	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Total	HDL	LDL	Total Protein	ALT	AST	ALP	Total Protein
	Triglyceride (mmol/L)	Cholesterol (mmol/L)	Cholesterol (mmol/L)	Cholesterol (mmol/L)				
LH - 1	0.5	1.8	1.62	0.13	141.0	185.0	147.0	51.0
LH - 2	0.9	1.6	1.52	0.10	73.0	142.0	272.0	51.0
LH - 3	0.5	1.2	1.28	0.14	68.0	183.0	135.0	64.0
LH - 4	0.3	1.3	1.61	0.65	50.0	127.0	121.0	71.0
LH - 5	0.6	1.1	0.59	0.11	72.0	135.0	134.0	77.0
LH - 6	0.4	1.2	0.66	0.14	76.0	156.0	73.0	56.0
Mean	0.5	1.4	1.21	0.21	80.0	154.7	147.0	61.7
S.D	0.2	0.3	0.47	0.22	31.3	24.6	66.5	10.8
S.E	0.1	0.1	0.19	0.09	12.8	10.1	27.1	4.4

Table 8.33 The effect of stems water at 0.2 g/kg, body weight from *L. flavescens* on serum lipid profile and liver function in diabetic rats.

GROUP Stems Water 0.2 g/kg, body weight	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Total	HDL	LDL	Total Protein	ALT	AST	ALP	Total Protein
	Triglyceride (mmol/L)	Cholesterol (mmol/L)	Cholesterol (mmol/L)	Cholesterol (mmol/L)				
SL - 1	0.5	1.2	0.68	0.40	117.0	183.0	291.0	67.0
SL - 2	0.4	1.2	0.67	0.52	70.0	243.0	281.0	68.0
SL - 3	0.5	1.2	0.73	0.02	77.0	462.0	681.0	67.0
SL - 4	0.3	1.5	0.60	0.58	95.0	143.0	408.0	64.0
SL - 5	0.5	1.8	0.64	0.42	331`	175.0	175.0	68.0
SL - 6	0.6	1.7	0.64	0.94	156.0	268.0	237.0	64.0
Mean	0.5	1.4	0.66	0.48	103.0	245.7	345.5	66.3
S.D	0.1	0.3	0.04	0.30	34.8	115.6	181.4	1.9
S.E	0.0	0.1	0.02	0.12	14.2	47.2	74.0	0.8

Table 8.34 The effect of stems water at 0.5 g/kg, body weight from *L. flavescens* on serum lipid profile and liver function in diabetic rats.

GROUP	Serum Lipid Profile Test (mmol/L)				Liver Function Test (mmol/L)			
	Total	HDL	LDL	Total Protein	ALT	AST	ALP	Total Protein
	Triglyceride	Cholesterol	Cholesterol					
Stems Water 0.5 g/kg, body weight	(mmol/L)	(mmol/L)	(mmol/L)	(mmol/L)	(IU/L)	(IU/L)	(IU/L)	(g/L)
SH – 1	0.1	1.3	0.41	0.65	88.0	276.0	309.0	67.0
SH – 2	0.1	1.2	0.77	0.72	67.0	184.0	585.0	68.0
SH – 3	0.2	1.2	0.90	0.00	68.0	178.0	233.0	45.0
SH – 4	0.4	1.2	1.47	0.14	69.0	152.0	159.0	68.0
SH – 5	0.8	1.8	1.62	0.07	94.0	230.0	192.0	68.0
SH – 6	1.2	1.7	1.27	0.76	129.0	440.0	240.0	71.0
Mean	0.5	1.4	1.07	0.39	85.8	243.3	286.3	64.5
S.D	0.4	0.3	0.46	0.36	24.0	105.9	154.8	9.6
S.E	0.2	0.1	0.19	0.14	9.8	43.2	63.2	3.9

Table 8.35 Effect of body weight in normal control rats

GROUP	0th	5 th	10th	15th	20th
Normal	Day	Day	Day	Day	Day
Control	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
CN - 1	0.154	0.159	0.172	0.199	0.220
CN - 2	0.156	0.163	0.169	0.187	0.199
CN - 3	0.157	0.165	0.173	0.199	0.218
CN - 4	0.156	0.160	0.176	0.189	0.204
CN - 5	0.154	0.164	0.175	0.198	0.211
CN - 6	0.155	0.165	0.176	0.196	0.212
Mean	0.155	0.163	0.174	0.195	0.211
S.D	0.001	0.003	0.003	0.005	0.008
S.E	0.000	0.001	0.001	0.002	0.003

Table 8.36 Effect of body weight in diabetic control rats

GROUP Diabetic	0 th Day	5 th Day	10 th Day	15 th Day	20 th Day
	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
Control					
CD - 1	0.157	0.155	0.142	0.130	0.120
CD - 2	0.156	0.152	0.147	0.146	0.146
CD - 3	0.155	0.153	0.146	0.145	0.147
CD - 4	0.160	0.153	0.143	0.136	0.138
CD - 5	0.159	0.156	0.145	0.132	0.108
CD - 6	0.158	0.150	0.143	0.132	0.124
Mean	0.158	0.153	0.144	0.137	0.131
S.D	0.002	0.002	0.002	0.007	0.016
S.E	0.001	0.001	0.001	0.003	0.006

Table 8.37 Effect of Glipizide at 5g/kg, body weight on body weight in diabetic rats

GROUP Glipizide 5g/kg, body weight	0 th Day	5 th Day	10 th Day	15 th Day	20 th Day
	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
GH - 1	0.156	0.171	0.172	0.174	0.187
GH - 2	0.161	0.164	0.165	0.173	0.198
GH - 3	0.155	0.172	0.173	0.174	0.189
GH - 4	0.158	0.163	0.172	0.175	0.185
GH - 5	0.162	0.165	0.168	0.170	0.185
GH - 6	0.159	0.162	0.165	0.171	0.188
Mean	0.159	0.166	0.169	0.173	0.189
S.D	0.003	0.004	0.004	0.002	0.005
S.E	0.001	0.002	0.001	0.001	0.002

Table 8.38 Effect of leaves water at 0.2g/kg, body weight from *L. flavescens* on body weight in diabetic rats

GROUP Leaves Water 0.2g/kg, body weight	0th	5th	10th	15th	20th
	Day	Day	Day	Day	Day
	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
LL - 1	0.159	0.163	0.164	0.173	0.192
LL - 2	0.158	0.167	0.169	0.175	0.194
LL - 3	0.155	0.168	0.168	0.178	0.197
LL - 4	0.156	0.159	0.168	0.175	0.193
LL - 5	0.154	0.161	0.166	0.175	0.192
LL - 6	0.157	0.163	0.167	0.175	0.193
Mean	0.157	0.164	0.167	0.175	0.194
S.D	0.002	0.003	0.002	0.002	0.002
S.E	0.001	0.001	0.001	0.001	0.001

Table 8.39 Effect of leaves water at 0.5g/kg, body weight from *L. flavescens* on body weight in diabetic rats

GROUP Leaves Water 0.5g/kg, body weight	0th	5 th	10th	15th	20th
	Day	Day	Day	Day	Day
	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
LH - 1	0.159	0.167	0.166	0.178	0.195
LH - 2	0.160	0.167	0.168	0.175	0.199
LH - 3	0.157	0.164	0.170	0.179	0.197
LH - 4	0.156	0.166	0.169	0.176	0.193
LH - 5	0.158	0.166	0.166	0.179	0.197
LH - 6	0.162	0.160	0.169	0.174	0.198
Mean	0.159	0.165	0.168	0.177	0.197
S.D	0.002	0.003	0.002	0.002	0.002
S.E	0.001	0.001	0.001	0.001	0.001

Table 8.40 Effect of stems water at 0.2g/kg, body weight from *L. flavescens* on body weight in diabetic rats

GROUP	0th	5 th	10th	15th	20th
Stems Water	Day	Day	Day	Day	Day
0.2g/kg, body weight	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
SL - 1	0.156	0.164	0.161	0.179	0.197
SL - 2	0.158	0.166	0.167	0.174	0.192
SL - 3	0.160	0.167	0.169	0.175	0.192
SL - 4	0.154	0.161	0.168	0.177	0.193
SL - 5	0.153	0.161	0.169	0.177	0.199
SL - 6	0.157	0.160	0.168	0.177	0.195
Mean	0.156	0.163	0.167	0.177	0.195
S.D	0.003	0.003	0.003	0.002	0.003
S.E	0.001	0.001	0.001	0.001	0.001

Table 8.41 Effect of stems water at 0.5g/kg, body weight from *L. flavescens* on body weight in diabetic rats

GROUP	0th	5 th	10 th	15th	20th
Stems Water	Day	Day	Day	Day	Day
0.5g/kg, body weight	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)	BW, (kg)
SH - 1	0.153	0.162	0.169	0.179	0.195
SH - 2	0.152	0.161	0.160	0.178	0.197
SH - 3	0.155	0.163	0.160	0.176	0.194
SH - 4	0.154	0.163	0.162	0.179	0.194
SH - 5	0.152	0.162	0.161	0.176	0.192
SH - 6	0.156	0.166	0.164	0.175	0.193
Mean	0.154	0.163	0.163	0.177	0.194
S.D	0.002	0.002	0.003	0.002	0.002
S.E	0.001	0.001	0.001	0.001	0.001



Figure 8.7 Sprague–Dawley (SD) rats were kept for two weeks in laboratory before the experiments for acclimatization to the laboratory conditions and fed with standard pellet diet and water.



Figure 8.8 Preparation of alloxan monohydrate (Loba Chemie) dose at 120 mg/kg, body weight for induction of type II diabetes in rats

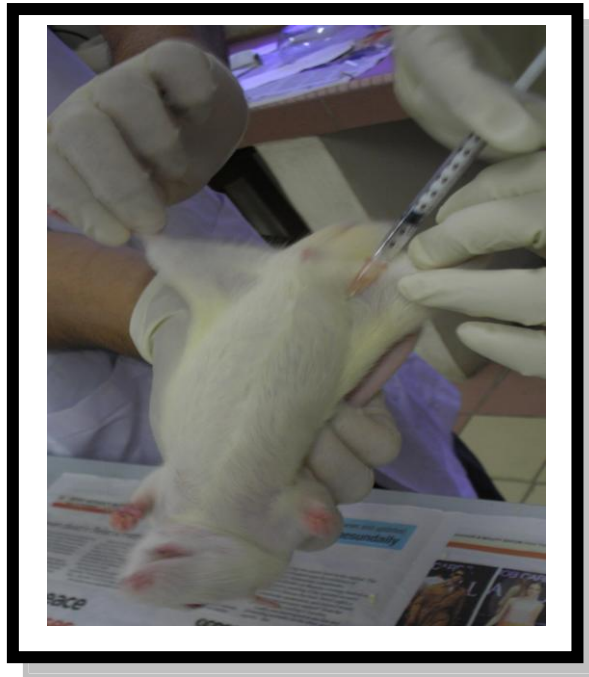


Figure 8.9 Induction of NIDDM in overnight fasted Sprague–Dawley (SD) rats by a single intraperitoneal injection of alloxan monohydrate.



Figure 8.10 FreezeDry machine.

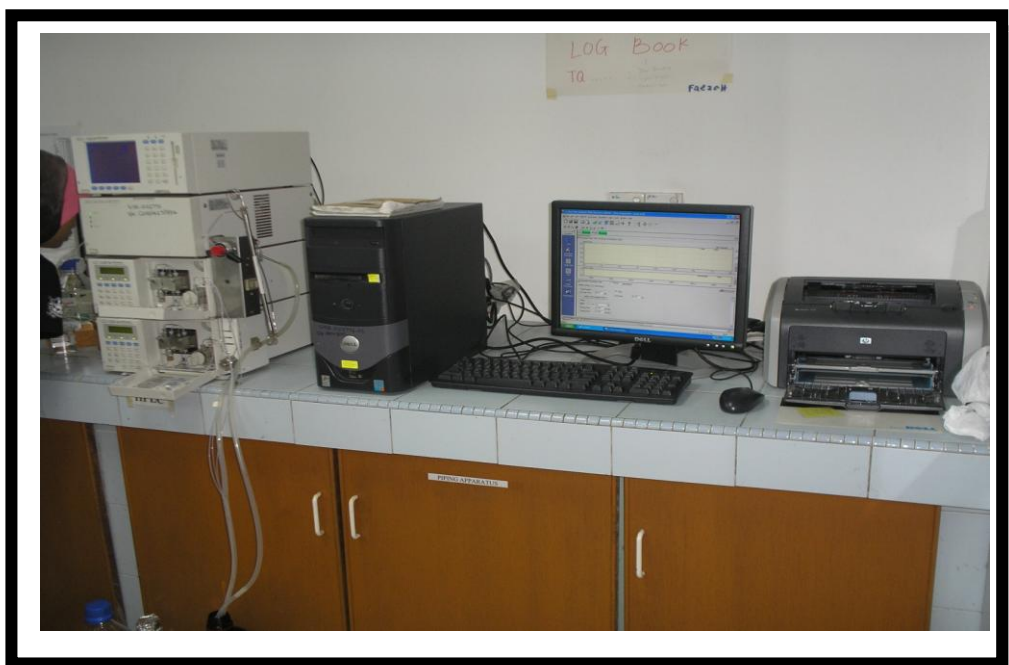


Figure 8.11 HPLC analysis was performed using Shimadzu chromatograph equipped with an automatic injector, column oven and UV detector