

Fig. S1. Top thirty significantly enriched gene oncology (GO) categories ($P < 0.05$) of DEGs between groups. FO, fresh canola oil (unheated oil); DO, deep-fried canola oil; DO-RS, deep-fried canola oil plus resistant starch.



Fig. S2. Effect of RS on hepatic expression of lipid metabolism related proteins in rats fed with deep-fried oil. Protein expression of *Insig-1* and plasmalemma vesicle-associated protein was measured by Western blotting. GAPDH and Actin were internal controls.

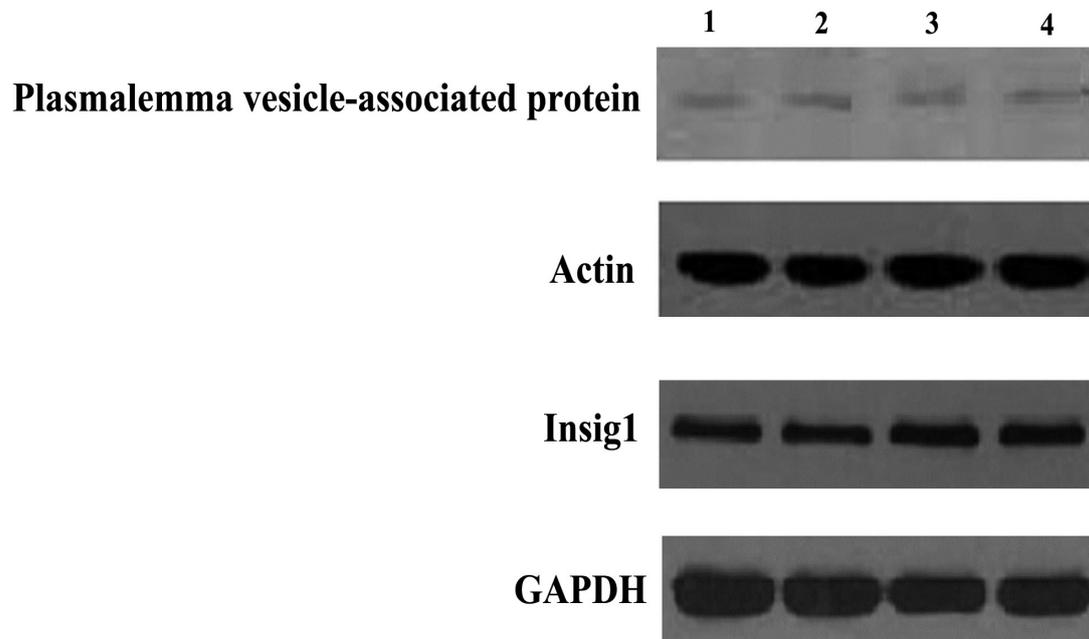


Table S1. Main ingredients of the basal diet.

Ingredient	%
Casein	20.0
Lard	3.0
Soybean oil	2.0
Vitamin mixture ^a	1.0
Mineral mixture ^b	4.0
Choline chloride	0.2
Cellulose	4.0
Corn starch	65.8
Total	100.0

^aAIN-93: vitamin mixture; ^bAIN-93: mineral mixture.

Table S2. Summary of read numbers aligned onto the rat reference genome. NC: normal control; FO: fresh canola oil (unheated oil); DO: deep-fried oil; DO-RS: deep-fried oil plus resistant starch.

Statistical content	NC		FO		DO		DO-RS	
	Number	%	Number	%	Number	%	Number	%
Total reads	69983566	100	40774190	100	44834630	100	46929320	100%
Mapped reads	62820515	89.8	36010057	88.3	39834478	88.8	41518807	88.5
Uniquely mapped reads	59945145	85.8	34211316	83.9	37808432	84.3	39431014	84.0
Multiple mapped reads	2875370	4.1	1798741	4.4	2026046	4.5	2087793	4.4
Non splice reads	30302215	43.3	17629594	43.2	19431527	43.3	20233328	43.1
Splice reads	29642930	42.4	16581722	40.7	18376905	41.0	19197686	40.9

NC: normal control; FO: fresh canola oil (unheated oil); DO: deep-fried oil; DO-RS: deep-fried oil plus resistant starch.

Table S3. Adipose tissue weights of rats.

Groups	Body weight (g)	Epididymis fat pad weight (g/100g body weight)	Perirenal fat weigh (g/100g body weight)
NC	429.1±26.3	1.32±0.12	1.99±0.17
FO	442.3±31.9	1.51±0.22	2.14±0.47
DO	425.4±18.4	1.46±0.15	1.93±0.45
DO-RS	455.0±18.7	1.53±0.18	2.26±0.47

NC, normal control; FO, fresh canola oil (unheated oil); DO, deep-fried oil; DO-RS, deep-fried oil and resistant starch.