

Figure S1

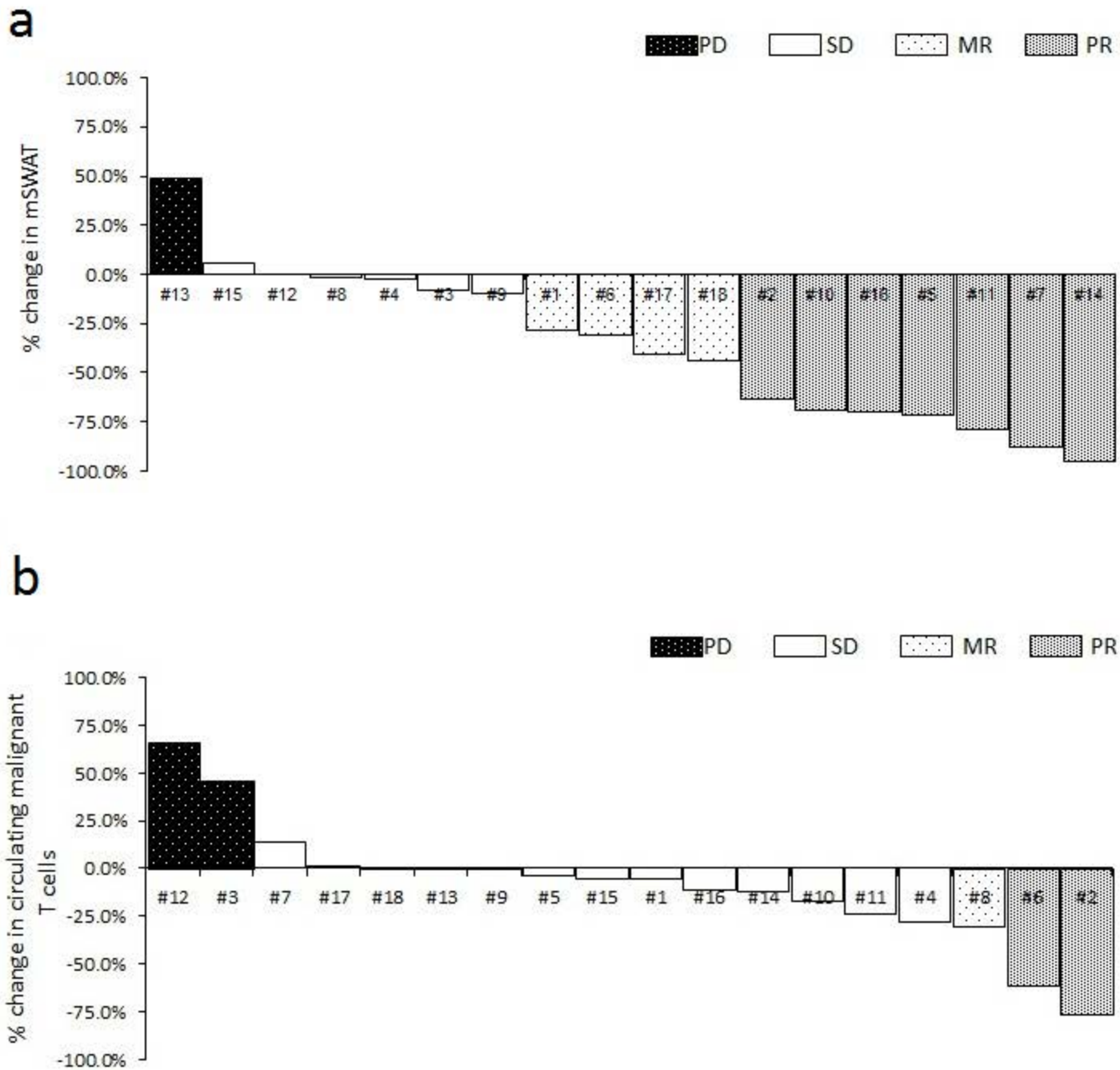


Figure S1. Percentage changes from baseline to 6 months of ECP treatment in mSWAT and circulating malignant T cells in 18 L-CTCL patients. The modified skin-weighted assessment tool (mSWAT) (a) and circulating malignant T cells by flow cytometry (b) were assessed for each patient at baseline to 6 months after ECP treatment. The percentage change at 6 months from baseline was calculated for each patient. PR: partial responders (#2, #5, #6, #7, #10, #11, #14, and #16); MR: minor responders (#1, #8, #17, and #18). SD: stable disease (#4, #9, and #15); PD: progressive disease (#3, #12, and #13).

Table S1 Clinical characteristics of L-CTCL patients in this study

| Patient # | Age/Gender/Race | Stage | TCR v β (%) | mSWAT | Circulating tumor T cells* | | ECP Cycles | Additional Therapy | Response | | |
|-----------|-----------------|---------------|--------------------------|-------|----------------------------|-----------|------------|-----------------------------|----------|-------|---------|
| | | | | | % | / μ l | | | Skin | Blood | Overall |
| 1 | 58/F/C | IVA | V β (70.0) | 63.0 | 64.2 | 1751.0 | 7 | Bexarotene IFN- α | MR | SD | MR |
| 2 | 66/M/C | IIIB | V β 22 (91.0) | 100.0 | 82.2 | 413.0 | 10 | Bexarotene IFN- α | PR | CR | PR |
| 3 | 71/M/AA | IVB (HTLV-1+) | n/a | 100.0 | 55.5 | 525.0 | 7 | Bexarotene IFN- α | SD | PD | PD |
| 4 | 54/M/C | IVA | V β 17 (54.0) | 39.0 | 20.6 | 69.0 | 7 | - | SD | SD | SD |
| 5 | 74/F/C | IVB | V β (85.0) | 93.0 | 89.9 | 3928.0 | 11 | Bexarotene | PR | SD | PR |
| 6 | 74/M/C | IVAB | V β 8 (73.7) | 74.0 | 73.7 | 2218.0 | 7 | - | MR | PR | PR |
| 7 | 67/M/C | IVA | V β (83.0) | 87.0 | 79.1 | 1671.0 | 12 | Bexarotene | PR | SD | PR |
| 8** | 61/M/C | IIIB | V β (76.0) | 77.0 | 64.4 | 227.0 | 25 | IFN- α | SD | MR | MR |
| 9 | 66/F/C | IVB | V β 2 (97.0) | 100.0 | 93.8 | 17981.0 | 13 | Bexarotene IFN- α | SD | SD | SD |
| 10 | 74/M/C | IVA | V β 7.2 (93.0) | 48.1 | 85.9 | 2752.0 | 11 | - | PR | SD | PR |
| 11 | 79/M/C | IVB (BM+) | V β 13.6 (97.1) | 54.0 | 87.5 | 11581.0 | 9 | Bexarotene | PR | SD | PR |
| 12* | 71/M/C | IVA | V β 17 (94.0) | 100.0 | 56.0 | 1284.6 | 10 | Bexarotene IFN- α | SD | PD | PD |
| 13 | 78/F/AA | IVB | V β 13.6 (95.0) | 47.0 | 94.5 | 9977.0 | 10 | - | PD | SD | PD |
| 14 | 63/M/C | IVB (BM+) | V β (94.0) | 49.0 | 94.7 | 22751.0 | 10 | IFN- α | PR | SD | PR |
| 15 | 73/M/C | IVA | V β 18.0 (95.0) | 47.0 | 77.1 | 2600.0 | 10 | Bexarotene | SD | SD | SD |
| 16 | 67/F/C | IVA | n/a | 67.0 | 91.9 | 4300.0 | 6 | Bexarotene | PR | SD | PR |
| 17 | 63/M/C | IVA | V β 5.1 (95.0) | 5.0 | 91.7 | 5139.0 | 6 | - | MR | SD | MR |
| 18 | 61/M/C | IVB | V β 7.1 (97.0) | 87.0 | 91.7 | 5500.0 | 8 | - | MR | SD | MR |

M: male, F: female, C: Caucasian, AA: African American, mSWAT: modified severity weight assessment tool; ECP: extracorporeal photopheresis, n/a: not available; CR: complete response; PR: partial response, MR: minimal response, SD: stable disease, PD: progressive disease; HTLV-1: Human T Lymphotropic Virus-1, *: CD4⁺CD26⁺ T cells except Patient#12 with CD4⁺ CD7⁻ phenotype; **: Patient with both L-CTCL and Graft-versus-Host disease (GVHD) who underwent weekly ECP treatment

Table S2 Clinical characteristics of GVHD patients in this study

| Patient # | Age/Sex/Race | Primary Disease | Type of Donor | Type of GVHD | Organs affected | Concurrent therapies | ECP cycles at 3/6 months | Clinical Response at 3 months | Clinical response at 6 months |
|-----------|--------------|--|-------------------------------------|---|--|--|--------------------------|---|--|
| 1 | 60/F/C | NHL | Match unrelated | De novo chronic | Skin (sclerodermoid), Mouth | Tacrolimus Methylprednisolone | 7/12 | No Response | GVHD progression |
| 2 | 50/M/C | NHL | Match related sibling | Acute, Grade 4 of skin | Skin | Steroids, Mycophenolate, Methylprednisolone | 5/n/a stopped ECP | Skin-Partial response | n/a |
| 3 | 29/M/C | CLL | Cord blood | Late acute | Skin (non-sclerodermoid), Gastrointestinal | Mycophenolate, Prednisone, Tacrolimus | 14/25 | No response | Partial response |
| 4 | 52/M/C | CML | Match related transplant | Classic chronic | Skin (sclerodermoid), eyes, liver, lung | Steroids, Erythromycin, Prednisone | 9/25 | Stable disease | Eye-no response Skin-no response Lungs-partial response Liver-complete response Overall-partial response |
| 5 | 62/M/C | CLL | Match unrelated | Classic Chronic | Skin(sclerodermoid), liver, oral, eyes | Tacrolimus | 19/43 | Skin-Partial response Liver-Complete response Eye-no response Mouth-partial response | Skin - Partial response Liver-Complete response Eye -no response Mouth-partial response |
| 6 | 55/F/C | SLL | Match Related Donor-from male donor | Classic chronic | Skin(sclerodermoid), joints- fascia, mouth, liver, eye | Tacrolimus, Methylprednisolone | 23/37 | Skin-Progression Eye-Progression Liver-normal | Skin-minor response fascia -Improved Mouth-partial responses |
| 7 | 50/M/C | CLL | Match related donor | Overlap syndrome (both chronic & acute) | Skin (scleroderma), fascia, liver, mouth | Mycophenolate , Methylprednisolone , Imatinib, Tacrolimus | n/a | Skin-Partial response Fascia-Partial response Liver-Complete response Mouth- Complete response | Skin-Partial response Fascia-Partial response Liver-Complete response Mouth- Complete response |
| 8 | 23/M/C | Aplastic anemia | Match related | Late acute | Liver, skin-involved but not active | Methylprednisolone , Tacrolimus | 14/n/a stopped ECP | No Response | No response-progression |
| 9 | 55/F/C | AML | Match related | Classic chronic | Skin, fascia, liver, Gastrointestinal tract (acute) | Prednisone, Tacrolimus, | 11/35 | No response | No response |
| 10 | 52/M/C | HL→ B cell lymphoma | HLA matched sibling | De novo chronic | skin (sclerodermoid), Mouth, eye, lung | Steroids, Azithromycin | 21/32 | Stable disease (Skin, Eyes, Lung, Mouth) | Stable disease (Eyes, Lung) Partial response (Skin, Mouth) |
| 11 | 62/F/C | Myelodysplastic syndrome / follicular lymphoma | Match-sibling | Overlap syndrome-both acute & chronic | Skin (sclerodermoid, macular popular) | Tacrolimus, Methyl prednisone | 23/30 | Stable Disease | Stable Disease |

GVHD: Graft versus Host Disease, F: Female, M: Male, C: Caucasian, ECP: Extracorporeal Photopheresis, n/a: not available, HL: Hodgkin's Lymphoma, NHL: Non-Hodgkin's Lymphoma, AML: Acute myelogenous leukemia, CLL: Chronic lymphocytic leukemia, CML: Chronic myelogenous leukemia, SLL: Small Lymphocytic Lymphoma

Table S3 The heterogeneity of levels, ratios, and HLA-DR expression on mDCs and pDCs in L-CTCL patients

| | Percentages (%) | | Ratio | | HLA-DR expression (MFI)† | |
|----------------------|-----------------|-----------|-----------|-----------|--------------------------|----------------|
| | mDC | pDC | mDC/pDC | pDC/mDC | mDC | pDC |
| L-CTCL-High | | | | | | |
| No. of patients | 1 | 1 | 3 | 3 | 0 | 0 |
| Mean ± SD | 1.33 | 2.12 | 3.04±0.58 | 2.68±0.18 | - | - |
| L-CTCL-Normal | | | | | | |
| No. of patients | 5 | 7 | 15 | 14 | 2 | 9 |
| Mean ±SD | 0.65±0.08 | 0.50±0.16 | 1.06±0.57 | 0.76±0.27 | 3851.68±9.19 | 2007.42±498.81 |
| L-CTCL-Low | | | | | | |
| No. of patients | 12 | 10 | 0 | 1 | 16 | 9 |
| Mean ± SD | 0.24±0.16 | 0.13±0.05 | - | 0.27 | 1678.11±702.52 | 984.16±199.66 |

L-CTCL-High: L-CTCL patients with higher than normal levels; L-CTCL-Normal: L-CTCL patients with normal range levels; L-CTCL-Low: L-CTCL patients with lower than normal levels; †MFI: mean fluorescence intensity