

Supplementary Table 1: Patient Baseline Clinical Parameters

Demographics	RA	Arthralgia	HC
N=Number	49	10	20
Age; mean, (range)	58 (27-83)	49 (27-68)	38(27-49)
Female/Male	36/13	8/2	13/7
DAS28, mean \pm SD	4.42 \pm 1.35	2.36 \pm 1.03	N/A
VAS, mean \pm SD	62.93 \pm 27.67	55 \pm 29.5	N/A
CRP, mean \pm SD	23.55 \pm 43.27	4.8 \pm 3.8	N/A
ACPA pos/	25/24	10/10	N/A

DAS28, Disease activity score; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; VAS; Visual Analogue scale of patient pain. ACPA-anti-citrullinated protein antibody.

Supplementary Table 2: Patient Clinical Parameters Pre- and Post-MTX

Demographics	Pre-MTX N=18	Post-MTX N=18
N=number	18	18
Age	54 (27-75)	54(27-75)
Female/Male	15/3	15/3
DAS28, mean \pm SD	4.43 \pm 1.37	3.78 \pm 1.34
VAS, mean \pm SD	58.46 \pm 32.19	53.11 \pm 29.12
CRP, mean \pm SD	26.97 \pm 56.07	7.5 \pm 10.84
ACPA pos/neg	10/8	10/8
Good response (number)	N/A	6
Moderate response (number)	N/A	5
No response (number)	N/A	7

DAS28, Disease activity score; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; VAS, Visual Analogue scale of patient pain. ACPA-anti-citrullinated protein antibody

Supplementary Table 3. The Multiplex Circulating miRNA Immunology Fixed Panel

miRbase 20 name	miRNA sequence
hsa-let-7b-5p	ugagguaguagguugugugguu
hsa-let-7d-5p	agagguaguagguugcauaguu
hsa-let-7e-5p	ugagguaggagguuguauaguu
hsa-let-7g-5p	ugagguaguaguuuuguacaguu
hsa-let-7i-5p	ugagguaguaguuuugucuguu
hsa-miR-10a-5p	uaccugugauaccgaauuugug
hsa-miR-122-5p	uggagugugacaauugguuuug
hsa-miR-1246	aauggauuuuuggagcagg
hsa-miR-125a-5p	uccugagaccuuuaaccuguga
hsa-miR-126-3p	ucguaccgugaguaauaauugcg
hsa-miR-129-5p	cuuuuugcggucugggcuugc
hsa-miR-130a-3p	cagugcaauguuaaaagggcgau
hsa-miR-132-3p	uaacagucuacagccauggucg
hsa-miR-140-3p	uaccacaggguaagaaccacgg
hsa-miR-142-3p	cauaaaguagaaagcacuacu
hsa-miR-145-5p	guccaguuuuccaggaaucccu
hsa-miR-146a-5p	ugagaacugaaauccauggguu
hsa-miR-150-5p	ucuccaaccuuguaccagug
hsa-miR-151a-5p	ucgaggagcucacagucuagu
hsa-miR-154-3p	aaucauacacgguugaccuauu
hsa-miR-155-5p	uuauugcuaaucgugauaggggu
hsa-miR-15a-5p	uagcagcacauaauugguuugug
hsa-miR-15b-5p	uagcagcacaucaugguuuaca
hsa-miR-16-5p	uagcagcacguaaauauuggcg
hsa-miR-16-2-3p	ccaauuuacugugcugcuuuu
hsa-miR-17-5p	caaagugcuuacagugcagguag
hsa-miR-181a-5p	aacauucaacgcugucggugagu
hsa-miR-181b-5p	aacauucauugcugucggugggu
hsa-miR-185-5p	uggagagaaaggcaguuccuga
hsa-miR-192-5p	cugaccuauugaauugacagcc
hsa-miR-196a-5p	uagguaguuucauguuugggg
hsa-miR-200a-3p	uaacacugucugguaacgaugu
hsa-miR-203a	gugaaauguuuaggaccacuag
hsa-miR-205-5p	uccuucuuuccaccggagucug
hsa-miR-20a-5p	uaaagugcuuauagugcagguag
hsa-miR-20b-5p	caaagugcucauagugcagguag
hsa-miR-21-5p	uagcuuaucauagugauguuga
hsa-miR-210-3p	cugugcgugugacagcggcuga
hsa-miR-22-3p	aagcugccaguugaagaacugu
hsa-miR-221-3p	agcuacauugucugcuggguuc
hsa-miR-223-3p	ugucaguuuugucaauacceca
hsa-miR-23a-3p	aucacauugccagggaauucc
hsa-miR-24-3p	uggcucaguucagcaggaacag
hsa-miR-26a-5p	uucaaguaauccaggauaggcu

hsa-miR-29a-3p	uagcaccaucugaaaucggguua
hsa-miR-29b-3p	uagcaccuuugaaaucaguguu
hsa-miR-29c-3p	uagcaccuuugaaaucggguua
hsa-miR-30a-5p	ugaccgauuucuccugguguuc
hsa-miR-30b-5p	uguaaacauccuacacucagcu
hsa-miR-320a	aaaagcuggguugagagggcga
hsa-miR-320d	aaaagcuggguugagagga
hsa-miR-339-5p	ucccuguccuccaggagcucacg
hsa-miR-33a-5p	gugcauuguaguugcauugca
hsa-miR-342-3p	ucucacacagaaaucgcaccggu
hsa-miR-34a-5p	uggcagugucuuaugcugguugu
hsa-miR-375	uuuguucguucggcucgcguga
hsa-miR-376b-3p	aucuagaggaaaauccauguu
hsa-miR-422a	acuggacuuaaggucagaaggc
hsa-miR-429	uaauacugucugguaaaaccgu
hsa-miR-431-3p	caggucgucuugcaggguucu
hsa-miR-451a	aaaccguuaccuuacugaguu
hsa-miR-486-5p	uccuguacugagcugccccgag
hsa-miR-494-3p	ugaaacauacacgggaaaccuc
hsa-miR-523-5p	cucuagagggaagcguuucug
hsa-mir-744-5p	ugcggggcuagggcuaacagca
hsa-miR-885-5p	uccauuacacuaccugccucu
hsa-miR-92a-3p	uauugcacuuguccggccugu
hsa-mir-93-5p	caaagugcuguucgucagguag
x-control	x-control
blank	none