Table S1 a: Antibodies used for immunohistochemistry and immunofluorescence.

Antigen	Manufacturer	Clone[a]	Iso	Dil	Amplification/ detection[b]
CD11c	BD Pharmingen	B-ly6	IgG1	1:100	Goat anti-mouse IgG1-A568/A-488
BDCA-1	Miltenyi Biotec	AD5-8E7	IgG2a	1:100	Goat anti-mouse IgG2a-A488/A-568
BDCA-3-PE	Miltenyi Biotec	AD5-14H12	IgG1	1:20	Goat anti-mouse IgG1-A568
INOS-FITC	BD Biosciences	6	IgG2a	1:50	Goat anti-FITC-A488
INOS	Santa Cruz	N-20	Affinity purified rabbit	1: 20	Chicken anti-rabbit A-594
TNF-α-FITC	BD Biosciences	6401.1111	IgG1	1:10	Goat anti-FITC-A488
CD14-A488	BD Pharmingen	M5E2	IgG2a	1:100	Goat anti-mouse IgG2a-A488
CD14-FITC	BD Biosciences	M phi P9	IgG2b	1:20	Goat anti-FITC-A488
DC-SIGN/CD209	BD Pharmingen	DCN46	IgG2b	1:50	Goat anti-mouse IgG2b-A488
DC-LAMP/ CD208-PE	Immunotech	104.G4	IgG1	1:50	Goat anti-mouse IgG1-A568
CD163-FITC	Acris	5C6-FAT	IgG1	1:100	Goat anti-FITC-A488

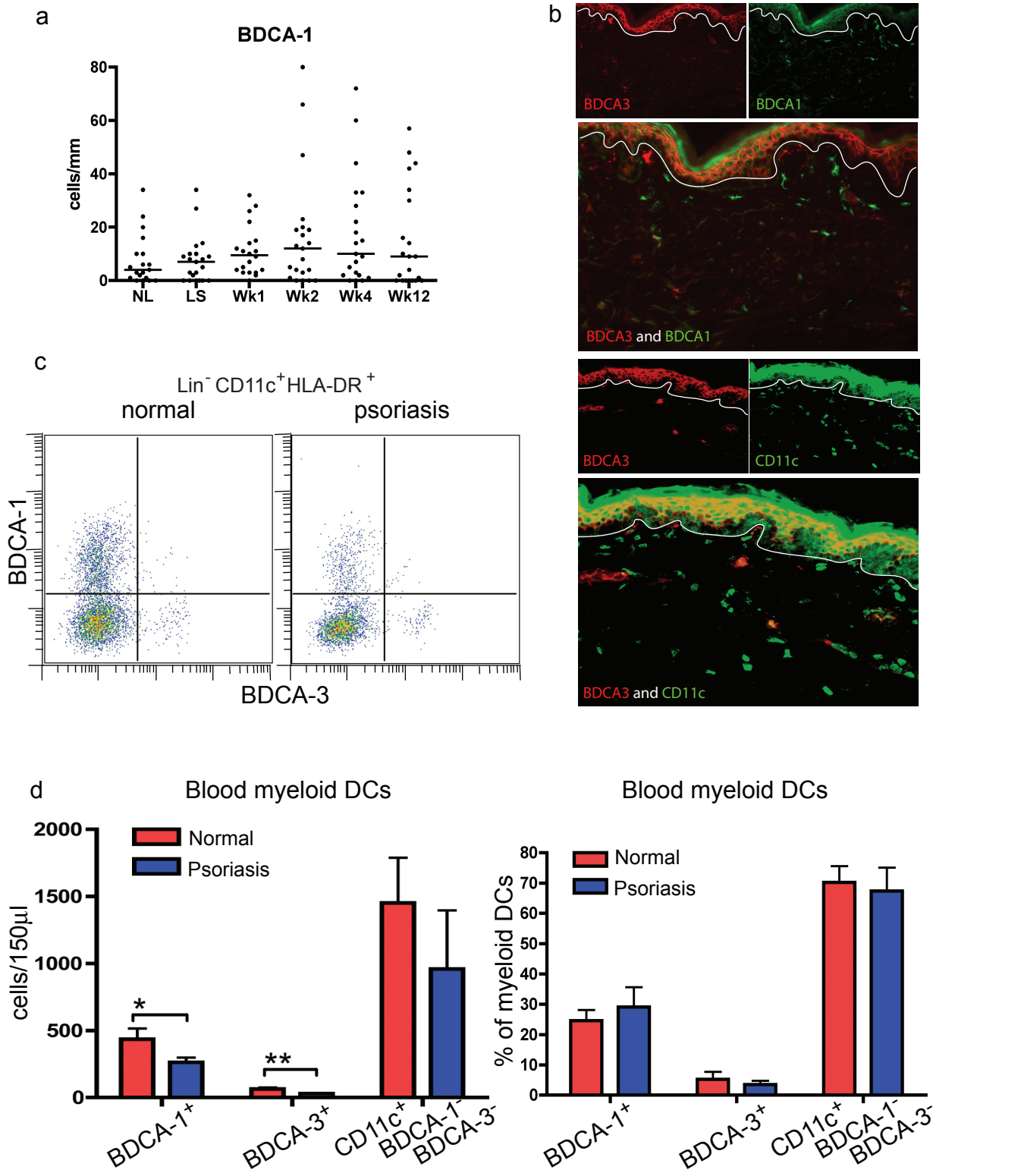
[a]All antibodies are murine monoclonals unless stated

[b]All amplification/ detection antibodies are from Invitrogen /Molecular Probes unless stated

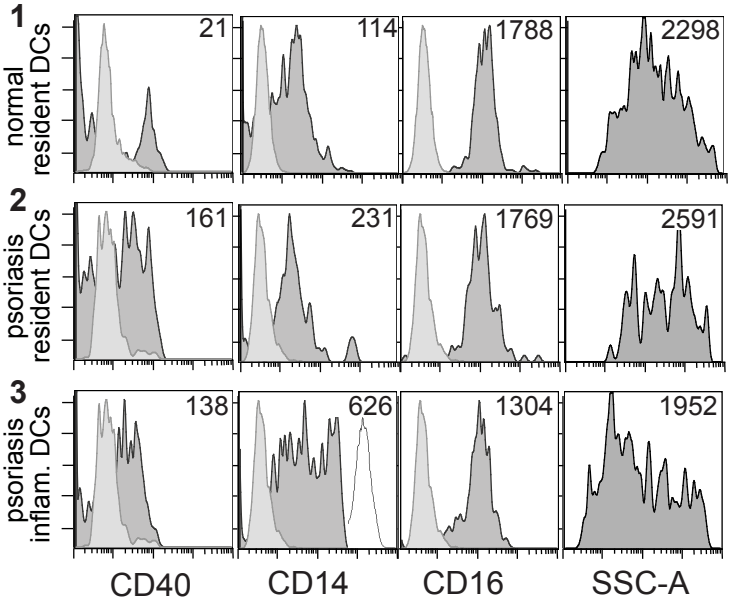
Table S1 b: Antibodies used for flow cytometry

Antigen-fluorophor	Manufacturer	Clone[a]	Iso	Dil
BDCA-1 (CD1c)- PE or FITC	Miltenyi	AD5-8E7	IgG2a	1:50
BDCA-3 – PE or FITC	Miltenyi	AD5-14H12	IgG1	1:50
CD163-FITC	Acris	5C6-FAT	IgG1	1:20
HLA-DR-APC-Cy7	BD Pharmingen	L243	IgG2a	1:50
HLA-DR-Alexa 700	BioLegend	L243	IgG2a	1:50
CD14-PerCP Cy5.5	BD Pharmingen	M5E2	IgG2a	1:25
Lin-PE: CD3, CD19, CD20, CD56	Lab custom	various	IgG1 & IgG2b	1:20
CD16-PE-Cy7	BD Pharmingen	3G8	IgG1	1:33
CD11c-APC	BD Pharmingen	S-HCL-3	IgG2b	1:33
CD45-Pacific Blue	BioLegend	HI30	IgG1	1:50
CD3-APC-Alexa 750 or Pacific Blue	eBioscience	OKT3	IgG2a	1:33
CD4-PE-Cy7	eBioscience	RPA-T4	IgG1	1:33
CD8-PerCP-Cy5.5	BD Pharmingen	SK1	IgG1	1:20
IL-17- Alexa 488	eBioscience	eBio64DEC17	rat IgG2a	1:20
IFNγ - Alexa 700	BD Pharmingen	B27	IgG1	1:33
Live-Dead – aqua marina	Invitrogen	NA	NA	1:100
CD40 - FITC	BD Pharmingen	5C3	IgG1	1:25
CD86 – Pacific Blue	BioLegend	IT2.2	IgG2b	1:50
CD205/DEC-205 – Alexa 647	BD Pharmingen	MG38	IgG2b	1:33
CD208/DC-LAMP – PE	BD Pharmingen	10-1112	IgG1	1:20
CD209/DC-SIGN – PerCP-Cy5.5	BD Pharmingen	DCN46	IgG2b	1:20

[a]All are murine monoclonals unless otherwise stated


a
BDCA-1
cells/mm
80
60
40
20
0
NL
LS
Wk1
Wk2
Wk4
Wk12
b
BDCA3
BDCA1
BDCA3 and BDCA1
BDCA3
CD11c
BDCA3 and CD11c
c
Lin- CD11c+HLA-DR+
normal
psoriasis
BDCA-1
BDCA-3
d
Blood myeloid DCs
Normal
Psoriasis
cells/150µl
2000
1500
1000
500
0
*
**
BDCA-1+
BDCA-3+
CD11c+ BDCA-1- BDCA-3-
Blood myeloid DCs
Normal
Psoriasis
% of myeloid DCs
80
70
60
50
40
30
20
10
0
BDCA-1+
BDCA-3+
CD11c+ BDCA-1- BDCA-3-
e

Supplementary Figure 1. (a) BDCA-1 cell counts during a clinical trial with etanercept, showing stable cell counts through out the treatmtent period. **(b) Upper panel.** BDCA-1 and BDCA-3 identified separate myeloid DC populations in the dermis of normal skin. **Lower panel.** In normal skin, BDCA-3^+ cells co-expressed CD11c (two positive cells), and some BDCA-3 staining was observed on blood vessels (n=4). In all IF figures, single stained controls are above the merged image, white line denotes dermo-epidermal junction, dermal collagen fibers gave green autofluorescence, and antibodies conjugated with a fluorochrome often gave background epidermal fluorescence. **(c)** Representative FACS plots comparing circulating BDCA-1^+ and BDCA-3^+ cells in normal and psoriatic circulation. Cells were gated on $CD3^-CD14^-CD56^-CD14^-DR^+11c^+$. **(d) Left panel.** FACS analysis of 150μL peripheral blood from normal volunteers (n=6) and psoriasis patients (n=6). Quantification of all patients showing a reduction in the circulation of BDCA-1^+ and BDCA-3^+ populations in psoriasis (blue) compared to normal patients (red). $p<0.05$ (*), $p<0.01$ (**). **Right panel**. quantification of data in (c) above; Y axis is % of myeloid DCs. **(e)** Negative control for immunohistochemistry of psoriasis lesional tissue, minus primary antibody. Size bar = 100μm.



Supplementary Figure 2. Additional FACS analysis of myeloid DC populations from normal and psoriasis single cell suspensions. Flow cytometric analysis of single cell suspensions of dermal émigrés from normal dermis or psoriatic dermis (n=3 for each). Large cells gated on CD11c+ HLA-DR hi, histograms in each row were gated on boxes (1-3) as identified in Figure 6a. Dark grey histogram represents antigen expression, light grey is isotype, and no fill (row 3) is CD14 expression on blood monocytes. MFI is indicated in the upper right or upper left corner of each histogram. Resident BDCA-1+ myeloid DCs from normal and psoriatic dermis showed similar expression on CD40 and CD16, while the population of BDCA-1- DCs in psoriasis showed lower HLA-DR, wider range of expression of CD14, and were smaller cells.