

Supplementary Data

Table S1 – Composition of 45% lipid-rich diet

Composition	
Nutritional additives	Per kg
Vitamin A	7600 IU
Vitamin D3	1900 IU
Iron	49.5 mg
Manganese	13 mg
Zinc	41.2 mg
Copper	7.4 mg
Iodine	0.26 mg
Seline	0.19 mg
Molybdenum	0.19 mg
Preservatives	
Potassium citrate	
Colorants	
Red Ponceau 4R	100 mg
Analytical constituents	%
Crude protein	21.00
Crude oils and fats	23.00
Crude fibres	4.50
Crude ash	3.50

Table S2– Composition of 60% lipid-rich diet

Composition	%
Protein	23.1
Arginine	0.90
Histidine	0.67
Isoleucine	1.24
Leucine	2.24
Lysine	1.88
Phenylalanine	1.24
Tyrosine	1.31
Threonine	1.0
Valine	1.47
Aspartic Acid	1.66
Glutamic Acid	5.28
Proline	3.04
Serine	1.43
Fat	34.9
Cholesterol	301 ppm
Linoleic Acid	4.70
Linolenic Acid	0.39
Arachidonic Acid	0.06
Omega-3 Fatty Acids	0.39

Total Saturated Fatty A	13.68
Total Monounsaturated Fatty Acids	14.00
Polyunsaturated Fatty Acids	5.15
Fiber (max)	6.5
Carbohydrates	25.9
Energy	5.10 kcal/g
From:	%
Protein	18.1
Fat	61.6
Minerals	
Calcium	0.79
Phosphorus	0.59
Potassium	0.77
Magnesium	0.07
Sodium	0.15
Chloride	0.25
Fluorine	1.2 ppm
Iron	65 ppm
Zinc	46 ppm
Manganese	76 ppm
Vitamins	
Vitamin A	5.2 IU/g
Vitamin D-3 (added)	1.3 IU/g
Vitamin E	67.2 IU/kg
Vitamin K	0.65 ppm
Thiamin	6.2 ppm
Riboflavin	8.7 ppm
Niacin	39 ppm
Pantothenic Acid	21 ppm

Table S3 – Composition of Purina 5008

Composition	%
Protein	23.5
Arginine	1.44
Histidine	0.58
Isoleucine	1.20
Leucine	1.87
Lysine	1.40
Phenylalanine	1.08
Tyrosine	0.66
Threonine	0.90
Valine	1.19

Aspartic Acid	2.60
Glutamic Acid	4.77
Proline	1.63
Serine	1.20
Fat	7.5
Cholesterol	208 ppm
Linoleic Acid	1.37
Linolenic Acid	0.09
Arachidonic Acid	0.01
Omega-3 Fatty Acids	0.29
Total Saturated Fatty A	2.51
Total Monounsaturated Fatty Acids	2.32
Fiber (Crude)	3.8
Energy	
Gross Energy	4.15 kcal/g
Physiological Fuel Value	3.50 kcal/g
Metabolizable energy	3.31 kcal/g
Gross Energy	4.15 kcal/g
Minerals	
Calcium	1.0
Phosphorus	0.65
Potassium	1.10
Magnesium	0.20
Sodium	0.28
Chlorine	0.48
Fluorine	19 ppm
Iron	230 ppm
Zinc	73 ppm
Manganese	71 ppm
Vitamins	
Vitamin A	15 IU/g
Vitamin D (added)	3.3 IU/g
Vitamin E	55 IU/kg
Vitamin K	3.2 ppm
Thiamin	16 ppm
Riboflavin	5.0 ppm
Niacin	109 ppm
Pantothenic Acid	15 ppm

Table S4 – Composition of Standard diet

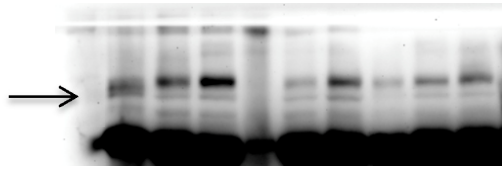
Composition	%
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Proximate Analysis	
Moisture	10.00
Crude Oil	4.16
Crude Protein	21.86
Crude Fibre	4.33
Ash	7.89
Nitrogen Free Extract	51.24
Amino Acids	
Arginine	1.39
Histidine	0.54
Isoleucine	0.96
Leucine	1.81
Lysine	1.30
Phenylalanine	1.20
Tyrosine	0.85
Alanine	0.27
Aspartic Acid	1.34
Glutamic Acid	4.30
Proline	1.53
Serine	0.98
Fatty acids	
Lauric	0.05
Myristic	0.17
Palmitic	0.37
Stearic	0.10
Myristoleic	0.01
Palmitoleic	0.09
Oleic	1.00
Linoleic	1.25
Linolenic	0.17
Arachidonic	0.12
Fiber and Carbohydrates	
Total Dietary Fibre	15.70
Pectin	1.47
Hemicellulose	9.33
Cellulose	4.04
Lignin	1.50
Starch	33.61
Sugar	5.84
Energy	
Gross Energy	15.10 MJ/kg
Digestible Energy	12.27 MJ/kg
Metabolizable energy	11.24 MJ/kg
Atwater Fuel Energy (AFE)	13.79 MJ/kg
AFE from Oil	11.35
AFE from Protein	26.51
AFE from Carbohydrate	62.13
Minerals	
Calcium	1.24
Phosphorus	0.80
Potassium	0.78
Magnesium	0.28
Sodium	0.24
Chloride	0.36
Fluorine	8.53 mg/kg
Iron	161.01 mg/kg

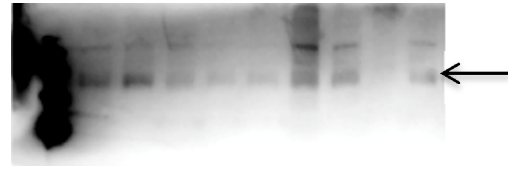
Zinc	46.90 mg/kg
Manganese	101.71 mg/kg
Vitamins	
Vitamin A	42522.66 IU/kg
Vitamin D-3 (added)	4369.41 IU/kg
Vitamin E	171.70 IU/kg
Vitamin K	40.72 mg/kg
Thiamin	49.77 mg/kg
Riboflavin	37.74 mg/kg

A)

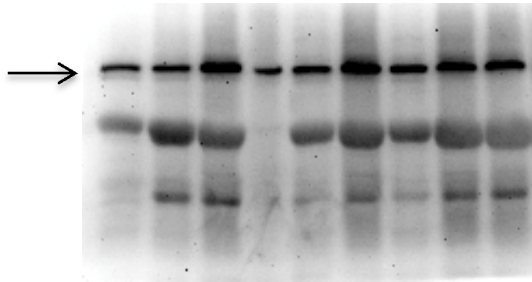
Insulin Receptor total



IR_p



Clanexin for IR total membrane

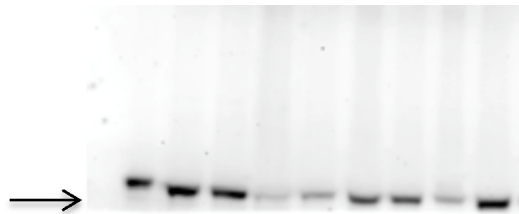


Clanexin for IR_p membrane

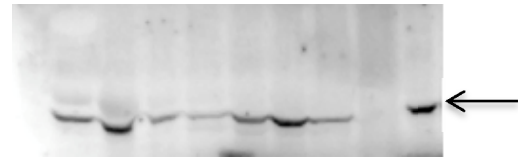


B)

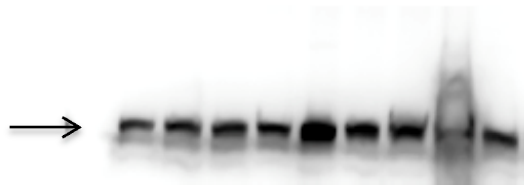
AKT total



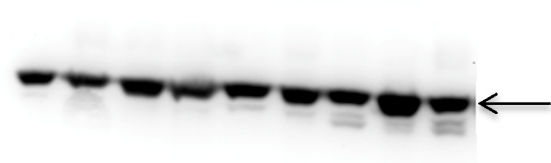
AKT_p



Clanexin for AKT total membrane

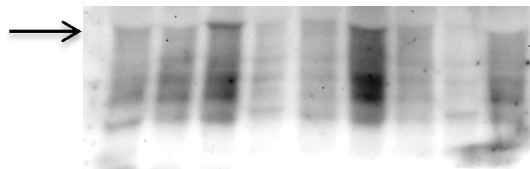


Clanexin for AKT_p membrane



C)

Glut4 total



Clanexin for Glut4 membrane

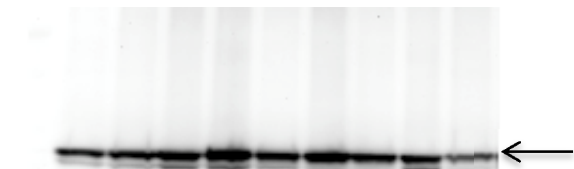


Figure S1- Membranes of the Western blots performed to study the alterations in the expression of proteins involved in insulin signaling in the adipose tissue, in animal models of obesity and type 2 diabetes. A) Western blot membranes for total insulin receptor (IR) protein (left panel) and its phosphorylated form (IR_p, right panel). Below shows

western blot membranes for the loading protein calnexin; B) shows western blot membranes protein kinase B, also known as AKT (left panel) and its phosphorylated form (AKT_p, right panel). Below shows western blot membranes for the loading protein calnexin; C) depicts western blot membranes for the expression of glut4 transporter and the respective loading protein calnexin. Black arrows point to the protein of interest.

