

Supplemental Table 4. 4 weeks on diet qPCR Ingenuity Pathway Analysis

1) Significant Gene List (5):

BDNF  
 FZD5  
 LEFTY2  
 LIF  
 TNFSF11/RANKL

2) Top Canonical Pathways

Ingenuity Canonical Pathways	B-H Adjusted p-value	Ratio	Molecules
Human Embryonic Stem Cell Pluripotency	1.44E-04	3/156	BDNF,FZD5,LEFTY2
Mouse Embryonic Stem Cell Pluripotency	4.07E-03	2/99	LIF,FZD5
Role of NANOG in Mammalian Embryonic Stem Cell Pluripotency	4.07E-03	2/114	LIF,FZD5
Role of Osteoblasts, Osteoclasts and Chondrocytes in Rheumatoid Arthritis	1.20E-02	2/238	TNFSF11,FZD5
Role of Macrophages, Fibroblasts and Endothelial Cells in Rheumatoid Arthritis	1.83E-02	2/332	TNFSF11,FZD5
Axonal Guidance Signaling	3.03E-02	2/469	BDNF,FZD5

3) Function Table

Category	Functions Annotation	B-H Adjusted p-value	Molecules	Number of Molecules
<b>4wk qPCR IPA Function Table</b>				
Cardiovascular System Development and Function	<b>development of cardiovascular system</b>	<b>4.06E-04</b>	<b>BDNF,FZD5,LEFTY2,LIF,TNFSF11</b>	<b>5</b>
	angiogenesis	1.19E-03	BDNF,FZD5,LIF,TNFSF11	4
	development of blood vessel	1.60E-03	BDNF,FZD5,LIF,TNFSF11	4
	proliferation of endothelial cells	1.86E-03	BDNF,FZD5,TNFSF11	3
	morphology of cardiovascular system	3.09E-03	FZD5,LEFTY2,LIF	3
Cell Death and Survival*	cell viability of tumor cell lines	3.36E-03	BDNF,LIF,TNFSF11	3
Cell Morphology*	size of connective tissue cells	4.66E-04	BDNF,LIF,TNFSF11	3
Cell Signaling	release of Ca <sup>2+</sup>	1.19E-03	BDNF,LIF,TNFSF11	3
Cell-mediated Immune Response	differentiation of T lymphocytes	2.03E-03	FZD5,LIF,TNFSF11	3
Cell-To-Cell Signaling and Interaction	stimulation of cells	1.86E-03	BDNF,LIF,TNFSF11	3
Cellular Development*	<b>maturation of cells</b>	<b>4.06E-04</b>	<b>BDNF,FZD5,LIF,TNFSF11</b>	<b>4</b>
	proliferation of embryonic	1.53E-03	BDNF,LIF,TNFSF11	3

	cells				
	proliferation of endothelial cells	1.86E-03	BDNF,FZD5,TNFSF11		3
	proliferation of muscle cells	2.03E-03	BDNF,LIF,TNFSF11		3
	differentiation of T lymphocytes	2.03E-03	FZD5,LIF,TNFSF11		3
	differentiation of tumor cell lines	2.03E-03	BDNF,LIF,TNFSF11		3
	differentiation of cells	4.29E-03	BDNF,FZD5,LIF,TNFSF11		4
Cellular Function and Maintenance*	<b>maintenance of cells</b>	<b>4.06E-04</b>	<b>BDNF,LIF,TNFSF11</b>		<b>3</b>
	differentiation of T lymphocytes	2.03E-03	FZD5,LIF,TNFSF11		3
Cellular Growth and Proliferation*	generation of cells	1.53E-03	BDNF,LIF,TNFSF11		3
	proliferation of embryonic cells	1.53E-03	BDNF,LIF,TNFSF11		3
	proliferation of endothelial cells	1.86E-03	BDNF,FZD5,TNFSF11		3
	stimulation of cells	1.86E-03	BDNF,LIF,TNFSF11		3
	proliferation of muscle cells	2.03E-03	BDNF,LIF,TNFSF11		3
	formation of cells	2.03E-03	BDNF,LIF,TNFSF11		3
Cellular Movement	chemotaxis of cells	2.47E-03	BDNF,LIF,TNFSF11		3
Connective Tissue Disorders	rheumatoid arthritis	3.47E-03	BDNF,FZD5,TNFSF11		3
Developmental Disorder	Growth Failure	3.00E-03	BDNF,LIF,TNFSF11		3
Digestive System Development and Function	morphology of digestive system	8.93E-04	BDNF,LEFTY2,LIF,TNFSF11		4
DNA Replication, Recombination, and Repair	synthesis of DNA	2.03E-03	BDNF,LIF,TNFSF11		3
Embryonic Development	proliferation of embryonic cells	1.53E-03	BDNF,LIF,TNFSF11		3
	development of body axis	3.00E-03	FZD5,LEFTY2,LIF		3
Gene Expression	transcription of RNA	3.83E-03	BDNF,FZD5,LIF,TNFSF11		4
Hematological System Development and Function	quantity of antigen presenting cells	1.58E-03	BDNF,LIF,TNFSF11		3
	differentiation of T lymphocytes	2.03E-03	FZD5,LIF,TNFSF11		3
Hematopoiesis	differentiation of T lymphocytes	2.03E-03	FZD5,LIF,TNFSF11		3
Immunological Disease	rheumatoid arthritis	3.47E-03	BDNF,FZD5,TNFSF11		3
Inflammatory Disease	rheumatoid arthritis	3.47E-03	BDNF,FZD5,TNFSF11		3
Lymphoid Tissue Structure and Development	differentiation of T lymphocytes	2.03E-03	FZD5,LIF,TNFSF11		3
	morphology of lymphatic system component	2.25E-03	LEFTY2,LIF,TNFSF11		3
Molecular Transport	release of Ca <sup>2+</sup>	1.19E-03	BDNF,LIF,TNFSF11		3
Organismal Development	development of blood vessel	1.60E-03	BDNF,FZD5,LIF,TNFSF11		4
	proliferation of endothelial cells	1.86E-03	BDNF,FZD5,TNFSF11		3
	development of body axis	3.00E-03	FZD5,LEFTY2,LIF		3
	size of body	5.13E-03	BDNF,LIF,TNFSF11		3

Organismal Injury and Abnormalities	Bleeding	2.03E-03	BDNF,FZD5,LIF	3
Organismal Survival	<b>organismal death</b>	<b>2.03E-03</b>	<b>BDNF,FZD5,LEFTY2,LIF,TNFSF11</b>	<b>5</b>
	survival of organism	3.00E-03	BDNF,FZD5,LIF	3
Skeletal and Muscular Disorders	rheumatoid arthritis	3.47E-03	BDNF,FZD5,TNFSF11	3
Skeletal and Muscular System Development and Function	proliferation of muscle cells	2.03E-03	BDNF,LIF,TNFSF11	3
	morphology of skeletal system	2.47E-03	LEFTY2,LIF,TNFSF11	3
Small Molecule Biochemistry	release of Ca <sup>2+</sup>	1.19E-03	BDNF,LIF,TNFSF11	3
Tissue Development	generation of cells	1.53E-03	BDNF,LIF,TNFSF11	3
	proliferation of endothelial cells	1.86E-03	BDNF,FZD5,TNFSF11	3
Tissue Morphology	quantity of antigen presenting cells	1.58E-03	BDNF,LIF,TNFSF11	3
Vitamin and Mineral Metabolism	release of Ca <sup>2+</sup>	1.19E-03	BDNF,LIF,TNFSF11	3

\*IPA Top Molecular and Cellular Functions