

Supplementary Figure 1: Mapped Pathways for Top 5% Expressed Genes in Synovial Fluid following Meniscal Tear.

	Pathways	p-value	Number of Genes in Synovial Fluid in the pathway	Total number of genes in the pathway
1	Oxidative phosphorylation	2.40E-16	31	105
2	Immune response_CCR3 signaling in eosinophils	1.46E-12	23	77
3	Cytoskeleton remodeling_Regulation of actin cytoskeleton by Rho GTPases	1.82E-10	12	23
4	LRRK2 in neurons in Parkinson's disease	2.48E-09	13	33
5	Cytoskeleton remodeling_Role of PKA in cytoskeleton reorganisation	3.77E-08	13	40
6	Cell adhesion_Role of tetraspanins in the integrin-mediated cell adhesion	1.31E-07	12	37
7	Immune response_MIF - the neuroendocrine-macrophage connector	2.42E-07	13	46
8	Immune response_Antigen presentation by MHC class II	4.90E-07	7	12
9	Development_Slit-Robo signaling	1.12E-06	10	30
10	Development_MAG-dependent inhibition of neurite outgrowth	1.18E-06	11	37
11	Immune response_MIF-induced cell adhesion, migration and angiogenesis	1.82E-06	12	46
12	Chemotaxis_Lipoxin inhibitory action on fMLP-induced neutrophil chemotaxis	1.82E-06	12	46
13	Development_PEDF signaling	3.75E-06	12	49
14	Immune response_MIF-mediated glucocorticoid regulation	6.53E-06	8	22
15	Apoptosis and survival_Inhibition of ROS-induced apoptosis by 17beta-estradiol	7.71E-06	11	44
16	Blood coagulation_GPCRs in platelet aggregation	9.15E-06	14	71
17	Immune response_HSP60 and HSP70/TLR signaling pathway	1.11E-05	12	54
18	Cytoskeleton remodeling_Cytoskeleton remodeling	1.12E-05	17	102
19	Immune response_IFN alpha/beta signaling pathway	1.37E-05	8	24
20	Regulation of CFTR activity (norm and CF)	2.40E-05	12	58
21	Development_GM-CSF signaling	2.86E-05	11	50
22	Signal transduction_Erk Interactions: Inhibition of Erk	3.20E-05	9	34
23	Immune response_Antiviral actions of Interferons	4.22E-05	11	52
24	Transport_Rab-9 regulation pathway	6.39E-05	5	10
25	LRRK2 and immune function in Parkinson's disease	6.80E-05	7	22
26	Development_TGF-beta-dependent induction of EMT via RhoA, PI3K and ILK.	7.37E-05	10	46
27	Immune response_Fc gamma R-mediated phagocytosis in macrophages	7.37E-05	10	46
28	Chemotaxis_Leukocyte chemotaxis	7.92E-05	13	75
29	Immune response_Role of integrins in NK cells cytotoxicity	8.31E-05	9	38
30	Airway smooth muscle contraction in asthma	8.67E-05	11	56
31	Apoptosis and survival_APRIL and BAFF signaling	1.03E-04	9	39
32	Cell adhesion_Integrin-mediated cell adhesion and migration	1.08E-04	10	48
33	Cell adhesion_Chemokines and adhesion	1.28E-04	15	100
34	Immune response_Immunological synapse formation	1.42E-04	11	59
35	Chemotaxis_Inhibitory action of lipoxins on IL-8- and Leukotriene B4-induced neutrophil migration	1.84E-04	10	51
36	Apoptosis and survival_Lymphotoxin-beta receptor signaling	1.90E-04	9	42
37	Development_IGF-1 receptor signaling	2.18E-04	10	52
38	Signal transduction_AKT signaling	2.30E-04	9	43
39	Apoptosis and survival_Anti-apoptotic TNFs/NF-kB/IAP pathway	2.84E-04	7	27
40	Translation_Regulation of translation initiation	2.84E-04	7	27
41	Ubiquinone metabolism	2.85E-04	12	74
42	Neurophysiological process_Receptor-mediated axon growth repulsion	3.30E-04	9	45
43	Cell adhesion_Histamine H1 receptor signaling in the interruption of cell barrier integrity	3.30E-04	9	45
44	Signal transduction_Calcium signaling	3.30E-04	9	45
45	Development_Role of IL-8 in angiogenesis	3.47E-04	11	65
46	Cytoskeleton remodeling_TGF, WNT and cytoskeletal remodeling	4.12E-04	15	111
47	Transcription_ChREBP regulation pathway	4.42E-04	6	21
48	Transcription_CREB pathway	4.65E-04	9	47
49	Inhibitory action of Lipoxins on neutrophil migration	4.76E-04	10	57
50	Immune response_Role of PKR in stress-induced antiviral cell response	4.76E-04	10	57

Supplemental Table 1: List of 340 Genes with previous association to Inflammatory and/or Rheumatoid or Osteoarthritis Pathways.

GENE SYMBOLS					
ACAN	CCR7	IL11RA	IL1RAPL1	IL5	MMP7
ADAMTS4	CCR8	IL12A	IL1RAPL2	IL5RA	MMP8
ADAMTS5	CCR9	IL12B	IL1RL1	IL6	MMP9
BMP1	CXCL1	IL12RB1	IL1RL2	IL6R	NFKB1
BMP10	CXCL10	IL12RB2	IL1RN	IL6ST	NFKB2
BMP15	CXCL11	IL13	IL2	IL7	NFKBIA
BMP2	CXCL12	IL13RA1	IL20	IL7R	NFKBIB
BMP2K	CXCL13	IL13RA2	IL20RA	IL7R	NFKBID
BMP2KL	CXCL14	IL15	IL20RB	IL8	NFKBIE
BMP3	CXCL16	IL15RA	IL21	IL8RB	NFKBIL1
BMP4	CXCL17	IL16	IL21R	IL8RBP	NFKBIL2
BMP5	CXCL2	IL17A	IL22	IL9	TIMP2
BMP6	CXCL3	IL17B	IL22RA1	IL9R	TNF
BMP7	CXCL5	IL17C	IL22RA2	ILDR1	
CCL21	CXCL6	IL17D	IL23A	ILDR2	
CCL22	CXCL9	IL17F	IL23R	ILF2	
CCL23	CXCR1	IL17RA	IL24	ILF3	
CCL24	CXCR3	IL17RB	IL25	MMP1	
CCL25	CXCR4	IL17RC	IL26	MMP10	
CCL26	CXCR5	IL17RD	IL27	MMP11	
CCL27	CXCR6	IL17RE	IL27RA	MMP12	
CCL28	CXCR7	IL17REL	IL28A	MMP13	
CCL3	CCL1	IL18	IL28B	MMP14	
CCL3L1	CCL11	IL18BP	IL28RA	MMP15	
CCL3L3	CCL13	IL18R1	IL29	MMP16	
CCL4	CCL14	IL18RAP	IL2RA	MMP17	
CCL4L1	CCL15	IL19	IL2RB	MMP19	
CCL4L2	CCL16	IL1A	IL2RG	MMP2	
CCL5	CCL17	IL1B	IL3	MMP20	
CCL7	CCL18	IL1F10	IL31	MMP21	
CCL8	CCL19	IL1F5	IL31RA	MMP23A	
CCR1	CCL2	IL1F6	IL32	MMP23B	
CCR10	CCL20	IL1F7	IL33	MMP24	
CCR2	IKZF5	IL1F8	IL34	MMP25	
CCR3	IL10	IL1F9	IL3RA	MMP26	
CCR4	IL10RA	IL1R1	IL4	MMP27	
CCR5	IL10RB	IL1R2	IL4I1	MMP28	
CCR6	IL11	IL1RAP	IL4R	MMP3	