

Supplementary material:

Table 1: Characteristics of the analyzed microarray data sets

Author	Accession no.	Platform	Sample Information
Ivashkiv LB et.al 2008 Unpublished	GSE10500	GPL8300 [HG_U95Av2]	Synovial macrophages Samples 8 4-RA donor, 4-ND
Ungethuem U et.al 2004 Unpublished	GSE1919	GPL91 [HG_U95A]	Synovial fibroblasts Samples-15 5-RA, 5-OA, 5-ND
Huber R et.al 2008	GSE12021	GPL96 [HG_U133A] GPL97 [HG_U133B]	Synovial membrane Samples-15 5-RA, 5-OA, 5-ND

Table 2: Summary of parameters applied on the microarray data sets for the meta-analysis

Dataset	Entities Selected	Statistical Test	Fold Change cut off	p-Value cut off
<i>GSE12021</i>	586/22283	ANOVA	≥ 2.0	≤ 0.05
<i>GSE1919</i>	941/1318	ANOVA	≥ 2.0	≤ 0.05
<i>GSE10500</i>	723/940	t-Test	≥ 2.0	≤ 0.05

Table 3: Differentially expressed genes observed in RA datasets, which have already been reported in literature

Enterez Gene Name	Gene Symbol	Function	Fold Change
Interleukin 1 receptor accessory protein	IL-1RAP	Cytokine	3.225
Interleukin 8	IL-8	Chemokine	4.851
Tumor Necrosis Factor	TNF	Cytokine	5.231
Matrix metalloproteinase 1	MMP-1	Enzyme	4.379
Nuclear factor of activated T cells	NFAT	Transcription factor	2.333
JUN oncogene	cJUN	Transcription regulator	3.343
T-cell receptor alpha locus	TRA@	Receptor	2.391
Activating Transcription factor	ATF4	Transcription factor	3.512
Chemokine (C-C motif) ligand7	CCL7	Chemokine	9.241
V-maf musculoaponeurotic fibrosarcoma oncogene homolog F	MAFF	Transcription factor & regulator	10.069
GTP binding protein overexpressed in skeletal muscle	GEM	Signal Transduction	17.020
Nuclear receptor subfamily 4, group A, member2	NR4A2	Signal Transduction	13.046
Interleukin10 receptor, alpha	IL-10RA	Anti-inflammatory cytokine receptor	-2.713
Interleukin10 receptor, beta	IL-10RB	Anti-inflammatory cytokine receptor	-2.171
Vascular endothelial growth factor A	VEGFA	Angiogenesis	3.860
Tumor necrosis factor superfamily member 14	TNFSF14	cytokine	7.698
Interleukin 15	IL 15	cytokine	3.174

Table 4: Differentially regulated pro-inflammatory gene signatures observed in RA and OA datasets

Enterez Gene name	Gene Symbol	Function	Fold Change (RA)	Fold Change (OA)
Interleukin1 receptor antagonist	IL1RN	Cytokine receptor	4.230	-1.132
Tumor necrosis factor superfamily member11	TNF-SF11	Cytokine	4.380	1.309
Interleukin 15	IL15	Cytokine	3.223	1.793
Interleukin 8	IL8	Chemokine	1.248	-2.554
(C-X-C motif)ligand 12	CXCL12	Chemokine	3.153	4.809
Chemokine (C-C motif) ligand5	CCL5	Chemokine	48.605	8.177
Fc fragment of IgG,high affinity Ia receptor	FCGR1A	Immunoregulatory gene	6.247	3.165
Fc fragment of IgG, low affinity IIIb	FCGR3A	Immunoregulatory gene	4.019	2.956
Transcription Factor 7	TCF-7	Transcription factor	42.261	1.045
Mitogen activated protein kinase 1	MAPK1	Kinase	2.578	1.820
Matrix Metalloprotenaise 3	MMP3	Enzyme	43.766	31.002
Matrix Metalloprotenaise 1	MMP1	Enzyme	62.092	23.224
Phospholipase C gamma 2	PLCG2	Enzyme	2.143	1.464
Phospholipase C beta 1	PLCB1	Enzyme	-2.613	2.455
Protein Kinase C beta	PRKCB	Kinase	7.294	-1.003
Ras related C3 botulin toxin substrate 2	RAC2	Enzyme	14.468	5.668
Vascular endothelial growth factor	VEGFC	Angiogenic growth factor	3.251	5.532
T-cell receptor alpha locus	TCR α	Receptor	23.112	2.644
Chemokine (C-C motif) receptor5	CCR5	Chemokine receptor	7.396	1.139