

Table 1 Effects of different treatments on food intake, water intake and urine volume in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
Food intake	73.3	183.5	91.1	138.1	97.8	118.6
	78.9	174.3	96.4	194.5	120.5	98.2
	67.5	188.4	125.6	173.2	125.1	103.3
	76.9	198.3	123.6	130.2	129.8	124.7
	67.7	147.8	138.1	138.8	136.3	92.6
	76.6	180.5	134.8	130.9	121.8	115.2
	96.8	118.1	142.6	151.4	133.4	108.6
	76.2	172.9	121.8	136.9	127.7	76.6
	56.9	174.9	118.8	161.4	125.9	103.3
	74.5	191.7	128.7	157.9	168.8	119.5
Water intake	90.8	572.5	273.3	264.4	214.3	255.8
	82.1	522.9	286.2	261.5	183.5	194.6
	70.2	565.2	266.8	275.3	259.6	219.9
	90.2	594.9	271.8	291.7	190.6	174.1
	70.4	443.4	207.3	208.9	290.4	177.8
	79.7	541.5	204.4	265.4	192.7	229.6
	90.7	459.3	227.8	199.6	294.4	225.8
	79.2	518.7	215.4	283.1	210.7	228.8
	59.5	594.7	256.4	277.7	214.2	209.9
	77.5	691.1	285.1	218.4	189.1	179.5
Urine volume	104.3	443.8	244.6	235.7	227.1	205.6
	74.3	464.2	257.5	229.8	185.9	154.8
	63.4	436.5	238.1	226.6	191.2	232.9
	102.4	456.2	243.1	204.3	195.4	171.9
	63.6	414.9	178.6	190.2	199.1	261.7
	91.9	412.8	176.2	236.7	200.9	195.4
	101.9	430.6	179.1	175.9	197.1	165.7
	75.4	575.3	186.7	234.4	199.1	182
	91.7	576.1	227.7	213.7	181.2	185.5
	69.7	464.4	256.4	189.7	248.1	180.4

Table 2 Effects of different treatments on blood glucose, insulin and HOMA value in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
blood glucose before treatment	4.1	30.5	20.9	27.9	20.3	22.4
	6.2	22.1	20.5	29.5	22.2	28.1
	5.4	29.5	31.3	27.6	22.4	23.8
	4.3	23.2	22.9	31.2	25.9	25.3
	4.1	22.4	30.3	22.7	29.9	24.9
	5.2	22.6	31.4	23.8	27.1	23.9
	5.4	31.4	21.7	21.7	29.9	23.1
	5.3	27.8	21.9	23.1	29.5	26.7
	5.7	32.3	31.2	25.1	21.1	22.9
	6.3	21.8	20.4	21.3	24.4	30.1
blood glucose 4 weeks treatment	7.5	25.6	23.1	22.2	25.1	23.8
	8.6	30.8	16.1	22.9	25.3	11.9
	5.7	31.2	16.8	15.1	23.1	16.8
	6.3	30.1	21.2	23.3	18.9	21.8
	9.1	29.8	17.4	20.5	18.1	15.7
	5.2	27.6	21.0	23.2	13.2	18.4
	5.1	29.2	23.6	29.3	13.1	14.5
	5.3	28.1	16.7	21.1	24.3	22.1
	5.7	22.3	22.8	16.4	22.7	22.4
	6.2	31.4	27.7	16.5	17.7	16.2
blood glucose 8 weeks treatment	5.9	32.4	16.7	22.9	20.2	20.2
	6.7	27.6	19.6	27.3	14.4	16.2
	6.1	24.4	15.7	17	22.6	19.2
	7.1	27.5	16.3	20.1	16.5	13.7
	6.6	32.6	26.7	20.9	16.6	15.3
	6.7	31.8	14.1	15.8	15.3	10.1
	5.5	21.9	21.6	10.4	15.6	26.8
	6.3	26.9	10.8	20.9	21.4	15.2
	6.7	32.7	14.3	23.2	21.7	17.4
	6.7	27.6	22.3	16.2	12.4	16.2
blood glucose 12 weeks treatment	8.7	22.1	18.0	23.9	12.2	20.3
	7.9	24.7	11.1	23.3	12.7	18.8
	6.8	25.2	17.8	19.1	14.1	17.7
	6.8	25.5	17.8	19.1	14.4	16.9
	6.5	25.6	12.2	18.7	16.8	16.1
	6.4	26.6	19.8	16.8	17.9	15.6
	6.3	26.9	20.2	15.7	18.3	14.4
	6.1	28.3	20.4	15.4	18.3	13.5
	5.9	29.2	22.4	13.8	19.4	10.6
	5.6	31.4	28.6	13.2	25.4	10.5
insurn	17.6	11.7	18.2	15.7	19.9	13.7

	20.4	13.1	17.7	18.6	12.2	14.8
	20.5	14.4	16.9	18.7	12.2	15.2
	20.7	13.8	16.4	19.6	12.3	16.2
	20.9	15.9	15.4	14.2	14.3	14.9
	21.1	15.6	15.6	14.4	15.4	11.5
	21.8	15.2	15.6	13.1	16.1	15.1
	22.5	15.1	14.1	13.2	17.4	17.8
	22.6	13.3	14.1	13.2	18.9	13.5
	24.1	14.4	14.8	14.1	11.6	18.6
HOMA value	6.8	11.5	14.6	16.7	10.8	12.4
	7.2	14.4	8.7	19.3	6.9	12.4
	6.2	16.1	13.4	15.9	7.6	12.0
	6.3	15.6	13.0	16.6	7.9	12.2
	6.0	18.1	8.4	11.8	10.7	10.7
	6.0	18.4	13.7	10.8	12.3	8.0
	6.1	18.2	14.0	9.1	13.1	9.7
	6.1	19.0	12.8	9.0	14.2	10.7
	5.9	17.3	14.0	8.1	16.3	6.4
6.0	20.1	18.8	8.3	13.1	8.7	

Table 3 Effects of different treatments on liver index, liver glycogen and muscle glycogen in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
Liver index	20.2	49.4	58.1	52.5	45.6	43.7
	23.5	38.9	42.4	37.8	30.8	29.8
	26.2	49.6	25.6	40.2	36.8	34.1
	22.9	49.2	40.4	43.3	39.0	37.0
	22.5	46.0	31.3	46.7	36.8	28.4
	20.3	54.8	31.8	36.7	48.9	32.7
	26.5	46.0	69.5	36.0	38.2	35.3
	21.6	42.2	45.3	55.0	30.3	39.2
	26.5	45.4	40.6	42.3	32.5	32.3
	22.1	38.1	35.1	43.0	39.3	46.3
Liver glycogen	13.7	8.3	10.6	9.4	10.8	12.2
	16.6	8.9	11	14.3	13.2	16.3
	10.3	8.5	11	9.6	10.6	11.6
	9.2	7.9	10.5	14.6	11.4	9.6
	9.4	9.1	17.2	9.9	9.9	10.7
	12	9.4	14.1	8.9	11.4	13
	14.6	9.2	10.6	8.9	8.7	8.6
	14.3	8.8	9.7	10.8	12	11.8
	16.2	10.7	14.6	11.2	12.6	12.7
	16.4	10.8	16.1	11.1	13.1	11.9
Muscle glycogen	1.91	1.28	1.33	1.61	1.62	1.9
	2.43	1.42	1.66	2.02	1.56	1.75
	1.81	1.49	1.44	1.19	1.53	2.04
	1.55	1.16	1.58	1.53	1.41	1.38
	1.95	1.65	1.32	1.53	1.67	2.09
	1.77	1.39	2.64	1.61	1.71	1.54
	1.81	1.14	2.24	1.29	1.42	1.81
	1.82	1.26	1.31	2.04	1.97	1.91
	1.82	1.47	1.96	1.88	1.72	1.99
	2.34	1.48	2.11	1.91	1.84	1.83

Table 4 Effects of different treatments on TG, TC, LDL-c, NEFA and HDL-c in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
--	----	----	-----	---------	---------	---------

TG	0.9	2.12	1.27	1.82	1.83	1.09
	0.27	2.11	1.97	0.96	1.18	0.62
	0.88	2.29	1.59	1.96	1.78	1.57
	0.42	2.98	1.55	1.21	0.95	1.54
	0.99	1.99	1.21	1.57	1.06	1.11
	0.93	2.42	1.06	1.52	1.42	1.02
	0.73	2.87	0.91	1.82	1.91	1.24
	0.54	2.01	1.73	1.52	1.12	1.34
	0.48	2.61	1.55	1.11	1.45	1.54
	0.99	1.91	1.21	1.47	1.06	1.21
TC	2.86	6.36	3.81	3.46	3.49	3.27
	3.08	5.33	5.91	2.88	3.54	1.29
	3.22	5.17	4.77	3.08	3.34	4.71
	2.58	6.58	4.65	2.63	2.86	4.52
	2.66	5.47	3.63	4.71	3.18	3.33
	3.12	4.26	3.58	3.46	4.66	3.06
	2.95	5.61	2.63	2.96	2.73	3.72
	2.56	5.03	5.19	4.56	3.81	4.02
	2.32	5.83	4.65	3.29	4.35	2.62
	3.61	4.29	4.93	4.41	3.18	1.68
HDLC	1.43	0.91	0.76	1.49	1.07	1.65
	1.59	0.81	1.18	1.58	0.71	1.56
	1.91	0.86	1.15	0.92	1.67	1.01
	1.29	1.01	0.83	1.53	1.57	1.69
	1.01	0.91	1.23	0.94	1.64	1.87
	1.59	0.71	0.71	0.99	0.93	1.61
	1.48	0.91	1.43	1.49	1.55	1.74
	1.12	0.84	1.04	1.07	0.76	0.98
	1.96	0.85	1.43	1.16	0.97	1.52
	2.19	0.72	0.99	0.98	1.61	1.78
LDLC	1.41	5.12	3.04	2.06	1.96	1.86
	1.39	3.04	2.72	2.24	2.32	1.24
	1.43	4.98	2.6	2.04	3.67	2.44
	1.29	5.04	3.32	1.76	2.12	1.96
	1.51	4.99	1.92	2.48	1.76	3.58
	1.69	2.04	2.84	1.74	1.96	1.04
	1.48	4.56	1.82	1.96	1.96	1.96
	1.42	3.16	2.16	3.65	1.38	1.72
	1.66	3.04	1.72	2.08	1.64	0.25
	1.25	2.02	3.16	2.12	1.92	0.88
NEFA	362	404	372	409	364	305
	296	456	382	396	396	396
	382	496	392	208	376	358

	304	336	306	358	338	372
	286	498	377	405	359	210
	318	394	242	294	245	324
	408	404	384	374	396	304
	282	412	394	306	406	386
	280	452	286	385	396	388
	288	434	449	376	312	229

Fig. 3 Effects of Pdio on body weight in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
0	202	207	205	216	187	175

	210	241	245	245	181	270
	216	206	208	188	182	245
	242	252	202	183	206	238
	263	250	170	250	224	202
	178	244	180	241	236	180
	230	201	235	205	241	245
	218	236	252	187	243	202
	240	224	212	252	244	212
	220	163	242	190	250	242
2	284	310	304	303	310	304
	250	304	330	304	255	265
	303	311	306	330	300	286
	305	255	335	305	304	336
	310	318	303	304	311	306
	277	300	287	300	308	303
	302	251	350	290	347	287
	301	310	288	301	336	288
	316	343	304	320	310	304
	270	352	303	290	251	303
4	259	405	311	297	360	380
	266	295	287	297	366	370
	377	330	335	330	330	340
	321	338	286	360	285	340
	328	335	375	340	280	295
	275	266	370	390	310	303
	364	320	320	350	422	277
	308	395	385	360	370	309
	303	288	277	286	292	349
	325	370	355	310	289	341
7	450	300	370	332	305	311
	419	312	303	306	295	350
	413	304	340	304	338	335
	418	325	365	330	335	335
	355	305	345	290	330	287
	455	322	329	320	320	286
	350	340	307	315	381	320
	390	330	314	340	370	385
	430	308	309	325	288	277
	390	310	360	328	266	355
9	484	347	382	271	350	300
	510	320	294	297	313	365
	469	318	286	350	318	312
	495	320	296	289	319	325

	474	301	300	380	355	305
	482	317	335	390	334	322
	375	279	305	276	350	371
	415	288	288	320	299	330
	470	319	284	286	301	368
	415	268	320	330	295	310
11	485	301	315	365	305	332
	500	330	322	312	345	358
	442	301	355	353	349	347
	491	330	345	357	370	330
	460	316	338	310	303	306
	495	304	297	330	360	349
	462	345	380	330	329	328
	430	360	252	285	314	325
	478	289	314	338	309	315
	495	305	320	320	307	304
13	515	318	341	343	271	350
	545	312	356	282	381	388
	462	314	305	372	351	377
	523	392	374	259	297	355
	462	283	325	305	289	334
	512	301	312	306	391	318
	548	329	399	331	276	295
	521	315	255	317	320	299
	456	280	296	301	330	359
	467	298	417	314	386	371
15	523	321	375	315	297	384
	571	323	342	391	297	366
	475	319	331	304	330	394
	532	336	385	269	382	385
	525	338	303	309	379	280
	473	322	375	315	390	310
	533	290	343	275	337	422
	453	300	341	336	360	397
	553	267	316	287	286	361
	549	315	323	286	310	369
17	525	303	340	337	373	348
	560	317	360	292	376	391
	480	307	319	346	372	391
	523	312	395	358	367	388
	550	303	316	263	331	381
	480	300	285	312	317	342

	540	315	285	310	341	276
	456	292	348	315	314	376
	569	286	420	325	312	385
	579	269	410	320	298	386

Fig. 4 Effects of Pdio on OGTT in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
0h	7.2	21.4	20.8	18.5	8.5	20.0
	5.2	16.7	11.9	16.4	16.9	13.2
	5.4	17.0	13.6	17.1	18.3	15.3

	5.4	19.1	16.6	17.7	19.2	15.7
	5.4	19.2	16.8	18.8	19.9	16.8
	5.8	22.3	17.0	19.8	20.0	17.8
	6.6	24.2	18.4	20.1	20.6	18.4
	6.8	24.9	18.6	20.9	21.4	19.8
	6.9	24.9	18.7	21.3	22.0	20.2
	7.5	26.3	20.2	22.4	22.7	21.6
0.5h	5.3	23.0	14.6	12.6	15.2	14.1
	5.4	26.2	15.1	18.9	15.3	14.8
	6.1	26.6	15.3	19.6	17.4	16.5
	6.2	27.4	15.7	19.8	18.3	16.8
	6.3	27.6	16.8	21.9	21.4	17.4
	7.5	27.7	18.7	22.9	22.2	18.9
	7.8	29.4	21.2	24.1	22.4	19.7
	8.5	31.4	22.7	26.2	23.5	23.1
	8.9	31.7	23.6	26.9	24.5	24.3
	9.1	31.7	25.0	27.4	24.8	25.5
1h	6.8	23.9	18.7	19.2	17.7	17.8
	7.0	26.8	19.8	20.9	18.7	19.6
	7.5	27.3	20.6	22.9	19.6	19.8
	7.8	31.0	20.7	23.4	20.1	19.9
	7.9	31.9	21.6	23.6	22.1	20.4
	8.2	32.1	22.3	24.0	22.2	20.7
	8.4	32.7	22.7	24.2	23.4	21.6
	8.4	34.0	23.4	26.7	23.9	21.9
	8.6	34.9	25.9	27.4	25.7	24.4
	8.8	35.0	29.2	29.5	28.2	24.8
2h	5.2	21.7	16.9	17.8	15.4	17.6
	5.8	22.4	18.7	18.3	16.7	17.8
	5.9	25.9	19.9	18.9	16.9	18.4
	6.1	26.2	20.1	19.1	17.3	19.4
	6.8	26.3	20.5	19.1	17.5	20.1
	6.9	26.9	20.9	21.3	18.2	20.2
	7.0	28.2	21.1	22.1	18.6	20.4
	7.2	28.3	21.3	23.1	19.8	20.4
	7.5	28.9	23.6	23.6	22.5	20.7
	7.8	29.8	23.7	25.2	24.0	21.4
AUC	12.2	45.6	35.0	34.2	30.7	34.2
	12.1	48.6	34.7	38.4	34.2	34.3
	13.0	51.0	36.4	40.7	36.4	36.1
	13.3	54.8	37.6	41.4	37.7	37.0
	13.9	55.7	39.0	42.9	41.0	38.3
	14.8	57.0	40.8	45.0	41.9	39.5

	15.3	59.4	42.8	46.3	43.2	40.9
	15.8	61.6	44.2	49.9	44.9	43.1
	16.4	62.7	47.7	51.1	48.3	45.8
	16.9	63.6	51.3	54.0	51.2	47.5

Fig. 5 Effects of Pdio on GHb in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
GHb	16.4	37.7	25.5	26.2	25.6	25.1
	23.4	37.1	26.8	30.5	28.3	25.9
	20.1	33.3	25.8	30.9	30.1	29.0
	26.4	42.7	25.8	34.1	32.0	30.6
	25.4	38.2	29.5	32.6	30.8	23.5

	18.3	40.7	39.5	35.5	24.0	17.0
	21.8	39.7	35.1	40.7	39.7	26.8
	22.1	45.7	25.1	22.8	25.4	32.8
	24.7	38.2	38.6	37.6	34.6	36.4
	19.7	23.6	28.6	27.7	25.6	20.8

Fig. 6 Grade of histopathological changes

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
Grade of histopathological changes	1	3	2	2	2	2
	0	3	3	2	3	1
	1	3	1	2	1	3
	1	2	0	2	1	2
	0	3	1	3	1	0
	0	3	1	3	2	2

	0	2	2	2	2	1
	0	2	3	1	2	2
	0	2	1	1	1	1
	0	1	0	1	1	0

Fig. 7 Effect of Pdio on adiponectin in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
adiponectin	1.44	0.97	1.55	0.62	1.56	1.51
	1.34	1.41	1.28	1.05	1.43	1.59
	1.01	1.23	1.58	1.09	1.21	0.79
	1.64	1.27	1.58	1.41	1.42	1.66
	0.54	1.02	1.25	1.26	1.08	1.35
	0.83	1.07	1.25	1.55	1.44	1.63
	1.18	0.97	1.51	1.07	1.47	1.68

	1.21	1.57	0.51	0.98	1.54	1.78
	1.47	0.92	1.26	1.36	1.46	1.69
	1.97	1.06	0.86	1.67	1.56	1.58

Fig. 8 Effect of Pdio on GLUT-4 in diabetic rats.

	NC	DC	MET	Pdio-10	Pdio-20	Pdio-40
GLUT-4	7.38	5.60	6.21	6.60	7.33	8.11
	10.34	6.69	8.72	8.38	7.61	9.69
	10.91	5.77	6.28	6.49	6.82	8.09
	8.46	6.17	7.70	7.13	9.43	8.27
	10.40	6.03	6.63	7.05	8.79	7.23
	7.63	4.97	5.47	8.90	9.02	7.58
	8.99	8.86	8.04	8.43	8.11	9.43
	12.60	9.26	7.65	8.61	6.95	9.54

	9.29	7.73	6.75	6.63	9.02	7.23
	7.21	6.97	7.22	8.26	8.19	9.92