Chapter III

EXPERIMENTAL

1. Effect of oral administrations of chlorpropamide

Chlorpropamide (Diabenese, Pfizer) was used as a comparative hypoglycemic agent.

In this experiment, six rabbits were used. The normal periodical variation pattern of the individual fasting (about 18 hours) blood sugar concentration at hourly intervals was studied during a 6-hour period. The results of this study served as the control of the individual animals used in the later experiment.

Two days later, the rabbits were divided into two groups of three. The fasting blood sugar levels of each of the three rabbits in the first group were determined before and at hourly intervals for six hours after the oral administration of 60 mg of chlorpropamide (in 5 ml of distilled water) per kg of body weight. The other three animals in the second group received each 125 mg of chlorpropamide (also in 5 ml of distilled water) per kg of body weight; and the blood sugar levels were determined similarly and simultaneously.

The results are shown in Table 3 and Figure 4.

2. Effect of single-dose oral administrations of aqueous extract of S. sanitwongsei.

Six rabbits were used in this experiment to study the effect of aqueous extract of S. sanitwongsei on the blood sugar

Table 3

Effect of oral administrations of Chlorpropamide on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent												
		Control							Treated					
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	60 mg/kg	87.0	81.5	93.5	93.3	100.0	88.0	89.2	76.3	61.5	56.0	50.0	49.5	54.6	48.2
2		91.5	85.2	94.0	95.2	82.1	82.1	84.4	96.0	80.0	88.0	67.8	64.0	59.0	64.5
3		89.8	81.5	96.0	94.8	93.3	93.3	95.1	85.5	80.0	75.0	66.7	66.0	62.0	56.0
Mean		89.4	82.7	94.5	94.4	91.8	87.8	89.6	85.9	73.8	73.0	61.5	59.8	58.5	56.2
± S.D.		2.3	2.1	1.3	1.0	9.0	5.6	5.3	9.9	10.7	16.1	10.0	9.0	3.7	8.2
Probability												<0.005	<0.01	<0.005	<0.005
1	125 mg/kg	104.0	100.0	109.6	89.8	113.1	100.0	98.7	98.0	72.5	72.8	67.8	67.8	69.0	52.5
2		88.0	82.1	87.5	85.0	89.0	87.5	86.4	90.5	49.5	54.5	48.5	50.5	41.3	32.0
3		110.0	102.5	119.6	119.6	118.0	108.2	105.1	100.5	70.5	68.5	67.8	52.5	62.0	56.0
Mear		100.6	94.9	105.6	98.1	106.7	98.6	96.7	96.3	64.2	65.3	61.4	56.9	57.4	46.8
± S.D.		11.4	11.1	16.4	18.8	15.5	10.4	9.5	5.2	12.7	9.6	11.1	9.5	14.4	12.9
Probability										<0.05	<0.025	<0.05	<0.025	<0.025	<0.025

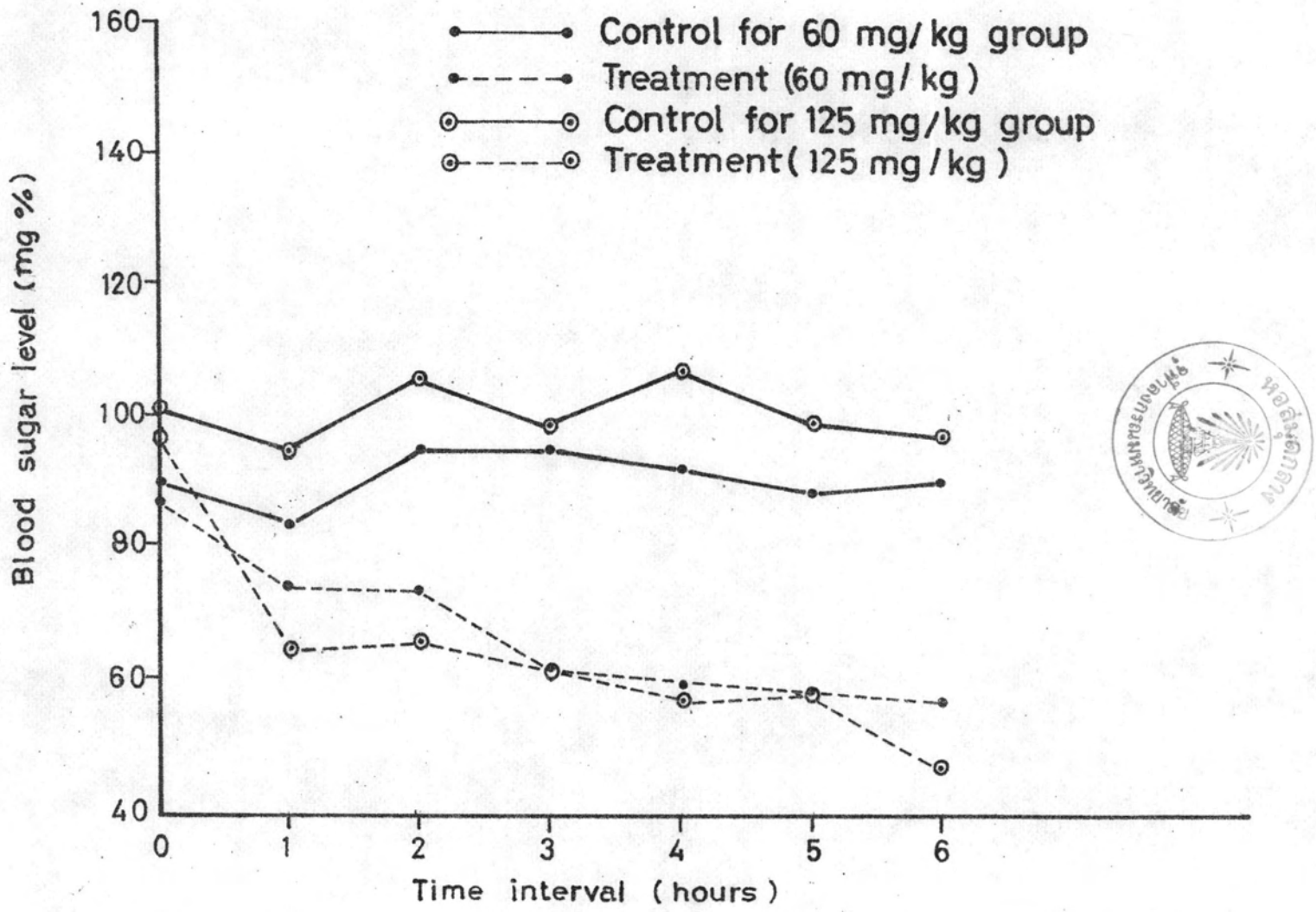

Fig.4 Effect of oral administrations of chlorpropamide on blood sugar levels of rabbits.

levels after a single-dose oral administration. The experiment was carried out in the same manner as in the preceding experiment.

Aqueous extract of S. sanitwongsei was administered orally to three rabbits of the first group at a dosage of 5 ml (representing 5 g of the crude berries) per kg of body weight. Each of the other three animals in the second group received twice as much of the extract.

The results of this experiment are shown in Table 4 and Figure 5.

3. Comparative study on the effects of administrations of aqueous extract of S. sanitwongsei and of chlorpropamide on blood sugar levels of rabbits

Twelve rabbits were divided into three groups of four. After studying the individual original fasting blood sugar level pattern, the animals in group I, group II, and group III received respectively 5 ml of distilled water per kg body weight, 5 ml of aqueous extract of S. sanitwongsei (representing 5 g of the berries) per kg body weight, and 125 mg of chlorpropamide per kg body weight, all by oral administration. The blood samples for sugar levels determination were obtained in the similar manner as in the previous experiments.

The results are shown in Table 5 and Figure 6.

Table 4

Effect of single-dose oral administrations of aqueous extract of S. sanitwongsei Craib. on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	5 g/kg	125.0	114.0	114.5	124.0	106.0	97.0	100.1	108.5	109.0	103.0	101.0	107.5	99.5	99.5
2		101.0	103.5	103.5	120.5	113.5	98.5	102.7	88.0	85.5	88.5	86.0	88.0	88.0	86.6
3		122.0	114.0	114.0	145.8	116.0	112.0	118.8	93.0	107.5	94.2	94.0	106.0	94.2	88.5
Mean		116	110.5	110.7	130.1	111.8	102.5	107.2	96.5	100.7	95.2	93.6	94.2	93.9	91.5
± S.D.		13.1	6.1	6.2	13.7	5.2	8.3	10.0	10.7	13.2	7.3	7.5	10.9	5.8	7.0
Probability											<0.05	<0.05			
1	10 g/kg	127.5	126.7	114.0	131.5	128.0	115.0	123.1	118.0	118.5	105.2	93.0	98.0	105.2	101.5
2		130.5	139.5	135.0	152.0	127.5	109.0	110.5	88.5	91.0	82.5	90.5	93.7	93.7	93.7
3		119.0	101.5	110.2	120.5	114.0	96.0	107.8	113.0	113.5	100.0	106.5	106.5	101.5	106.5
Mean		125.7	122.6	119.7	134.7	123.2	106.7	113.8	106.5	107.7	95.9	98.7	99.4	100.1	100.6
± S.D.		5.9	19.3	13.4	17.8	7.9	11.9	8.2	15.8	14.7	11.9	8.6	9.2	5.9	6.5
Probability												<0.05	<0.05		

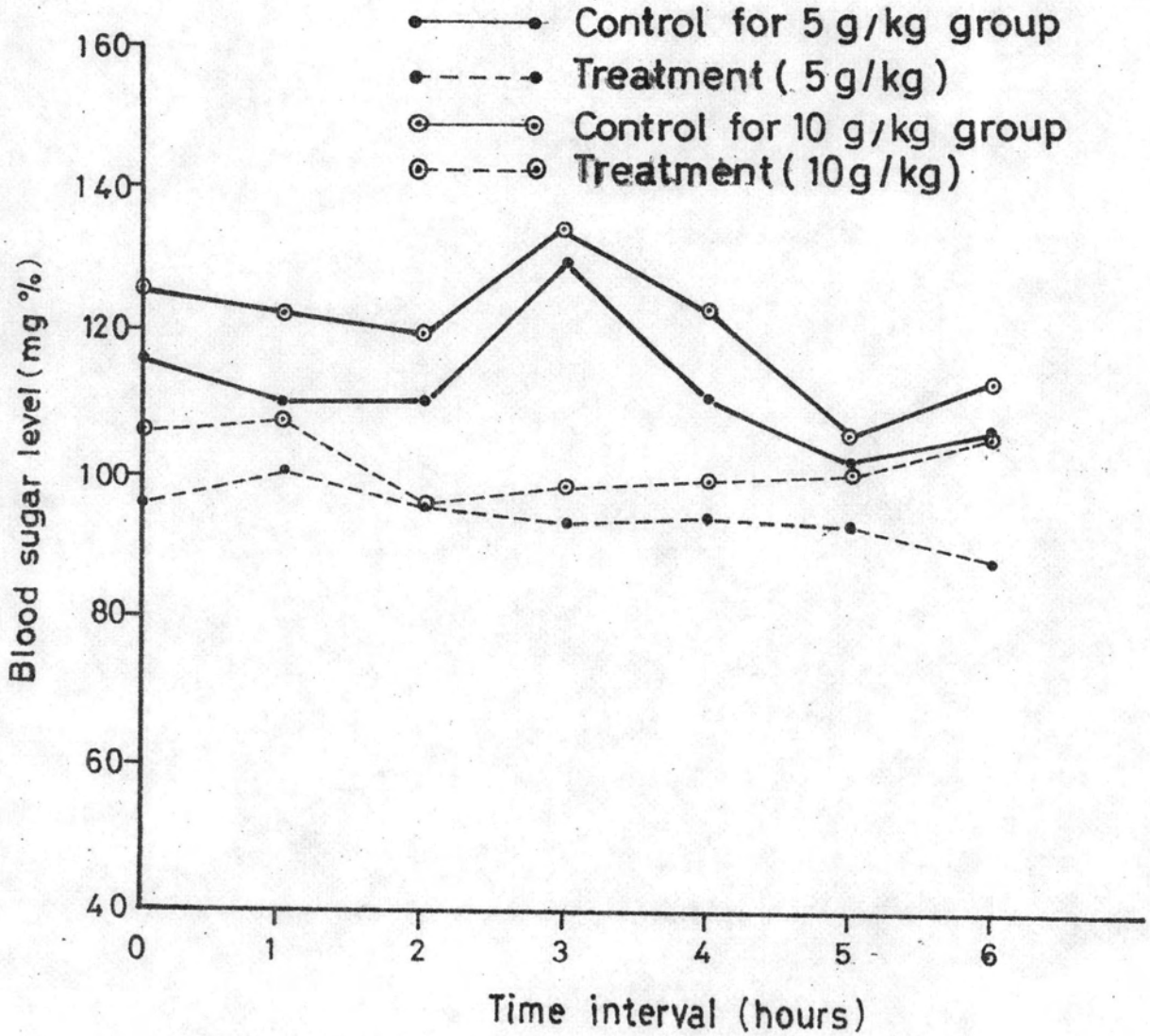

Fig. 5 Effect of single-dose oral administrations of aqueous extract of *S. sanitwongsei* Craib. on blood sugar levels of rabbits.

Table 5

Effect of oral administrations of distilled water, of aqueous extract of S. sanitwongsei Craib, and of chlorpropamide on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	Distilled water 5 ml/kg	78.4	85.0	76.2	82.5	83.0	82.0	84.5	85.6	68.2	70.0	78.0	80.8	70.0	67.8
2		80.1	69.0	79.0	91.5	93.0	85.5	89.0	70.8	85.6	79.8	85.6	88.9	79.8	90.0
3		82.5	78.2	85.5	85.0	92.0	80.1	74.5	79.8	88.1	84.0	79.4	85.6	80.8	83.5
4		83.6	89.0	96.5	99.0	94.0	93.0	96.0	109.0	101.5	85.6	91.0	86.5	91.0	96.8
Mean		81.2	80.3	84.3	89.5	90.5	85.2	86.0	86.3	85.9	79.9	83.5	85.5	80.4	84.5
± S.D.		2.3	8.8	9.0	7.4	5.1	5.7	9.0	16.3	13.7	7.0	6.0	3.4	8.6	12.4
Probability									-	-	-	-	-	-	-
1	Aqueous extract of Solanum sanitwongsei 5g/kg	118.1	113.5	116.3	117.0	116.8	117.0	116.8	102.0	107.0	112.0	113.6	110.2	106.8	102.4
2		79.3	88.3	93.0	105.8	91.5	90.8	103.5	77.2	81.0	79.0	82.0	85.6	80.5	74.0
3		85.6	88.3	88.0	91.5	92.0	105.2	101.8	86.3	103.0	113.6	96.8	96.8	85.6	87.0
4		101.7	93.0	106.0	104.8	105.8	105.8	113.5	97.4	88.0	91.0	85.6	91.0	91.5	91.0
Mean		96.2	95.8	100.8	104.8	101.5	104.7	108.9	90.7	94.8	98.9	94.5	95.9	91.1	88.6
± S.D.		17.4	12.0	12.8	10.4	12.2	10.7	7.4	11.2	12.3	16.8	14.2	10.6	11.4	11.7
Probability															

Table 5 (continued)

Effect of oral administrations of distilled water, of aqueous extract of S. sanitwongsei Craib, and of chlorpropamide on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	Chlor-	91.0	88.0	92.5	93.0	99.0	103.0	103.5	108.5	90.0	76.2	71.2	95.1	56.8	68.4
2	propamide	88.1	86.5	81.5	87.6	91.5	87.2	86.0	78.5	68.5	62.8	51.5	51.5	45.0	46.8
3		91.5	92.5	86.0	94.6	94.0	93.0	92.5	96.8	79.8	73.0	56.8	52.4	47.5	53.0
4	125 mg/kg	83.5	97.7	87.5	86.5	89.5	93.0	96.5	100.0	74.0	65.5	67.2	57.5	50.2	57.5
Mean		88.5	91.2	86.9	90.4	93.5	94.1	94.6	96.0	78.1	69.4	61.7	64.1	49.9	56.4
± S.D.		3.7	5.0	4.5	4.0	4.1	6.6	7.3	12.6	9.2	6.3	9.1	20.8	5.1	9.1
Probability										<0.05	<0.005	<0.005	<0.05	<0.001	<0.001

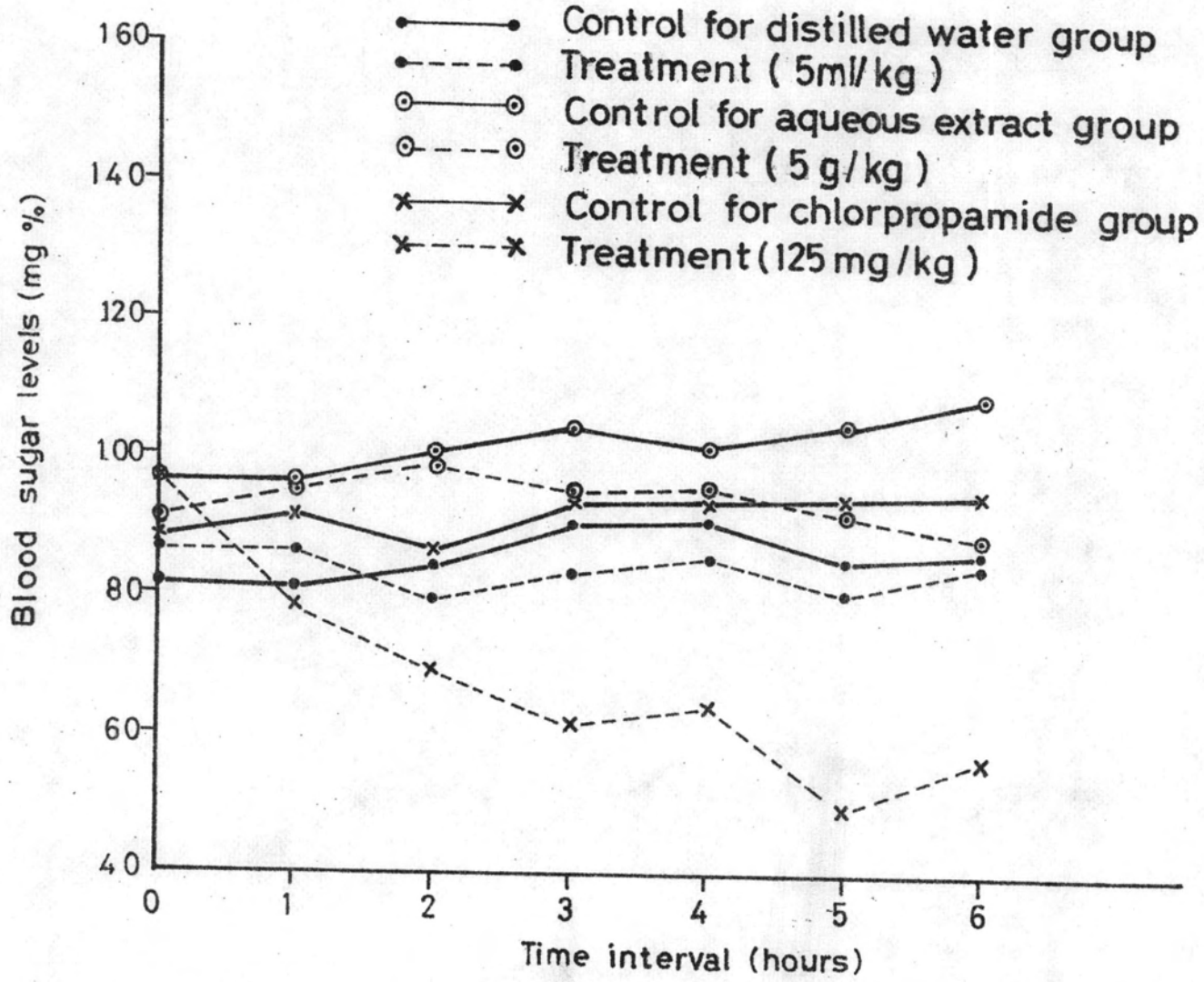

Fig. 6 Effect of oral administrations of distilled water, of aqueous extract of *S. sanitwongsei* Craib . and of chlorpropamide on blood sugar levels of rabbits.

4. Effect of oral administration of alcoholic extract of S. sanitwongsei.

Six rabbits were used in this experiment, which was carried out in the same manner as in the second experiment. The animals in the two groups received respectively 5 g and 10 g of the berries in the form of the alcoholic extract.

The results are shown in Table 6 and Figure 7.

5. Effect of three-day oral administration of aqueous extract of S. sanitwongsei

In this experiment, each of twelve rabbits received once daily by oral route 5 ml of the aqueous extract of S. sanitwongsei per kg of body weight for 3 days. The blood sugar levels were determined just before and at hourly intervals after the third dose.

The results are shown in Table 7 and Figure 8.

6. Effect of seven-day oral administration of aqueous extract of S. sanitwongsei.

Sixteen rabbits were divided into two equal groups, which received respectively, by oral administration, 10 ml of distilled water per kg of body weight once daily for 7 days, and 10 ml of the aqueous extract of S. sanitwongsei per kg of body weight once daily for the same period of time. The blood samples were taken before and at hourly intervals after the seventh dose.

Table 6

Effect of oral administrations of alcoholic extract of S. sanitwongsei Craib.

on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	5 g/kg	101.0	103.5	103.5	120.5	113.5	110.8	108.5	91.6	101.0	99.0	100.0	94.0	100.0	112.0
2		120.5	139.5	135.0	152.0	127.5	121.2	129.0	119.0	96.2	91.7	85.4	92.6	92.2	91.0
3		122.0	114.0	114.0	145.8	116.0	118.1	112.0	112.0	99.5	93.5	87.8	92.6	97.0	95.0
	Mean	114.5	119.0	117.5	139.4	119.0	116.7	116.5	107.5	98.9	94.7	91.1	93.1	96.4	99.3
	± S.D.	11.7	18.5	16.0	16.7	7.5	5.3	10.9	14.2	2.5	3.8	7.8	0.8	3.9	11.2
	Probability											<0.01	<0.005	<0.01	
1	10 g/kg	119.0	101.5	110.2	120.5	114.0	96.0	105.4	131.3	112.7	112.7	107.2	105.5	106.5	103.5
2		127.5	126.7	114.0	131.5	128.0	115.0	120.5	106.4	104.0	96.2	97.0	96.2	103.5	102.0
3		125.0	114.0	114.5	124.0	106.0	97.0	109.1	125.0	119.5	119.0	119.0	113.5	109.8	110.2
	Mean	123.8	114.1	112.9	125.3	116.0	102.7	111.7	120.9	112.1	109.3	107.7	105.1	106.6	105.2
	± S.D.	4.4	12.6	2.4	5.6	11.1	10.7	7.9	12.9	7.8	11.8	11.0	8.7	3.2	4.4
	Probability														

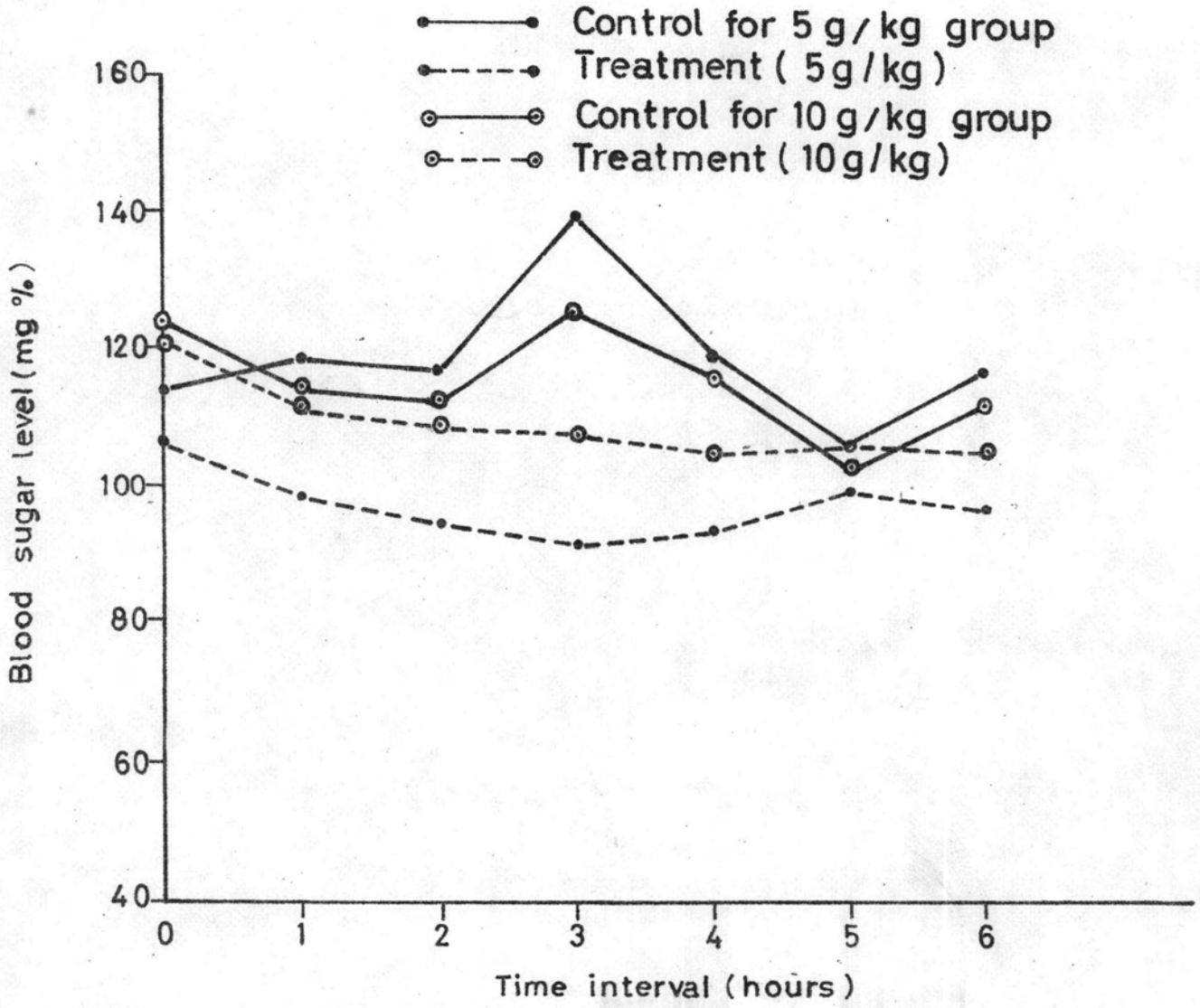

Fig. 7 Effect of single-dose oral administrations of alcoholic extract of *S.sanitwongsei* Craib. on blood sugar levels of rabbits.

Table 7

Effect of 3-day oral administrations of aqueous extract of S. sanitwongsei Craib.

on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6hrs
1	5 g/kg/day	87.0	81.5	93.5	93.3	100.0	88.0	92.1	93.0	80.0	78.5	79.0	83.5	93.5	93.0
2		89.8	81.5	96.0	94.8	93.3	93.3	95.3	74.0	93.5	94.0	86.0	94.0	94.0	93.0
3		88.0	82.1	87.5	85.0	89.0	87.5	88.4	77.5	91.8	93.0	81.0	90.0	93.0	97.0
4		91.5	85.2	94.0	95.2	82.1	82.1	85.6	103.5	105.8	101.5	100.0	94.0	99.0	97.8
5		104.0	100.0	109.6	89.8	113.1	100.0	102.7	93.0	117.5	110.5	100.0	103.5	105.0	112.0
6		110.0	102.5	119.6	116.0	118.0	108.2	112.8	100.0	104.0	104.5	99.0	100.0	103.0	100.0
7		96.5	108.0	113.0	135.0	141.0	138.0	126.5	91.5	104.0	112.2	125.5	122.5	101.0	110.0
8		107.5	99.0	83.0	101.5	99.0	96.5	95.6	86.5	92.0	95.0	85.5	90.5	90.0	91.0
9		79.0	89.5	103.0	111.5	120.0	124.0	112.5	85.5	101.0	95.5	94.0	96.5	112.2	107.0
10		163.5	141.0	152.0	125.5	117.5	103.0	102.8	124.2	127.5	107.0	97.0	94.5	76.0	91.5
11		112.0	96.5	100.2	101.5	102.5	96.8	102.0	103.5	96.5	98.0	100.0	93.0	93.0	95.0
12		79.0	83.5	82.3	93.0	103.0	101.5	94.5	81.0	85.0	90.0	75.0	101.0	93.0	97.2
Mean		100.7	95.9	102.8	103.8	106.5	101.6	100.9	92.8	99.9	98.3	93.5	96.9	96.1	98.7
± S.D.		22.8	16.9	19.3	15.7	16.2	15.8	11.7	13.8	13.3	9.5	13.6	9.7	9.0	7.2
probability															

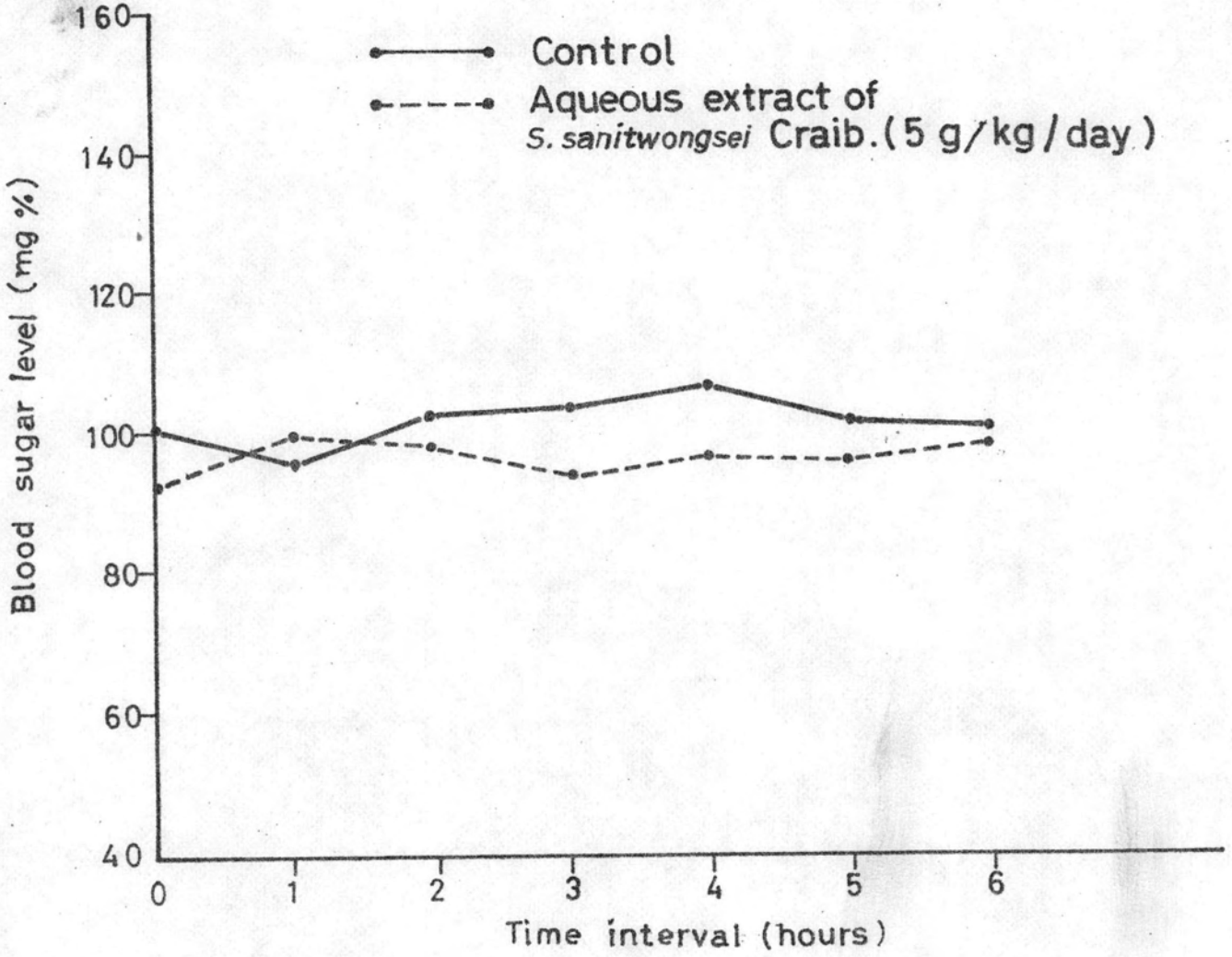

Fig. 8 Effect of 3-day oral administrations of aqueous extract of *S. sanitwongsei* Craib. on blood sugar levels of rabbits.

The results are shown in Table 8 and Figure 9.

7. Effect of single-dose oral administrations of aqueous extract of S. trilobatum

Six rabbits were divided into two equal groups, which received orally 5 g/kg and 10 g/kg of this extract respectively.

The results are shown in Table 9 and Figure 10.

8. Comparative study on the effects of oral administrations of aqueous extract of S. trilobatum and of chlorpropamide

Twelve rabbits were divided into three equal groups, which received respectively, by oral administration, 5 ml/kg of distilled water, 5 g/kg of the berries of S. trilobatum in the form of aqueous extract, and 125 mg/kg of chlorpropamide.

The results are shown in Table 10 and Figure 11.

9. Effect of three-day oral administrations of aqueous extract of S. trilobatum

The blood sugar levels of twelve rabbits which received daily oral administrations of 5 g/kg of the berries of S. trilobatum, in the form of the aqueous extract, for 3 days. The blood sugar levels were determined just before and at hourly intervals after the third dose of administration.

The results are shown in Table 11 and Figure 12.

10. Effect of seven-day oral administrations of aqueous extract of S. trilobatum

Sixteen rabbits were divided into two equal groups,

Table 8

Effect of 7-day oral administrations of distilled water and of aqueous extract of S. sanitwongsei Craib. on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	Distilled water 10 ml/kg/ day	83.0	83.5	85.0	99.5	107.0	93.5	104.1	96.5	80.0	84.5	95.0	95.1	84.5	94.0
2		81.8	83.0	90.0	85.7	87.7	83.0	84.6	83.7	85.0	89.8	80.5	94.5	106.5	89.8
3		95.3	85.9	91.5	102.7	107.2	96.0	98.7	94.3	89.1	86.5	88.4	90.2	97.0	88.5
4		107.2	107.0	107.5	107.8	108.0	107.0	105.4	104.1	105.6	101.0	100.2	97.5	105.2	90.1
5		76.5	78.5	87.0	80.0	92.5	84.5	86.1	99.7	111.5	101.0	96.0	101.0	74.8	79.0
6		72.5	79.0	84.5	87.5	103.8	105.5	98.7	89.9	71.5	76.8	73.5	84.5	85.0	88.0
7		79.0	84.5	79.0	85.2	100.0	102.5	99.1	100.6	95.0	95.7	90.5	106.2	107.2	106.5
8		79.0	82.3	78.5	79.0	90.0	79.0	88.4	85.2	83.0	79.8	82.5	94.0	90.5	83.0
Mean		84.3	85.5	87.9	90.9	99.5	93.9	95.6	94.3	90.1	89.4	88.3	95.4	93.8	89.9
± S.D.		11.4	9.1	9.2	10.9	8.3	10.8	8.1	7.4	13.4	9.2	8.9	6.6	12.1	8.2
Probability															

Table 8 (continued)

Effect of 7-day oral administrations of distilled water and of aqueous extract of S. sanitwongsei Craib. on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1		82.0	76.0	64.1	81.6	80.2	75.5	78.1	77.2	79.5	68.7	73.0	78.0	74.5	74.5
2		68.0	75.5	77.6	85.8	84.0	80.2	81.2	85.4	84.5	88.5	89.8	88.5	95.5	76.5
3	Solanum	75.5	73.5	68.6	75.5	79.0	74.0	75.4	78.1	79.0	74.5	77.0	73.0	77.5	64.2
4	sanit-	89.5	91.0	86.0	96.0	101.8	90.5	93.3	98.5	127.2	105.5	103.0	99.5	100.2	84.5
5	wongsei	78.3	78.5	75.0	82.4	95.0	84.5	91.7	83.6	78.0	79.8	77.4	83.0	81.5	74.8
6	Craib.	84.0	83.5	77.0	83.5	88.0	85.0	86.4	89.1	54.0	75.0	90.5	95.0	94.7	85.0
7	10 g/kg/	79.0	84.5	70.0	74.0	90.0	82.5	84.6	91.7	101.0	106.2	93.0	106.5	110.3	98.5
8	day	74.5	79.0	82.4	75.5	83.5	95.5	85.3	88.4	85.5	107.0	106.1	109.0	96.7	85.0
Mean		92.2	90.6	89.8	90.1	91.8	87.7	89.6	90.2	93.9	90.7	89.9	94.4	91.4	88.1
± S.D.		6.5	5.8	7.3	7.2	7.8	7.2	6.2	7.1	21.1	15.9	12.2	13.2	12.4	10.2
Probability															

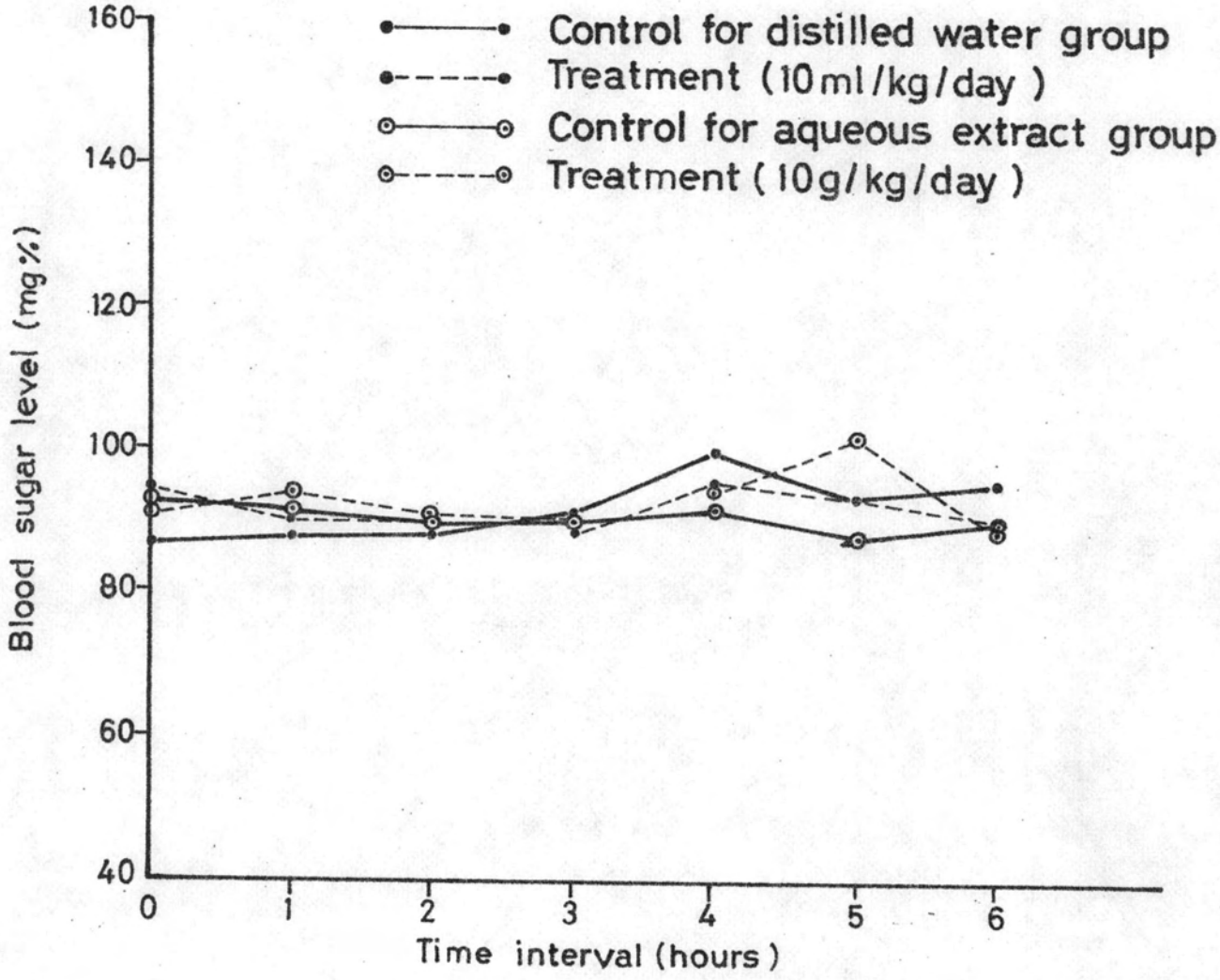

Fig. 9 Effect of 7-day oral administrations of distilled water and of aqueous extract of *S. sanitwongsei* Craib. on blood sugar levels of rabbits.

Table 9

Effect of single-dose oral administrations of aqueous extract of S. trilobatum L. on blood sugar levels of rabbits

No. Of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	5 g/kg	87.0	81.5	93.5	93.3	100.0	88.0	86.2	84.0	79.7	77.5	78.0	78.5	78.0	73.1
2		89.8	81.5	96.0	94.8	93.3	93.3	90.1	80.5	87.5	82.5	78.5	83.5	84.0	78.5
3		88.0	82.1	87.5	85.0	89.0	87.5	85.3	94.5	89.3	84.0	83.5	84.5	82.0	76.8
Mean		88.3	81.7	92.3	91.0	94.1	89.6	87.2	86.3	85.5	81.3	80.0	82.2	81.3	76.1
± S.D.		1.4	0.4	4.4	5.3	5.5	3.1	2.6	7.3	5.1	3.4	3.0	3.2	3.1	2.8
Probability											<0.05	<0.05	<0.05	<0.05	<0.01
1	10 g/kg	91.5	85.2	94.0	95.2	82.1	82.1	86.3	97.2	91.0	90.0	89.2	96.5	85.8	92.5
2		104.0	100.0	109.6	89.8	113.1	100.0	98.7	99.5	107.4	90.5	103.0	108.6	105.5	103.0
3		110.0	102.5	119.6	119.6	118.0	108.2	105.2	117.0	102.0	102.5	99.5	96.5	94.5	101.2
Mean		101.8	95.9	107.7	101.5	104.4	96.8	96.7	104.6	100.1	94.3	97.2	100.5	95.3	98.9
± S.D.		9.4	9.4	12.9	13.4	19.5	13.4	9.6	10.8	8.4	7.1	7.2	7.0	9.9	5.6
Probability															

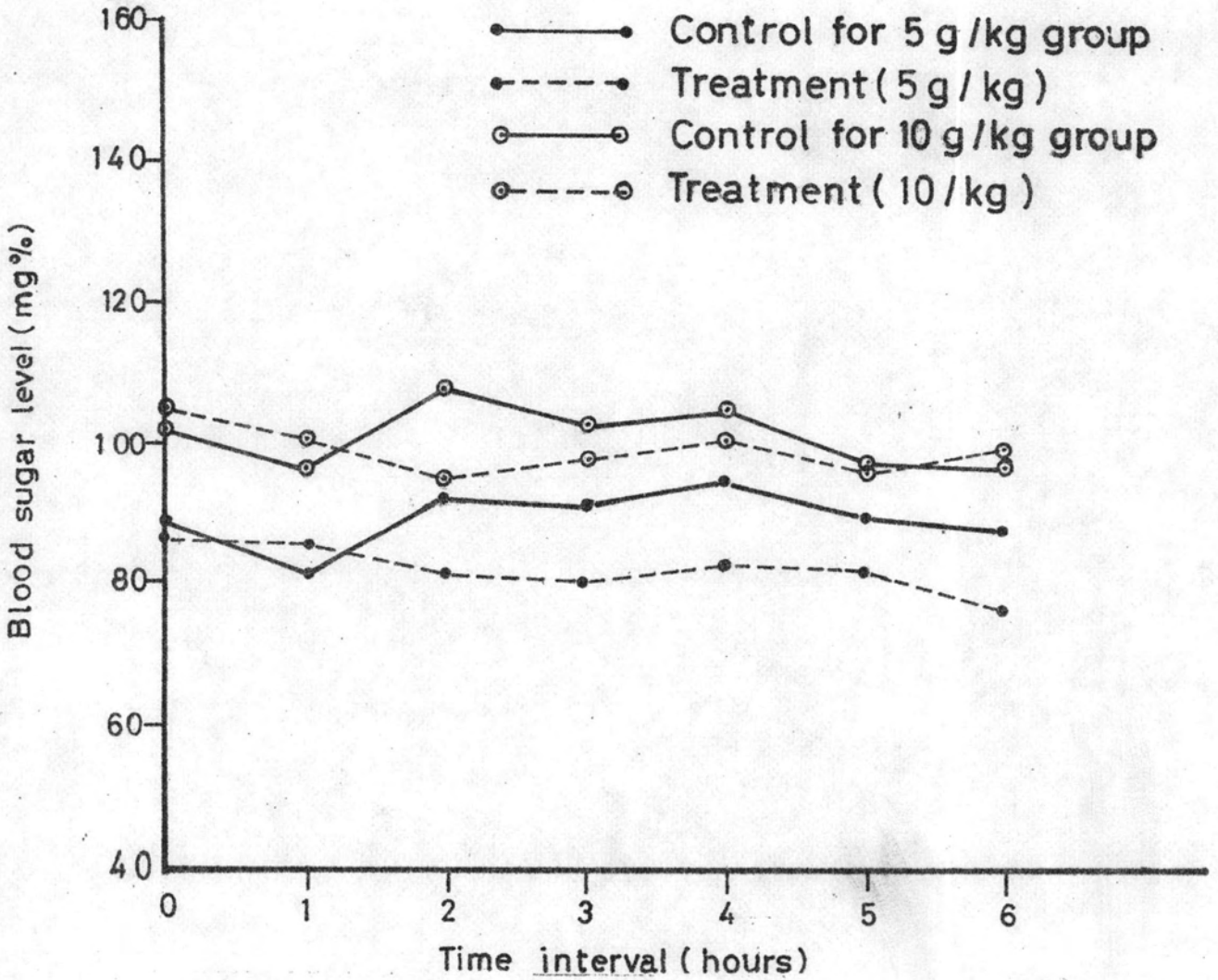

Fig.10 Effect of single dose oral administrations of aqueous extract of *S. trilobatum* L. on blood sugar levels of rabbits.

Table 10

Effect of oral administrations of distilled water, of aqueous extract of *S. trilobatum L.* and of chlorpropamide on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	Distilled	95.8	107.2	113.1	109.9	104.5	109.0	100.0	88.0	95.5	96.5	97.5	99.5	98.0	100.0
2		83.5	102.0	116.5	95.8	78.9	105.5	99.0	100.0	120.3	122.0	116.0	128.0	117.5	116.0
3	water	63.5	94.8	117.0	110.2	100.0	96.8	89.0	80.1	94.5	103.0	105.0	99.6	94.8	84.1
4	5 ml/kg	110.1	105.1	124.5	109.8	102.5	102.5	95.2	91.8	97.2	100.4	99.1	106.2	112.5	98.6
Mean		88.2	102.3	117.8	106.4	96.5	103.5	95.8	90.0	101.9	107.2	104.4	108.3	105.7	99.7
± S.D.		19.7	5.4	4.8	7.1	11.9	5.2	4.9	8.3	12.3	13.0	8.4	13.5	11.0	13.0
Probability															
1	Aqueous	81.5	105.1	124.5	93.2	94.6	94.6	90.0	89.5	132.8	127.5	122.5	107.0	103.7	83.1
2	extract of	89.0	88.2	100.0	115.7	89.5	96.0	84.7	94.8	97.5	94.2	93.8	88.0	88.5	93.7
3	*Solanum*	108.0	113.2	130.2	105.1	115.7	115.7	101.0	98.8	105.0	94.2	93.8	96.5	98.0	94.8
4	*trilobatum*	74.2	85.2	97.5	90.0	84.2	84.2	79.0	87.5	94.2	93.8	93.8	97.0	94.8	92.1
	L. 5 g/kg														
Mean		88.2	97.9	113.1	101.0	96.0	97.6	88.7	90.2	167.4	102.4	101.0	97.1	96.3	90.9
± S.D.		14.5	13.4	16.7	11.8	13.8	13.2	9.4	6.1	12.3	16.7	14.4	7.8	6.3	5.3
Probability															

Table 10 (continued)

Effect of oral administration of distilled water, of aqueous extract of *S. trilobatum L.* and of chlorpropamide on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent												
		Control							Treated					
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	Chlorpro-	91.0	82.5	110.1	95.2	91.5	91.5	86.9	93.0	94.2	87.0	89.0	89.0	88.0	75.1
2	pamide	72.6	83.5	99.5	88.4	79.0	79.0	77.5	68.5	76.0	64.9	49.0	35.6	Died	
3		89.2	89,2	100.5	87.0	85.3	85.3	84.2	89.0	94.5	84.8	72.6	72.8	72.8	60.2
4	125 mg/kg	73.8	96.0	114.2	100.0	92.1	92.1	98.0	70.5	62.3	61.2	55.8	54.8	55.5	54.8
Mean		81.7	87.8	106.1	92.7	87.0	87.0	86.7	80.3	81.8	74.5	66.6	63.1	72.1	63.4
± S.D.		9.8	6.2	7.2	6.1	6.1	6.1	8.5	12.6	15.6	13.3	17.9	23.0	16.3	10.5
Probability											<0.01	<0.05	<0.05	<0.05	<0.025

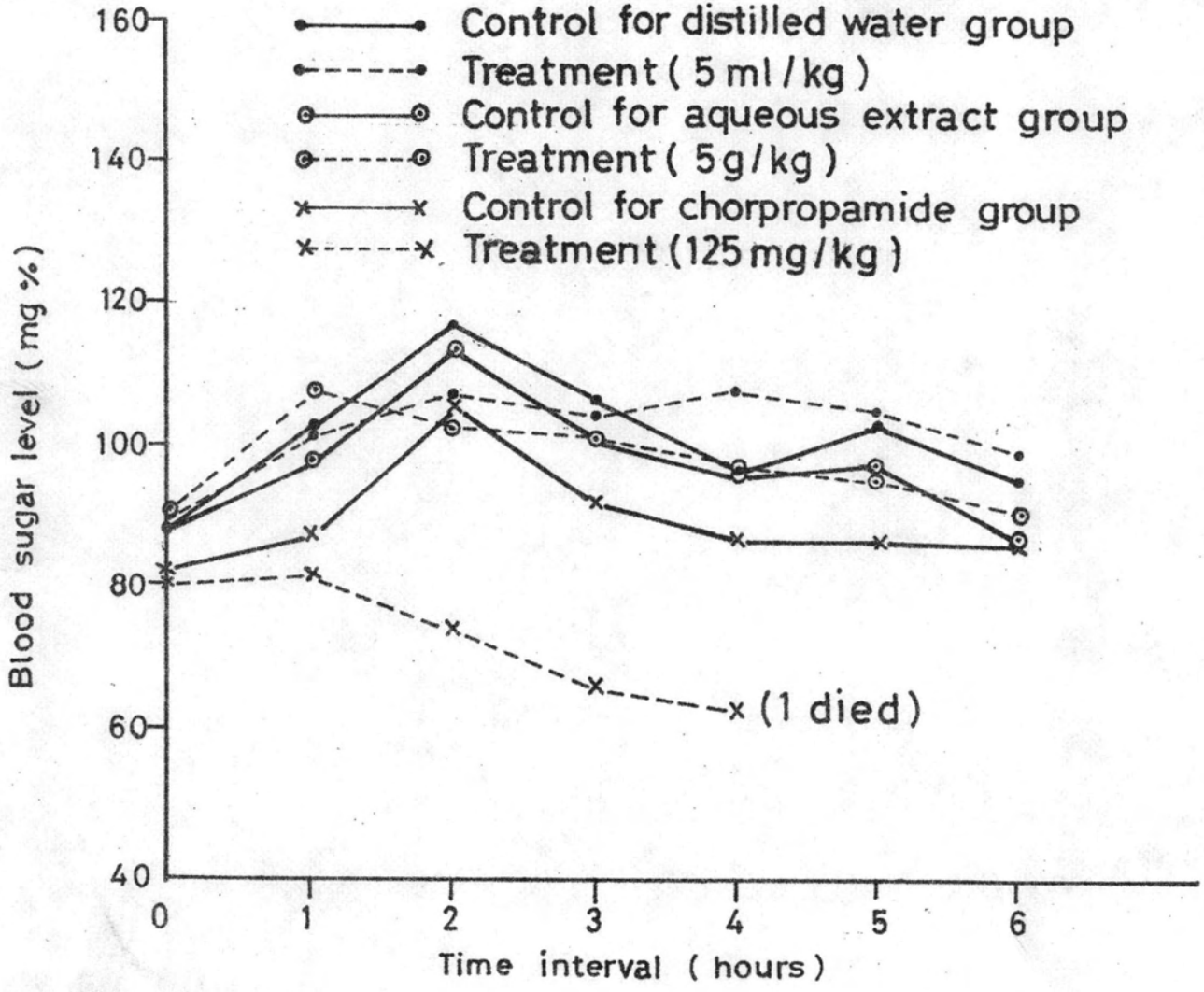

Fig.11 Effect of oral administrations of distilled water, of aqueous extract of *S. trilobatum* L. and of chlorpropamide on blood sugar levels of rabbits.

Table 11

Effect of 3-day oral administrations of aqueous extract of S. trilobatum L.

on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	5 g/kg/day	101.0	103.5	103.5	120.5	113.5	98.5	99.7	115.5	90.0	95.5	90.0	87.5	87.0	85.5
2		120.5	139.5	135.0	152.0	127.5	109.0	112.1	99.2	80.2	79.5	76.0	85.0	90.5	80.0
3		122.0	114.0	114.0	145.8	116.0	112.0	114.0	128.0	87.0	95.5	96.0	96.0	98.6	92.0
4		119.0	101.5	110.2	120.5	114.0	96.0	99.8	123.5	90.0	104.7	101.5	103.5	104.0	110.0
5		127.5	126.7	114.0	131.5	128.0	115.0	117.4	85.5	89.5	92.0	86.2	87.2	87.0	85.0
6		125.0	114.0	114.5	124.0	106.0	97.0	100.2	135.3	116.0	112.0	104.7	107.5	103.5	105.5
7		107.5	107.0	107.5	107.5	106.5	105.0	107.2	107.2	104.4	101.0	101.0	101.8	102.4	92.0
8		107.3	102.0	107.0	98.5	100.5	90.0	96.5	95.3	92.0	89.5	89.5	95.3	91.0	86.0
9		103.0	92.5	97.0	102.5	97.4	91.5	91.0	104.0	102.2	101.8	101.0	97.0	95.3	104.5
10		102.0	85.7	91.0	90.5	88.5	89.5	82.5	107.6	90.0	79.4	88.3	89.5	88.3	88.3
11		102.0	92.5	101.8	103.0	96.5	92.0	93.5	107.0	107.0	105.5	95.4	88.3	95.5	96.8
12		99.5	85.7	85.0	83.5	81.0	81.0	82.0	107.5	86.3	86.2	85.8	92.5	80.5	86.0
	Mean	111.4	105.4	106.7	115.0	106.3	98.0	99.7	109.6	94.6	95.2	93.0	94.3	93.6	92.6
	± S.D.	10.6	16.3	12.9	21.2	14.4	10.3	11.5	14.1	10.4	10.3	8.4	7.2	12.1	9.5
	Probability										<0.05	<0.005	<0.025		

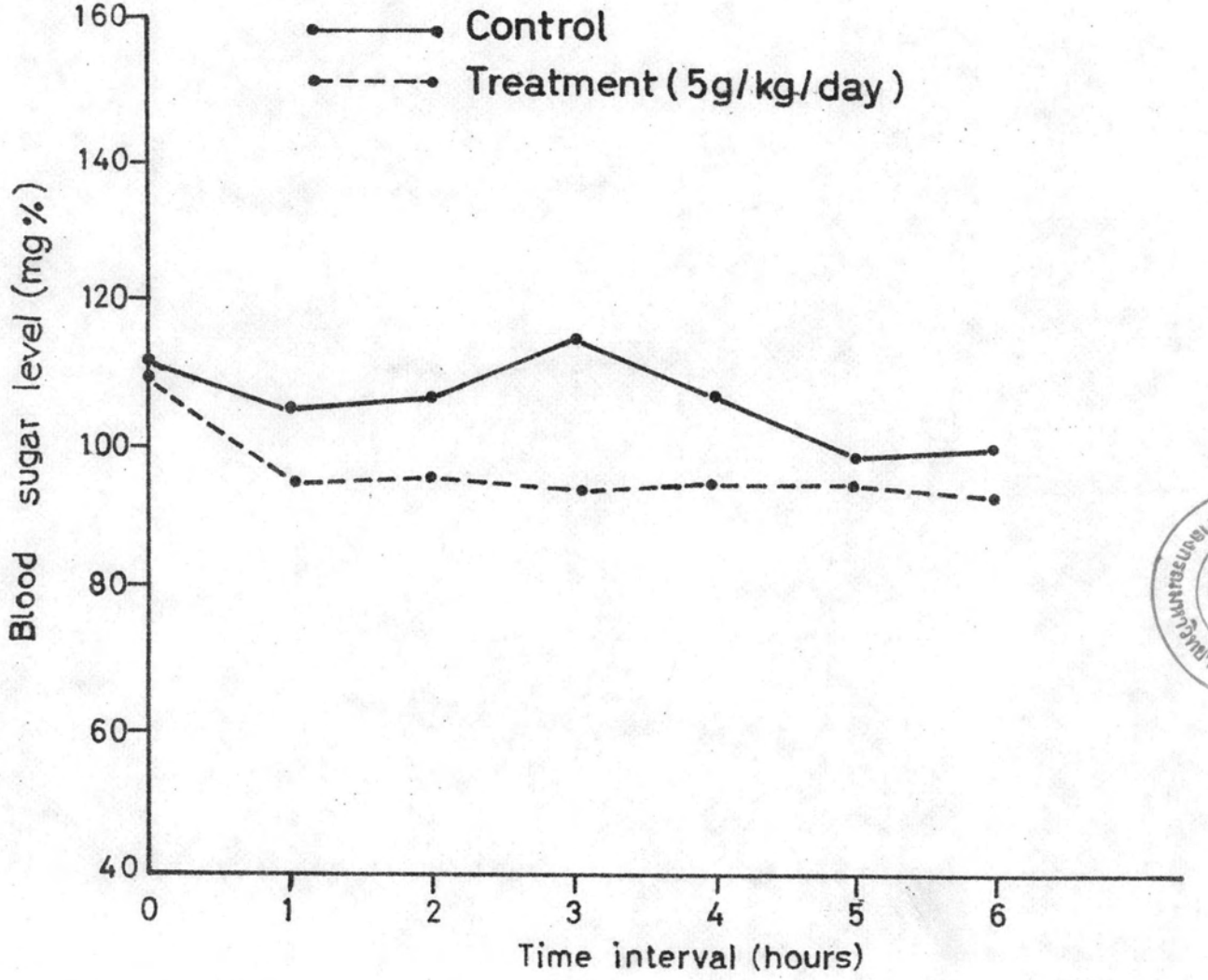

Fig. 12 Effect of 3-day oral administrations of aqueous extract of *S. trilobatum* L. on blood sugar levels of rabbits.

which received once daily oral administration of 10 ml/kg of distilled water and of 10 g/kg of the berries of S. trilobatum, in the form of aqueous extract, respectively, The blood samples were taken just before and at hourly intervals after the seventh dose as previously.

The results are shown in Table 12 and Figure 13.

Calculation

In each of these experiments, the normal variation pattern of the blood sugar level of each individual animal during six hours was determined, which served as the control of that animal. Each animal, therefore, was used as his own control, and the results of the following experiments were compared statistically against these control values at particular period of time. In the statistical calculation, the Student's t test table was used in the determination of the significance of the data.

Table 12

Effect of 7-day oral administrations of distilled water and of aqueous extract of *S. trilobatum* L. on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1	Distilled water 10 ml/kg/ day	83.0	83.5	85.0	99.5	107.0	93.5	104.1	96.5	80.0	84.5	95.0	95.1	84.5	94.0
2		81.8	83.0	90.0	85.7	87.7	83.0	84.6	83.7	85.0	89.8	80.5	94.5	106.5	89.8
3		95.3	85.9	91.5	102.7	107.2	96.0	98.7	94.3	89.1	86.5	88.4	90.2	97.0	88.5
4		107.2	107.0	107.5	107.8	108.0	107.0	105.4	104.1	105.6	101.0	100.2	97.5	105.2	90.1
5		76.5	78.5	87.0	80.0	92.5	84.5	86.1	99.7	111.5	101.0	96.0	101.0	74.8	79.0
6		72.5	79.0	84.5	87.5	103.8	105.5	98.7	89.9	71.5	76.8	73.5	84.5	85.0	88.0
7		79.0	84.5	79.0	85.2	100.0	102.5	99.1	100.6	95.0	95.7	90.5	106.2	107.2	106.5
8		79.0	82.3	78.5	79.0	90.0	79.0	88.4	85.2	83.0	79.8	82.5	94.0	90.5	83.0
Mean		84.3	85.5	87.9	90.9	99.5	93.9	95.6	94.3	90.1	89.4	88.3	95.4	93.8	89.9
± S.D.		11.4	9.1	9.2	10.9	8.3	10.8	8.1	7.4	13.4	9.2	8.9	6.6	12.1	8.2
Probability															

Table 12 (Cont.)

Effect of 7-day oral administrations of distilled water and of aqueous extract of *S. trilobatum* L. on blood sugar levels of rabbits

No. of rabbit	Dose	Blood sugar in mg per cent													
		Control							Treated						
		0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs	0	1 hr	2 hrs	3 hrs	4 hrs	5 hrs	6 hrs
1		86.0	86.0	84.5	92.0	96.5	92.0	94.3	88.7	89.6	85.5	90.2	85.0	90.2	84.5
2		81.0	75.5	81.6	84.7	81.0	87.6	80.2	82.1	78.0	84.0	79.5	84.5	93.5	79.0
3	*Solanum*	100.0	87.4	107.0	95.0	96.5	90.0	93.1	93.8	90.1	88.5	95.5	95.0	82.5	84.5
4	*trilobatum*	101.7	107.0	107.1	104.8	102.8	97.0	100.4	99.4	87.1	89.8	94.0	96.5	99.2	89.2
5	L.	74.0	79.5	75.5	75.0	74.0	74.5	73.7	77.1	112.0	98.0	84.5	95.5	71.0	91.0
6	10 g/kg/	120.0	105.2	94.5	99.8	101.2	90.5	97.1	98.9	111.5	103.0	106.1	103.0	85.3	101.5
7	day	88.5	95.0	85.0	88.0	88.5	88.5	87.5	86.1	87.5	85.5	84.0	95.5	85.7	85.5
8		86.0	89.5	83.0	81.5	94.0	91.8	90.8	95.4	95.5	91.3	85.2	100.5	90.5	89.3
Mean		92.2	90.6	89.8	90.1	91.8	88.9	89.6	90.2	93.9	90.7	89.9	94.4	87.2	88.1
± S.D.		14.5	11.3	11.9	9.8	10.0	6.5	8.9	8.1	12.0	6.7	8.5	6.6	8.4	6.6
Probability															

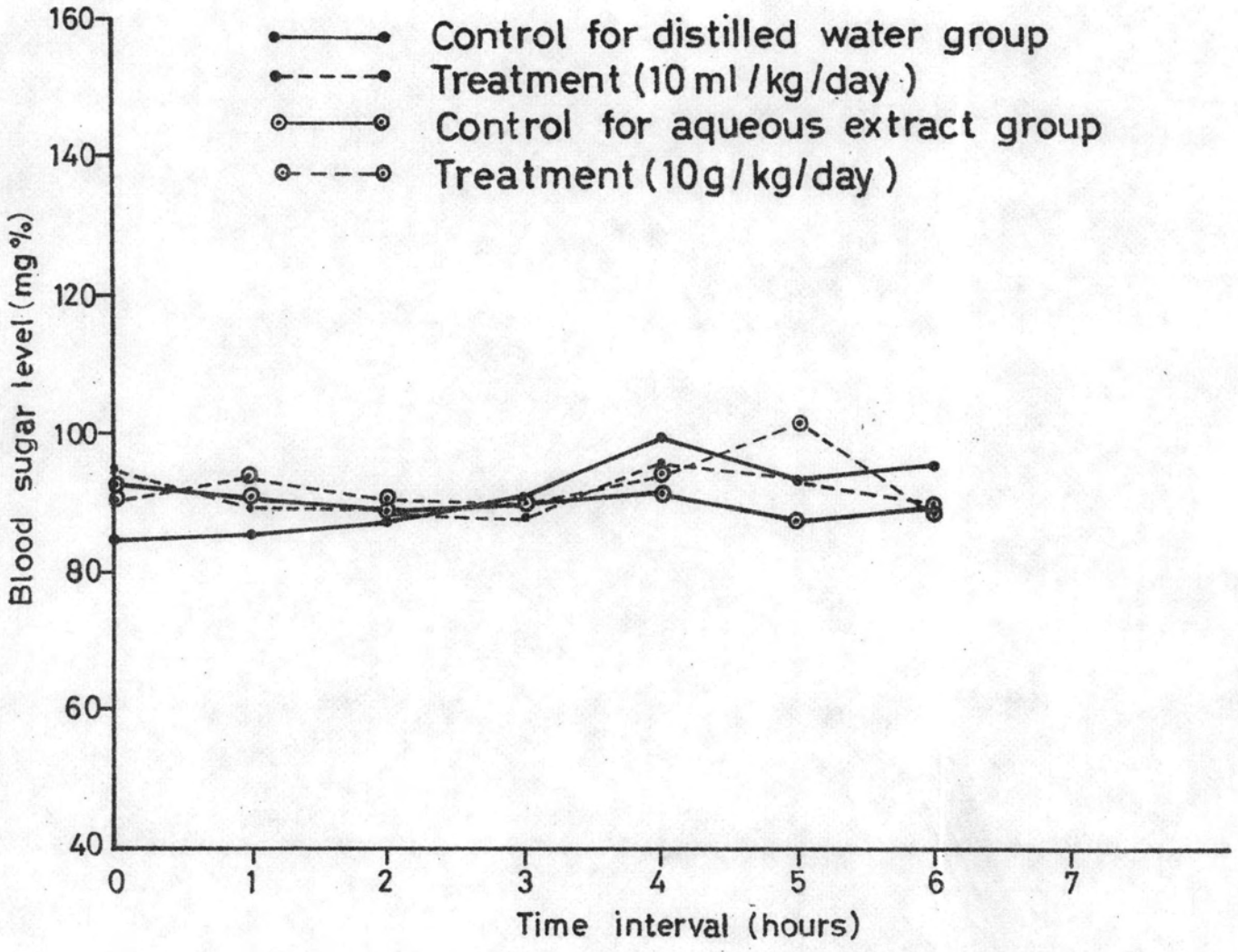

Fig. 13 Effect of 7-day oral administrations of distilled water and of aqueous extract of *S. trilobatum* L. on blood sugar levels of rabbits.