Table S1. The effect of neonatal oral administration of zingerone on tibia and femoral masses, lengths and Seedor indices in suckling female pups

Parameter	Sex	DH_20	NM	t-Value	p-value
Induction body mass (g)	Male	24.71±2.33	23.94±2.98	0.56	0.59
	Female	23.88±2.67	22.22±2.14	0.68	0.51
Termination body mass (g)	Male	46.36±9.64	43.50±6.41	1.42	0.18
	Female	47.63±9.23	41.33±8.64	1.45	0.17
Tibia Mass (mg)	Male	60.14±15.15	48.88±9.78	1.74	0.11
	Female	56.75±12.99	46±13.26	1.72	0.11
Tibia length (mm)	Male	16.49±1.45	15.91±1.28	0.83	0.42
	Female	15.78±1.23	15.43±1.22	1.03	0.42
Tibia length/mass (mm/mg)	Male	3.61±0.65	3.05±0.38	2.08	0.06
	Female	3.35±0.58	2.94±0.60	1.45	0.17
Empty Carcass (g)	Male	36.29±6.60	33.50±5.35	0.91	0.38
	Female	36.94±7.60	32.75±7.12	1.20	0.25

Data is presented as mean ± standard deviation. p-value was set at $p<0.05$; NM-gavaged with 10ml/kg of nutritive milk.

Table S2. The effect of neonatal oral administration of zingerone on oxidative stress biomarkers, visceral fat and hepatic trighlyceride

Parameter	Sex	DH_20	NM	t-Value	p-value
CYP2E1(ng/ml)	Male	70.63±22.88	69.97±14.76	0.06	0.95
	Female	75.06±25.72	74.94±17.38	0.01	0.99
Catalase(µmol of H_20_2 consumed)	Male	2.14±0.83	2.14±0.94	0.02	0.98
	Female	2.29±0.84	1.92±0.90	0.70	0.50
SOD(U/mg protein)	Male	7.09±2.69	5.18±2.46	0.39	0.70
	Female	6.55±2.59	5.42±1.36	0.06	0.95
T GSH(µmol/g)	Male	5.88±2.03	4.35±1.81	1.54	0.15
	Female	5.56±1.49	5.77±1.66	0.26	0.80
TBARS(nmol/l)	Male	0.44±0.22	0.38±0.98	0.55	0.59
	Female	0.44±0.14	0.47±0.23	0.27	079
Hepatic Triglyceride (mmol/gprotein)	Male	0.65±0.09	0.60±0.08	1.07	0.30
	Female	0.64±0.10	0.60±0.55	1.16	0.26
Visceral fat (% Bwt)	Male	62.84±18.88	50.61±15.27	1.24	0.24
	Female	54.77±11.77	51.25±15.21	0.50	0.62

Data is presented as mean ± standard deviation. P-value was set at $p<0.05$; NM-gavaged with 10ml/kg of nutritive milk

Table S3. The effect of neonatal oral administration of zingerone on glucose and lipid profile in suckling rat pups.

Parameter	Sex	DH_20	NM	t-value	p-value
Glucose (mmol/l)	Female	5.49±0.39	5.74±0.53	1.12	0.28
	Male	5.59±0.62	5.41±0.37	0.66	0.52
TG(mmol/l)	Female	0.93±0.16	0.85±0.21	0.84	0.41
	Male	0.92±0.28	0.88±0.37	0.23	0.82
HDL (mmol/l)	Female	1.64±0.20	1.63±0.46	0.05	0.96
	Male	2.32±0.52	1.68±0.42	1.99	0.07
TC (mmol/l)	Female	2.33±0.54	2.49±0.76	0.38	0.71
	Male	2.59±0.43	2.66±0.91	0.16	0.87
LDL (mmol/l)	Female	1.32±0.43	1.19±0.96	0.29	0.78
	Male	1.09±0.18	1.35±0.54	1.01	0.34

Data is presented as mean ± standard deviation. p-value was set at $p<0.05$. DH_20-Distilled water; NM-gavaged with 10ml/kg of nutritive milk. TG=Triglycerides; HDL-high density lipoprotein cholesterol; TC= Total cholesterol; LDL=Low density lipoprotein cholesterol

Table S4: The effect of neonatal oral administration of zingerone on glucose and lipid metabolizing hormones in suckling rat pups

Parameter	**Sex**	DH_20	NM	t-value	p-value
Glucose (mmol/l)	Female	5.49±0.39	5.74±0.53	1.12	0.28
	Male	5.59±0.62	5.41±0.37	0.66	0.52
Insulin (ng/ml)	Female	1.47±0.14	1.10±0.47	1.69	0.08
	Male	1.47±0.26	1.10±0.32	2.19	0.05
HOMA-IR	Female	0.48±0.09	0.37±0.18	1.95	0.07
	Male	0.44±0.11	0.35±0.18	1.20	0.25
Leptin (ng/ml)	Female	1.10±0.38	0.91±0.21	0.68	0.51
	Male	1.10±0.32	0.89±0.27	1.11	0.29
ADP (ng/ml)	Female	0.89±0.36	0.78±0.19	0.63	0.54
	Male	0.80±0.27	0.73±0.19	0.55	0.62

Data is presented as mean ± standard deviation. p-value was set at $p<0.05$. ab = within row means with different letters significantly different at $P < 0.05$; DH_20-Distilled water; NM-gavaged with 10ml/kg of nutritive milk: HOMAIR = homeostatic model assessment of insulin resistance; ADP = Adiponectin; TG=Triglycerides; HDL =- high density lipoprotein cholesterol; TC = Total cholesterol; LDL = low density lipoprotein cholesterol

Table S5: The effect of neonatal oral administration of zingerone on the lengths, absolute and relative weights of visceral organs in suckling female pups.

Organ	DH_20	NM	t-value	p-value
Heart (g)	0.33±0.05	0.31±0.06	0.99	0.34
Heart rTL	0.20±0.04	0.20±0.02	0.005	0.99
Liver (g)	2.10±0.41	1.80±0.37	1.50	0.15
Liver rTL	1.25±0.17	1.19±0.21	0.64	0.53
Kidney (g)	0.61±0.086	0.55±0.10	1.30	0.21
Kidneys rTL	0.36±0.03	0.36±0.05	0.31	0.76
Stomach(g)	0.47±0.09	0.40±0.07	1.82	0.08
Stomach rTL	0.28±0.04	0.26±0.03	1.09	0.29
Caecum (g)	0.34±0.08	0.28±0.07	1.44	0.17
Caecum rTL	0.20±0.05	0.19±0.05	0.32	0.76
Pancreas (g)	0.25±0.06	0.21±0.04	1.97	0.07
Pancreas rTL	0.15±0.03	0.13±0.03	1.17	0.26
SI (g)	2.78±0.39	2.55±0.39	1.97	0.07
SI (cm)	78.13±3.83	70.70±7.68	2.49	0.02
SI r TL	1.66±0.18	1.55±0.24	1.79	0.07
LI (g)	0.48±0.10	0.36±0.09	2.58	0.02
LI (cm)	11±1.07	10.1±1.63	1.34	0.20
LI Rtl	0.28±0.05	0.24±0.05	1.94	0.07

Data is presented as mean ± standard deviation. p-value was set at $p<0.05$. ab = within row means with different letters significantly different at $p< 0.05$; DH_20-Distilled water; NM-gavaged with 10ml/kg of nutritive milk; SI = small intestine; LI = large intestine; rTL = weight of organ masses expressed relative to tibial length (g/cm).

Table S6: The effect of neonatal oral administration of zingerone on the lengths, absolute and relative weights of visceral organs in suckling male pups.

Organ	DH20	NM	t-value	p-value
Heart (g)	0.33±0.052	0.32±0.05	0.40	0.69
Heart rTL	0.20±0.034	0.20±0.01	0.23	0.82
Liver (g)	2.14±0.41	1.93±0.40	1.00	0.33
Liver rTL	1.29±0.184	1.18±0.18	1.22	0.25
Kidney (g)	0.59±0.09	0.55±0.08	0.86	0.41
Kidneys rTL	0.36±0.034	0.35±0.03	0.67	0.51
Stomach(g)	0.46±0.07	0.43±0.08	0.88	0.39
Stomach rTL	0.28±0.04	0.27±0.04	0.55	0.59
Caecum (g)	0.33±0.04	0.30±0.04	0.93	0.06
Caecum rTL	0.19±0.03	0.18±0.03	1.15	0.27
Pancreas (g)	0.23±0.04	0.24±0.05	0.31	0.76
Pancreas rTL	0.14±0.03	0.15±0.03	0.50	0.63
SI (g)	2.70±0.32	2.44±0.49	1.19	0.25
SI(cm)	77.86±7.01	74.29±6.98	0.96	0.36
SI r TL	1.64±0.10	1.53±0.24	1.15	0.27
LI (g)	0.42±0.05	0.40±0.13	0.31	0.76
LI (cm)	10.71±1.66	10.31±1.60	0.48	0.64
LI rTL	0.25±0.02	0.25±0.07	0.17	0.86

Data is presented as mean ± standard deviation. p-value was set at $p<0.05$. ab = within row means with different letters significantly different at $p < 0.05$; DH20-Distilled water; NM-gavaged with 10ml/kg of nutritive milk; SI = small intestine; LI = large intestine; rTL = weight of organ masses expressed relative to tibial length (g/cm).