

Supplementary table 1: *hTERT* Bisulfite PCR conditions and primers sequences

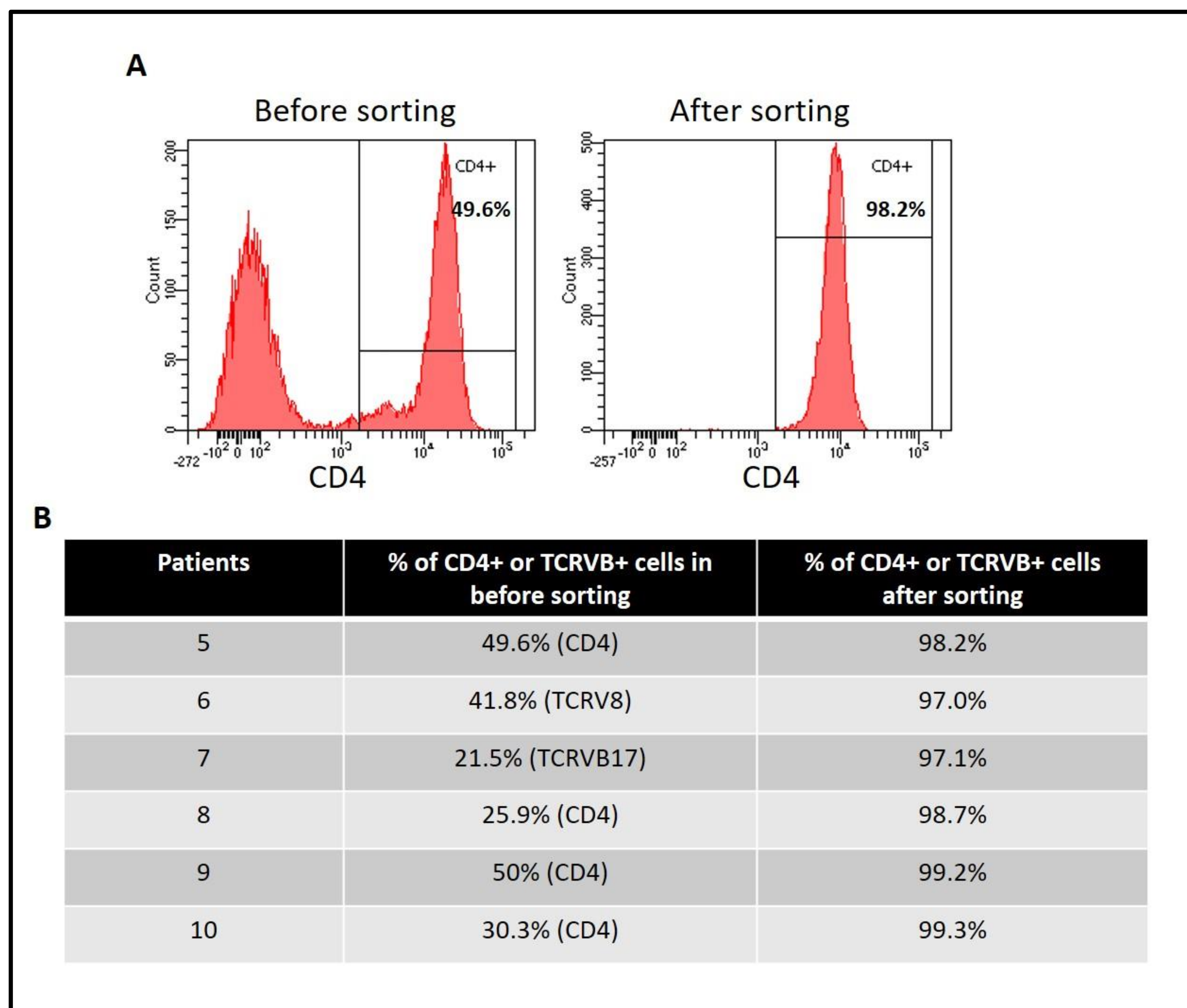
Forward Primer	5' GGTTTGTGTTAAGGAGTTTAAGT 3'	
Reverse Primer	5' CCAACCCTAAAACCCCAAAC 3'	
PCR program	2 min: 94° C	
	30s: 94° C	35 cycles
	30s: 58° C	
	1min: 72° C	
5min: 72° C		

Supplementary table 2: Primer sequences for *hTERT*, *hWT1* and *hPRT-1*

qRT-PCR	Forward Primer	Reverse Primer
<i>hTERT</i>	CGGAAGAGTGTCTGGAGCAA	GGATGAAGCGGAGTCTGGA
<i>hWT1</i>	CCAGCTTGAATGCATGACCTG	GCCCTTCTGTCCATTTCCTG
<i>HPRT1</i>	TGACACTGGCAAAACAATGCA	GGTCCTTTTCACCAGCAAGCT

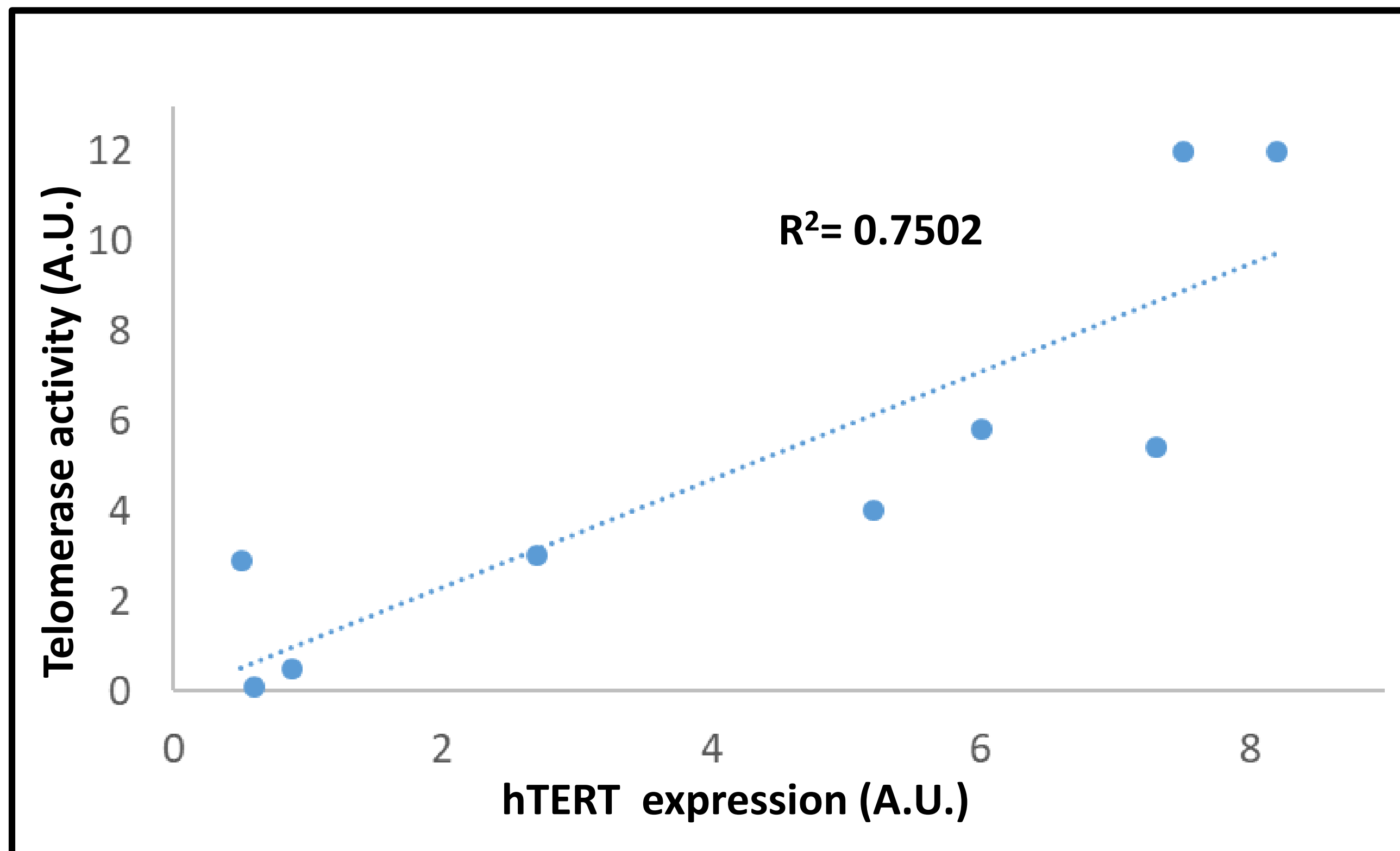
Supplementary table 3: Primer sequences used for *WT1* ChIP-qPCR

Region	Primer sequence	Purpose
<i>hTERT</i> -323 -F	AGCGGAGAGAGGTCGAATC	Region of interest
<i>hTERT</i> -323 -R	AGGGCCTCCACATCATGG	
<i>hTAL1</i> -2k -F	CAGAAGGGCAGCAAACAAAC	Positive control
<i>hTAL1</i> -2k -R	GTGTCCTGTTGGGCAGTGTG	
<i>hTERT</i> -709 -F	GAGCAAACCACCCCAAATC	Positive control
<i>hTERT</i> -709 -R	TCCATTTCACCCCTTTCTC	
Untr12	Active Motif Human negative control primer set 1, #71001	Negative control



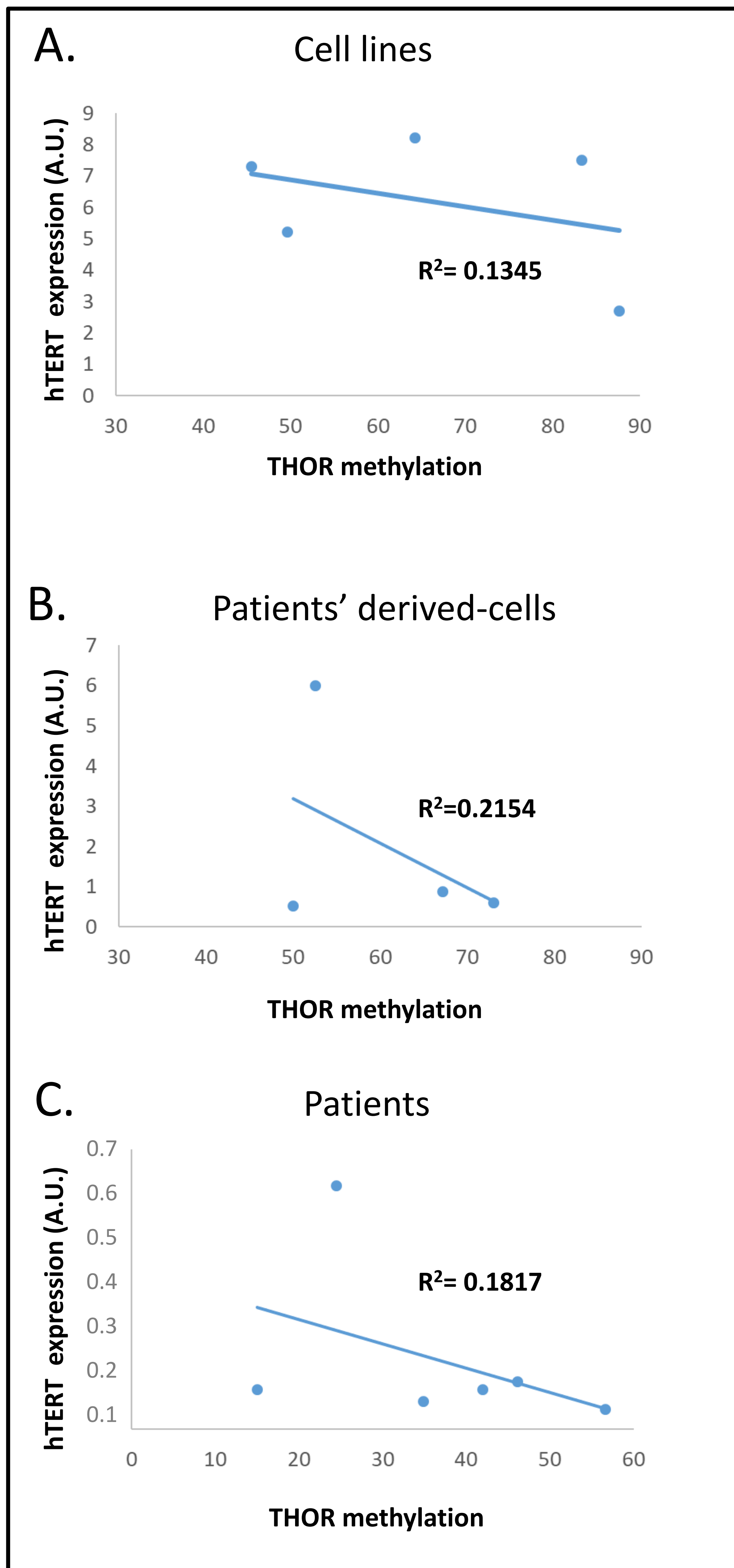
Supplementary figure 1: Evaluation of tumor cells proportion before and after cell sorting

Fresh cells were isolated by magnetic or flow sorting by the selection of CD4+ or TCRVβ+ population when it was possible. (A) Example of histogram showing the proportions of the tumor cells before and after sorting. (B) Table summarizing the proportions of the tumor cells before and after sorting for all patients.



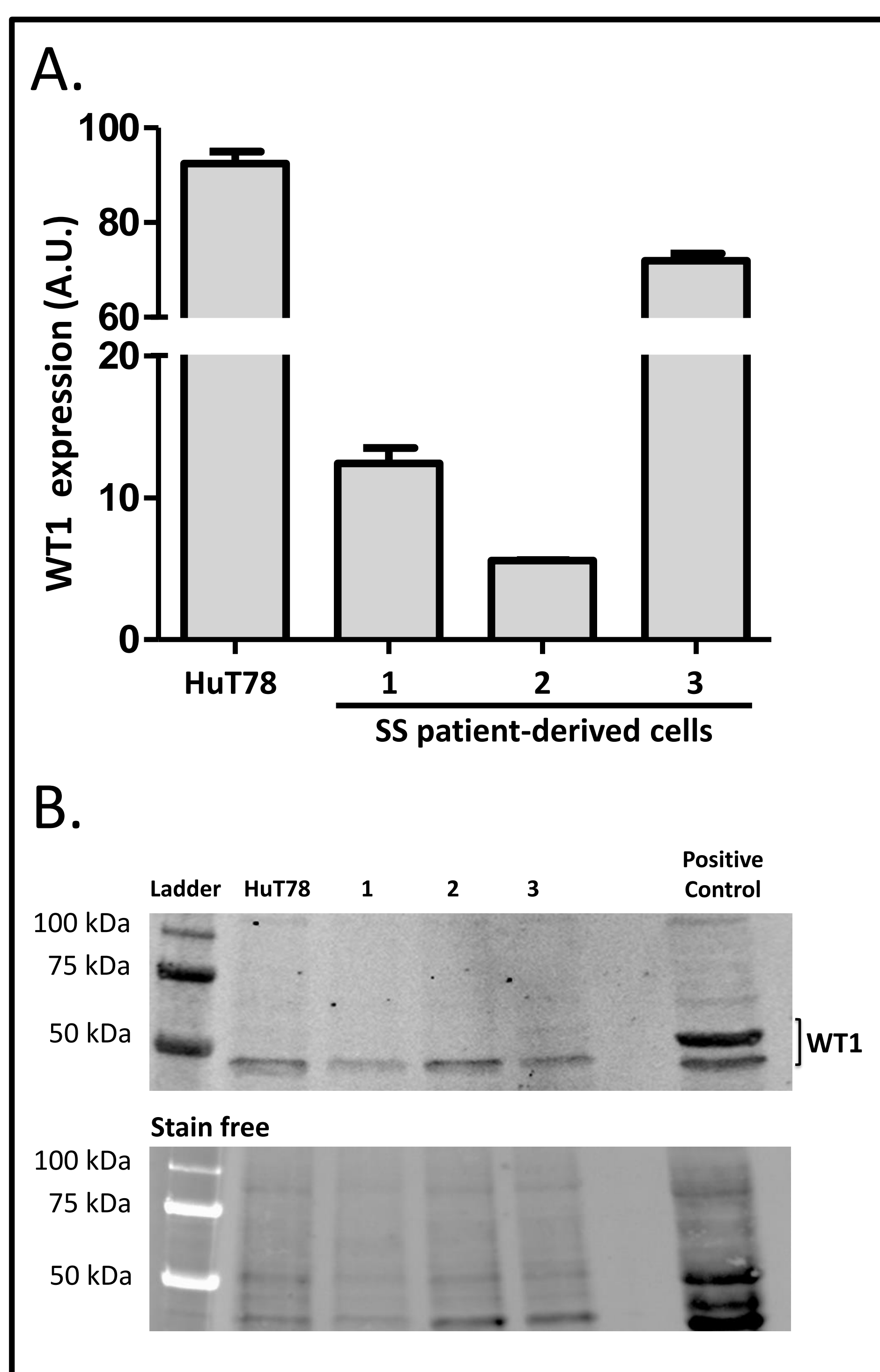
Supplementary figure 2: Correlation between hTERT expression level and telomerase activity.

hTERT mRNA levels and telomerase activity evaluated by TRAP assay are correlated in CTCL cell lines and SS PDC with $R^2 = 0.7502$. CTCL: Cutaneous T-Cell Lymphomas; SS PDC: Sézary Syndrome Patients-Derived Cells. .



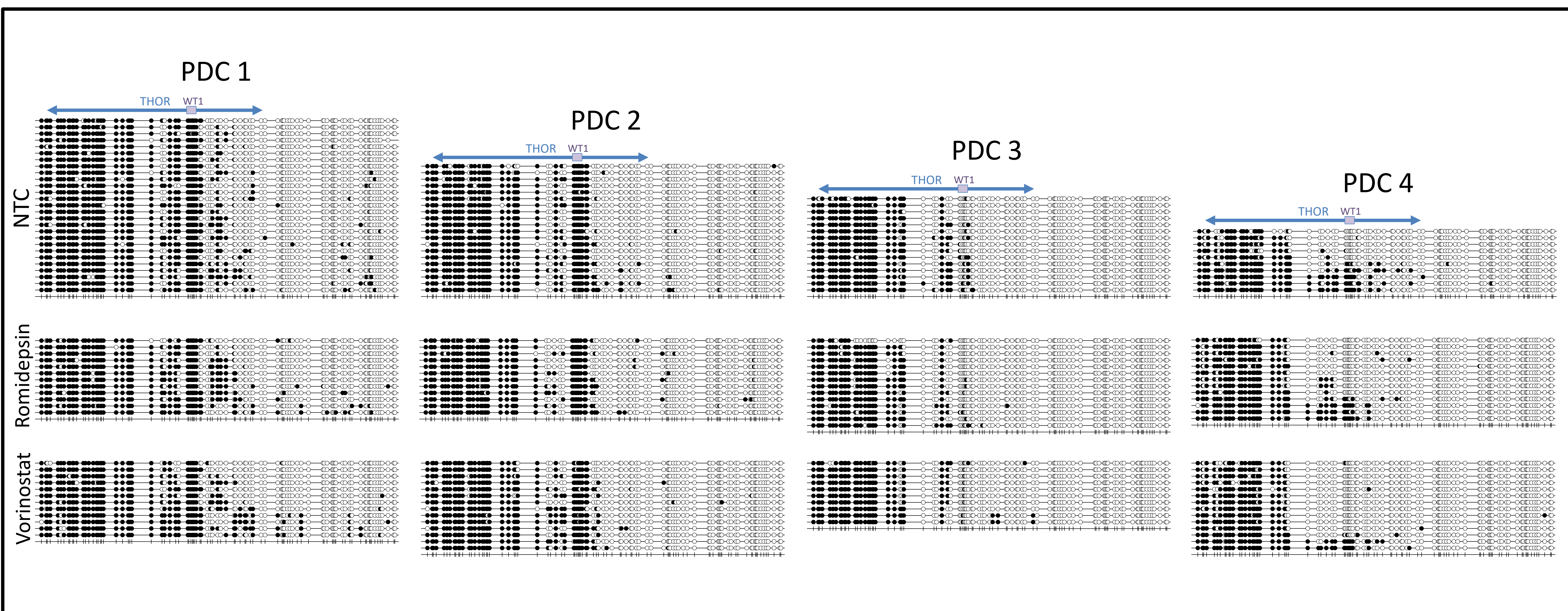
Supplementary figure 3: Absence of correlation between THOR methylation status and hTERT expression level.

R2 coefficients showing the absence of correlation between THOR methylation status and hTERT expression level in CTCL cell lines (A), SS PDC (B) and SS patients (C). CTCL: Cutaneous T-Cell Lymphomas; SS PDC: Sézary Syndrome Patients-Derived Cells; SS: Sézary Syndrome.



Supplementary figure 4: WT1 mRNA and protein expression.

(A) WT1 mRNA levels normalized to the expression of the TBP gene and expressed in arbitrary unit (A.U.) and (B) WT1 protein levels by western blot in HuT78 cell line, in SS PDC 1, 2 and 3 and in MCF7 as positive control using the stain-free technology. SS PDC: SS PDC: Sézary Syndrome Patients-Derived Cells.



Supplementary figure 5: hTERT promoter methylation profiles after HDACi treatments.

hTERT promoter methylation profiles of SS PDC 1, 2, 3 and 4 in NTC and in romidepsin or vorinostat –treated cells. HDACi: Histone DeACetylases inhibitors; SS PDC: SS PDC: Sézary Syndrome Patients-Derived Cells, NTC: Non-Treated Cells.