

Supplementary Methods 1

Bulk RNA Seq Analysis

CD4 and CD8 cells from both the bone and soft tissue were flow sorted and transcripts sequenced on a NovoSeq using an Illumina TruSeq stranded Total RNA kit. Reads were aligned to hg38 using HISAT2 (Kim D, Langmead B and Salzberg SL. HISAT: a fast-spliced aligner with low memory requirements. *Nature Methods* 2015) and counts generated using Feature Counts (Liao Y, Smyth GK, Shi W. featureCounts: an efficient general purpose program for assigning sequence reads to genomic features. *Bioinformatics*. 2014 Apr 1;30(7):923-30.), both accessed through the Galaxy platform (Afgan E et al. 2016 The Galaxy platform for accessible, reproducible and collaborative biomedical analyses: 2016 update. *Nucleic Acids Res.* 44, W3–W10) All results normalized with GAPDH housekeeping gene.

Supplementary Table 1 Antibodies used

List of antibodies used for flow cytometry (FC), activation assays (AA), bead separation (BS) and immunohistochemistry (IHC)

Target	Colour	Clone	Manufacturer	Application
CD3	n/a	OKT3	Invitrogen	AA
CD3/CD28	n/a	n/a	Gibco	AA

CD3	n/a	UCHT1	BD Biosciences	IHC
CD4	n/a	M-T466	Miltenyi Biotec	BS
CD8	n/a	REA734	Miltenyi Biotec	BS
CD3	BUV395	UCHT1	BD Biosciences	FC
CD4	APC	n/a	BD Biosciences	FC
CD8	APC Cy7	SK1	BD Biosciences	FC
CD45	RF710	HI30	Tonbo Biosciences	FC
IL-10	PE	JES3-19F1	Biolegend	FC
TGF β	FITC	n/a	Miltenyi Biotec	FC
IL17A	PE	eBio64DEC17	ThermoFisher	FC
TNF α	PE-CF594	MAB11	BD Biosciences	FC
CD49b	PE	P1E6-C5	Biolegend	FC
LAG-3 (CD223)	AF488	11C3C65	Biolegend	FC
CD25	APC	BC96	Tonbo Biosciences	FC
FOXP3	PE	236A/E7	Biolegend	FC

Supplementary Table 2

Complete list of TaqMan Assays used for analysis of gene expression.

Gene Symbol	Gene Name	Assay ID
AHR	aryl hydrocarbon receptor	HS00169233_m1
BMP2	bone morphogenetic protein 2	HS00154192_m1
CCR10	C-C motif chemokine receptor 10	HS00706455_s1

CCR6	C-C motif chemokine receptor 6	HS00171121_m1
CLEC7A	C-type lectin domain family 7 member A / dectin-1	Hs01902549_s1
CXCL10	C-X-C motif chemokine ligand 10	HS01124251_g1
CXCL11	C-X-C motif chemokine ligand 11	HS04187682_g1
CXCL12	C-X-C motif chemokine ligand 12	HS00171022_m1
CXCR3	C-X-C motif chemokine receptor 3	HS00171041_m1
KLF2	Krupple like factor 2	Hs00360439_g1
NR4A1	Nuclear Receptor Subfamily 4 Group A Member 1	Hs00374226_m1
T-Bet	T-bet	HS00203436_m1
FGF7	Fibroblast growth factor 7	Hs00940253_m1
FGF9	Fibroblast growth factor 9	Hs00181829_m1
FOXP3	Forkhead Box P3	Hs1085834_m1
HPRT1	hypoxanthine phosphoribosyl transferase 1	HS99999909_m1
IFNG	interferon gamma	HS00989291_m1
IL6	Interleukin 6	Hs00174131_m1
IL10	interleukin 10	HS00961622_m1
IL17A	interleukin 17A	HS00174383_m1
IL17F	interleukin 17F	HS00369400_m1
IL22	interleukin 22	HS01574152_g1
IL23R	interleukin 23 receptor	HS00332759_m1
IL36R	IL-36 receptor	Hs00543916_m1
JAK1	Janus kinase 1	HS01026983_m1
JAK2	Janus kinase 2	HS01078136_m1
JAK3	Janus kinase 3	HS00169663_m1
RORA	RAR related orphan receptor A	Hs00536545_m1
RORC	RAR related orphan receptor C	HS01076122_m1
SOCS1	suppressor of cytokine signalling 1	HS00705164_s1

SOCS2	suppressor of cytokine signalling 2	HS00919620_m1
SOCS5	suppressor of cytokine signalling 5	HS00367107_m1
STAT1	signal transducer and activator of transcription 1	HS01013996_m1
STAT2	signal transducer and activator of transcription 2	HS01013123_m1
STAT3	signal transducer and activator of transcription 3	HS00374280_m1
STAT4	signal transducer and activator of transcription 4	HS01028017_m1
STAT5A	signal transducer and activator of transcription 5A	HS00234181_m1
STAT5B	signal transducer and activator of transcription 5B	HS00273500_m1
STAT6	signal transducer and activator of transcription 6	HS00598625_m1
TGFB1	transforming growth factor beta 1	HS00998133_m1
TLR1	Toll like receptor 1	Hs00413978_m1
TLR2	Toll like receptor 2	Hs02621280_s1
TNF	tumour necrosis factor	HS99999043_m1
Tyk2	Tyrosine kinase 2	Hs01105947_g1
VEGFA	vascular endothelial growth factor A	HS00900058_m1

Supplementary Table 3

Complete patient cohort

Patient I.D	Gender	Age	Application
Rc151	F	66	Heat Map
Rc152	F	24	Heat Map
Rc153	F	68	Heat Map

Rc154	M	78	Heat Map
Rc160	F	56	Heat Map
Rc183	M	69	Heat Map
Rc184	M	47	Heat Map
Rc198	M	32	Heat Map
Rc200	F	35	Heat Map
Rc202	F	34	Heat Map
Rc210	M	71	Heat Map
Rc211	F	80	Heat Map
Rc232	F	68	Heat Map
Rc243	M	45	Heat Map
Rc244	F	43	Heat Map
Rc250	F	67	Heat Map
RC285	M	65	ELISA
RC286	M	76	ELISA
RC291	M	53	ELISA
RC292	F	15	ELISA/ RT-PCR
RC293	F	13	ELISA/ RT-PCR
RC295	F	29	ELISA
RC296	M	55	ELISA/ RT-PCR
RC297	F	66	ELISA/ RT-PCR
RC299	F	19	ELISA/ RT-PCR
RC302	M	14	ELISA/ RT-PCR
RC303	M	83	ELISA/ RT-PCR
RC161	M	24	RNA-Seq
RC163	M	21	RNA-Seq

RC193	F	53	RNA-Seq
RC195	F	17	RNA-Seq
RC304	F	15	Flow Cytometry
RC305	F	77	Flow Cytometry
RC306	F	15	Flow Cytometry
RC307	F	47	Flow Cytometry
Rc456	M	15	Flow Cytometry
Rc457	M	82	Flow Cytometry
Rc461	F	70	Flow Cytometry
Rc462	F	57	Flow Cytometry
Rc472	M	74	Flow Cytometry
Rc473	M	82	Flow Cytometry
Rc474	M	81	Flow Cytometry
Rc480	M	59	Flow Cytometry
Rc481	F	53	Flow Cytometry
Rc499	F	88	Flow Cytometry
Rc500	M	65	Flow Cytometry
Rc502	M	75	Flow Cytometry
Rc505	M	77	Flow Cytometry
Rc506	M	76	Flow Cytometry
Rc512	F	38	Flow Cytometry
HC371	M	40	Viability Testing
HC372	M	26	Viability Testing
HC373	F	32	Viability Testing

Supplementary figures:

Figure 1S: A-Graphical representation of the studied anatomical area including enthesal soft tissue (EST) and peri-enthesal bone (PEB). B- H&E staining of tissue showing enthesal soft tissue (EST) and peri-enthesal bone (PEB).

