

1 **Supplementary table**

2 **Table S1. Factors affecting the development of relapsed lesions in the lymph nodes, spleen, and gastrointestinal tract**

Lesion at relapse	Factors	Univariate analysis			Multivariate analysis			
		Odds ratio	(95% CI)	P-value	Odds ratio	(95% CI)	P-value	
Lymph node	Abnormal lymphocyte (≥5%) in PB*	Presence vs Absence	0.428	(0.155 - 1.149)	0.001	0.343	(0.125 - 0.943)	0.038
	Lymph node lesion*	Presence vs Absence	3.955	(0.928 - 24.12)	0.043	6.280	(1.260 - 27.00)	0.018
	Performance status	2-4 vs 0-1	0.373	(0.133 - 1.006)	0.043	0.237	(0.082 - 0.684)	0.009
	Allo-SCT	Allo-SCT group vs CHT group	0.517	(0.180 - 1.425)	0.172	-	-	-
Spleen	Spleen lesion*	Presence vs Absence	4.470	(1.008 - 20.15)	0.024	9.490	(1.720 - 52.40)	0.010
	WBC	< 8.9 × 10 ⁹ /l vs ≥8.9 × 10 ⁹ /l	0.291	(0.047 - 1.302)	0.115	0.147	(0.025 - 0.035)	0.035
	Allo-SCT	Allo-SCT group vs CHT group	0.283	(0.028 - 1.479)	0.119	0.156	(0.022 - 1.120)	0.065
	Abnormal lymphocyte (≥5%) in PB*	Presence vs Absence	0.364	(0.073 - 1.520)	0.129	-	-	-
	Liver lesion*	Presence vs Absence	2.664	(0.576 - 11.58)	0.148	-	-	-
	Intrathecal prophylaxis	Yes vs No	1.917	(0.227 - 91.23)	0.203	-	-	-
	Lung lesion*	Presence vs Absence	3.088	(0.249 - 25.10)	0.224	-	-	-
GI-tract	GI-tract lesion*	Presence vs Absence	18.90	(1.764 - 275.9)	0.006	34.6	(2.980 - 403.0)	0.005
	Time of initial chemotherapy	1997 - 2003 vs 2004 - 2010	4.555	(0.483 - 58.50)	0.114	8.900	(0.776 - 102.0)	0.079
	Intrathecal prophylaxis	Yes vs No	0.214	(0.021 - 2.886)	0.14	-	-	-
	Subtype of ATL	Acute plus unfavorable chronic type vs Lymphoma type	0.214	(0.021 - 2.886)	0.14	-	-	-

3 The following factors were obtained at the initial diagnosis; performance status, white blood cell count, each lesion*.

4 Factors with at least borderline significance ($P < .25$) according to Fisher's exact test were listed in the results of the univariate analysis.

5 Abbreviations: 95% CI indicates the 95% confidence interval; GI tract, gastrointestinal tract; PB, peripheral blood; WBC, white blood
6 cell count; ATL, adult T-cell leukemia-lymphoma.

7

8

1 **Table S2. Factors affecting the development of relapsed lesions in the central nervous system**

Factors	Univariate analysis			Multivariate analysis			
	Odds ratio	(95% CI)	P-value	Odds ratio	(95% CI)	P-value	
Ascites*	Presence vs Absence	13.41	(1.661 - 168.2)	0.006	26.60	(1.830 - 386.0)	0.016
sIL-2R	≥1,2000 IU/ml vs < 1,2000 IU/ml	6.195	(1.171 - 63.07)	0.024	5.810	(0.985 - 34.30)	0.052
Interval from CR to relapse	< 180 days vs ≥180 days	4.178	(0.959 - 25.78)	0.037	12.00	(1.250 - 116.0)	0.031
CNS lesion*	Presence vs Absence	6.078	(0.715 - 52.15)	0.053	-	-	-
Hypercalcemia	Presence vs Absence	3.303	(0.823 - 13.79)	0.055	-	-	-
Spleen lesion*	Presence vs Absence	3.775	(0.880 - 16.03)	0.063	-	-	-
Abnormal lymphocytes (≥5%) in PB*	Presence vs Absence	3.286	(0.754 - 20.25)	0.126	-	-	-
Age	≥60 yrs vs < 60 yrs	0.332	(0.068 - 1.340)	0.127	0.203	(0.037 - 1.100)	0.065
WBC	≥8.9 × 10 ⁹ /l vs < 8.9 × 10 ⁹ /l	2.667	(0.662 - 13.07)	0.139	-	-	-
BUN	High vs Normal	2.673	(0.496 - 12.49)	0.216	-	-	-

2 The following factors were obtained at the initial diagnosis; sIL-2R, hypercalcemia, BUN, and each lesion*.

3 Factors with at least borderline significance ($P < .25$) according to Fisher's exact test were listed in the results of the univariate analysis.

4 Abbreviations: sIL-2R, soluble interleukin-2 receptor; CR, complete remission; BUN, blood urea nitrogen.

5

6

7

8

9

1 **Table S3. Overall survival by tumor lesions observed in all patients**

Tumor lesion		All patients		
		No. of patients	median OS (days)	P-value
Abnormal lymphocytes (≥5%) in the peripheral blood	Presence	29	197	0.676
	Absence	50	167.5	
Skin	Presence	23	326	0.031
	Absence	56	136	
Lung	Presence	7	133	0.143
	Absence	72	187	
Lymph node	Presence	37	148	0.140
	Absence	42	224	
Liver	Presence	11	139	0.233
	Absence	68	186	
Spleen	Presence	12	128	0.002
	Absence	67	200	
CNS	Presence	13	126	0.676
	Absence	66	187	
Bone	Presence	6	269	0.124
	Absence	73	158	
Ascites	Presence	4	70.5	0.005
	Absence	75	181	
Peripheral effusion	Presence	7	44	<0.001
	Absence	72	195	
GI tract	Presence	5	112	0.691
	Absence	74	180	
Intestine	Presence	1	333	0.723
	Absence	78	173.5	

2 Abbreviations: OS indicates overall survival; CNS, central nervous system; GI tract,
3 gastrointestinal tract.

4
5
6
7
8
9
10
11
12

1 **Table S4. Overall survival by tumor lesions observed in allo-SCT and CHT groups**

Tumor lesion		Allo-SCT group			CHT group		
		No. of patients	median OS (days)	P-value	No. of patients	median OS (days)	P-value
Abnormal lymphocytes (≥5%) in the peripheral blood	Presence	4	172.5	0.740	25	197	0.605
	Absence	26	176		24	155	
Skin	Presence	9	326	0.709	14	331.5	<0.0001
	Absence	21	115		35	139	
Lung	Presence	3	35	0.044	4	147.5	0.868
	Absence	27	231		45	181	
Lymph node	Presence	11	109	0.996	26	153	0.066
	Absence	19	231		23	218	
Liver	Presence	2	341	0.880	9	139	0.194
	Absence	28	176		40	195	
Spleen	Presence	2	115	0.256	10	128	0.002
	Absence	28	205		39	200	
CNS	Presence	6	86.5	0.811	7	140	0.450
	Absence	24	205		42	187	
Bone	Presence	3	281	0.356	3	257	0.288
	Absence	27	115		46	160	
Ascites	Presence	1	24	<0.001	3	117	0.030
	Absence	29	179		46	187	
Peripheral effusion	Presence	2	25	<0.001	5	93	<0.001
	Absence	28	205		44	195	
GI tract	Presence	1	34	0.048	4	112	0.660
	Absence	29	179		45	181	
Intestine	Presence	1	333	0.947	0	-	not estimated
	Absence	29	173		49	179	

2 Abbreviations: allo-SCT indicates allogeneic hematopoietic stem cell transplantation; CHT, chemotherapy.

3

4

1 **Table S5. Relationship between GVHD and tumor lesions in the allo-SCT group**

UPN	CR duration (day)	Involved lesion at the initial diagnosis	Involved lesion at relapse	GVHD status at relapse	Immunosuppressants at relapse	Donor type	IT before allo-SCT
1	49	PB, spleen, LN	CNS, skin	aGVHD grade IV	PSL	R-PBSC	Yes
2	101	Bone, skin	CNS	cGVHD extensive	CsA and PSL	R-BM	Yes
3	104	PB, skin	PB	cGVHD extensive	Tac	UR-BM	Yes
4	135	PB, lung, LN, liver, spleen	LN, liver, splenomegaly	cGVHD extensive	None	R-PBSC	Yes
5	138	PB, skin, LN, liver	CNS	cGVHD extensive	None	R-BM	Yes
6	183	CNS, PB, LN, intestine, PE, ascites	CNS	cGVHD extensive	CsA and MMF	UR-CB	Yes
7	31	PB, skin, LN	LN	Remission	CsA	R-BM	Yes
8	34	Skin, PB, LN	Skin	Remission	CsA	R-BM	Yes
9	57	PB	LN	Remission	CsA	R-PBSC	Yes
10	89	Skin, LN	PB	Remission	None	UR-CB	Yes
11	128	PB, skin, CNS, LN, spleen	Eye	Remission	Tac	UR-BM	Yes
12	155	PB, lung, LN	CNS, LN	Remission	Tac	R-PBSC	No
13	177	Skin, PB, LN, liver	Skin, lung	Remission	Tac	UR-BM	Yes
14	322	PB, skin, GI-tract	Bone	Remission	Tac	R-PBSC	Yes
15	423	PB, skin, LN, spleen	Bone, LN, spleen	Remission	Tac	UR-BM	Yes
16	468	LN, lung, PE	Bone	Remission	None	R-BM	No
17	3490	LN, GI tract	LN, GI tract	Remission	None	R-BM	No
18	37	LN, liver, spleen	Skin, LN, PE	no episode	Tac	R-PBSC	Yes
19	42	Penis	Skin	no episode	CsA	R-PBSC	Yes
20	62	Skin, PB, lung, LN, liver, spleen	Skin, lung, PE, Ascites	no episode	CsA	R-BM	Yes
21	64	PB, LN	LN, liver	no episode	Tac	UR-CB	Yes
22	84	CNS	CNS	no episode	CsA	R-BM	Yes
23	130	PB, skin, LN	PB	no episode	None	R-BM	Yes
24	134	PB, LN, liver, spleen	Lung	no episode	Tac	R-BM	Yes
25	169	LN	LN	no episode	None	UR-CB	Yes
26	269	PB, LN, ascites	Skin, LN, PB	no episode	Tac	UR-BM	Yes
27	280	GI tract, intestine	Intestine	no episode	None	UR-CB	Yes
28	590	PB	Skin	no episode	None	UR-CB	Yes
29	1447	PB	LN	no episode	None	UR-CB	Yes
30	3071	Skin, PB, LN	Skin	no episode	None	R-BM	Yes

2 Abbreviations: GVHD indicates graft-versus-host disease; UPN, unique patient number; IT, intrathecal administration of cytarabine,

- 1 methotrexate, and predonisone; PB, abnormal lymphocytes in the peripheral blood; LN, lymph node; PE, peripheral effusion; aGVHD, acute GVHD;
- 2 cGVHD, chronic GVHD; PSL, predonisone; CsA, cyclosporine A; Tac, tacrolimus; R-BM, bone marrow from a related donor; R-PBSCC, peripheral blood
- 3 stem cells from a related donor; UR-BM, bone marrow from an unrelated donor; UR, cord blood from an unrelated donor.