Figure 1

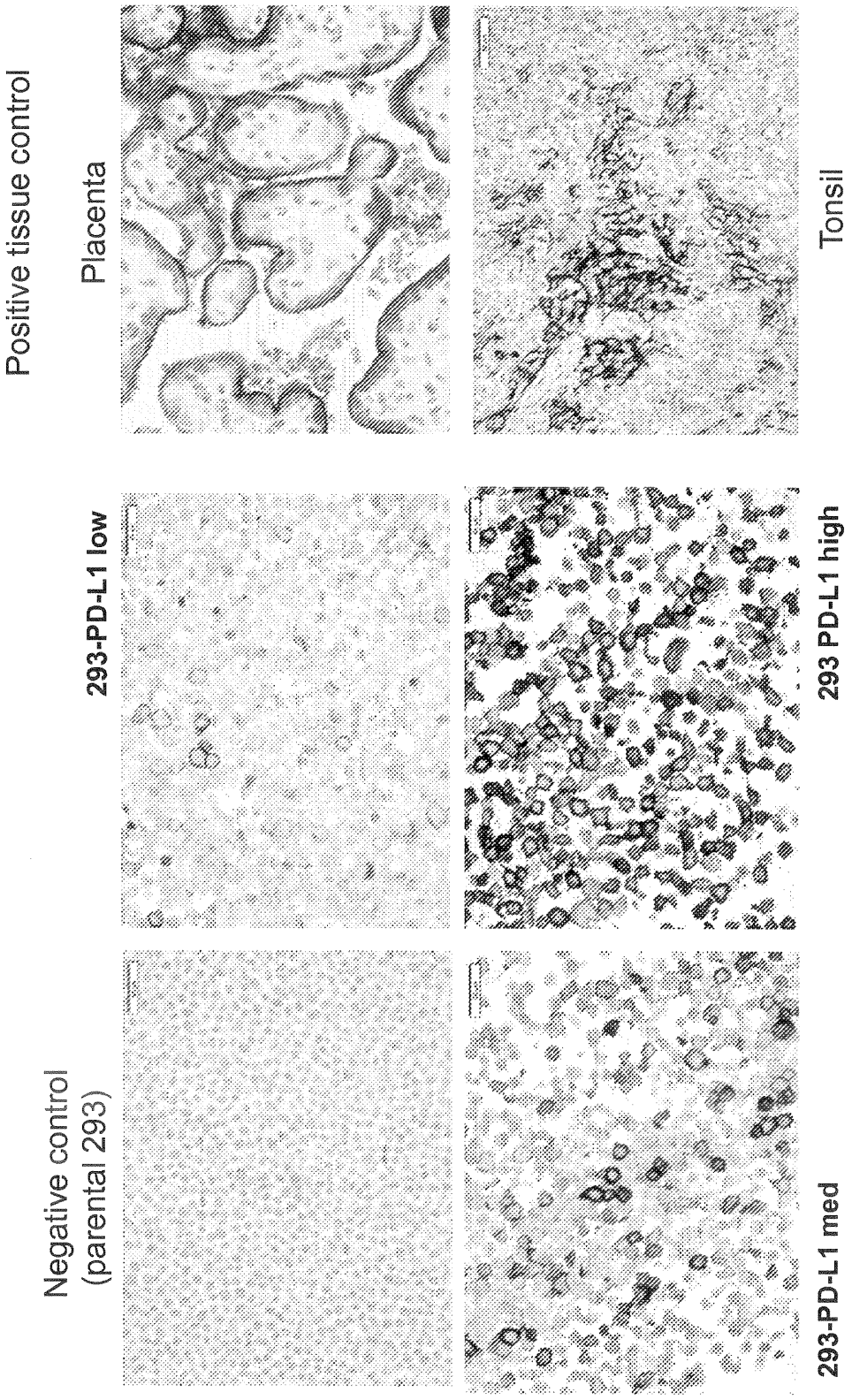

Positive tissue control
Placenta
Tonsil
293-PD-L1 low
293 PD-L1 high
293-PD-L1 med
Negative control
(parental 293)

Figure 2

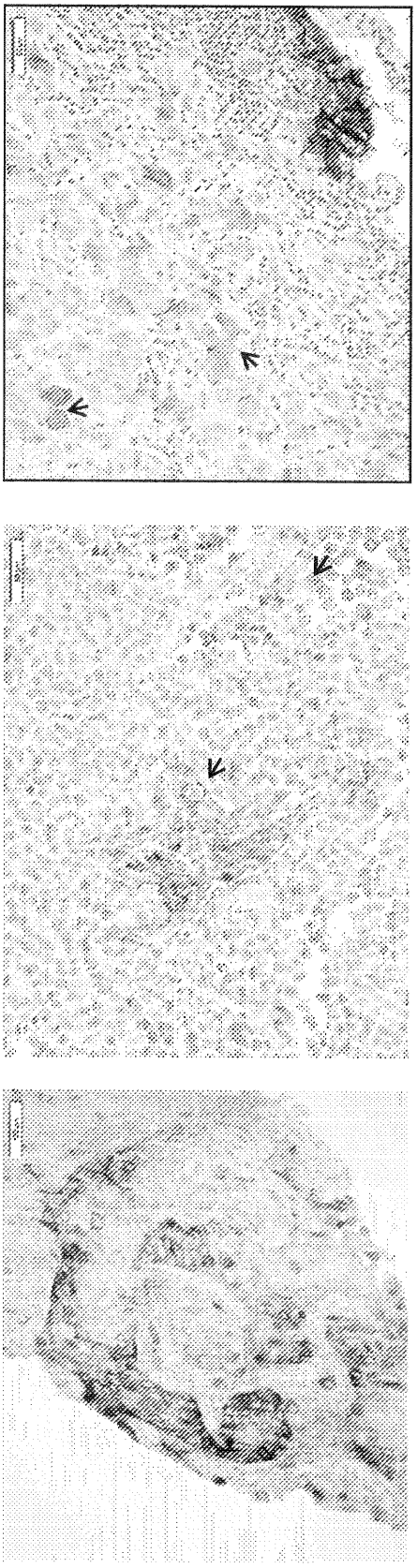
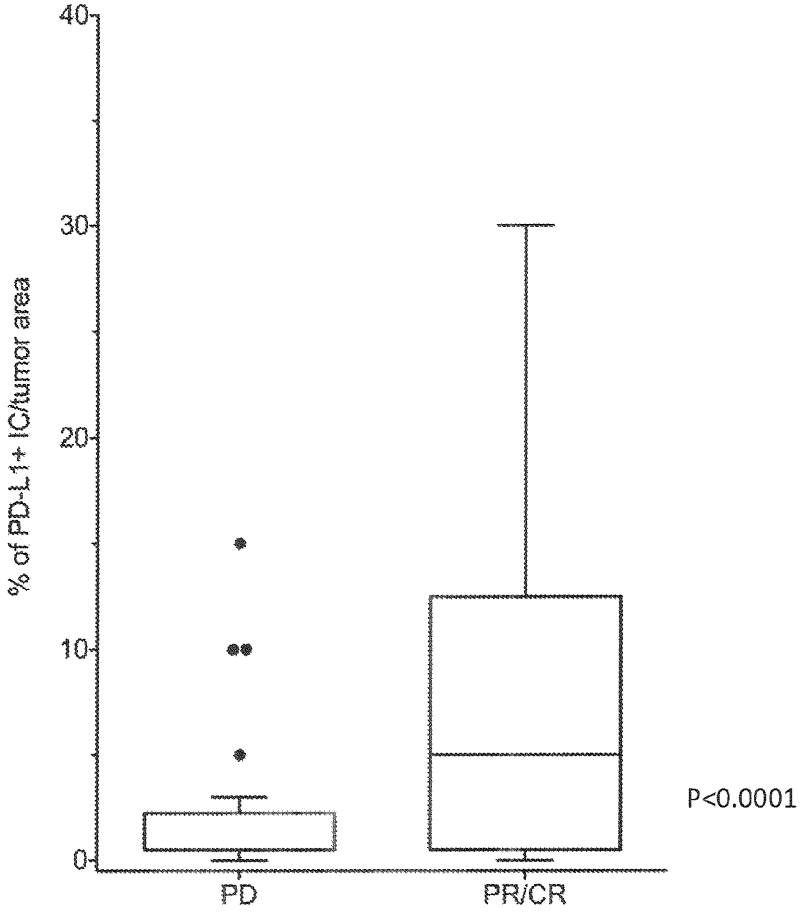
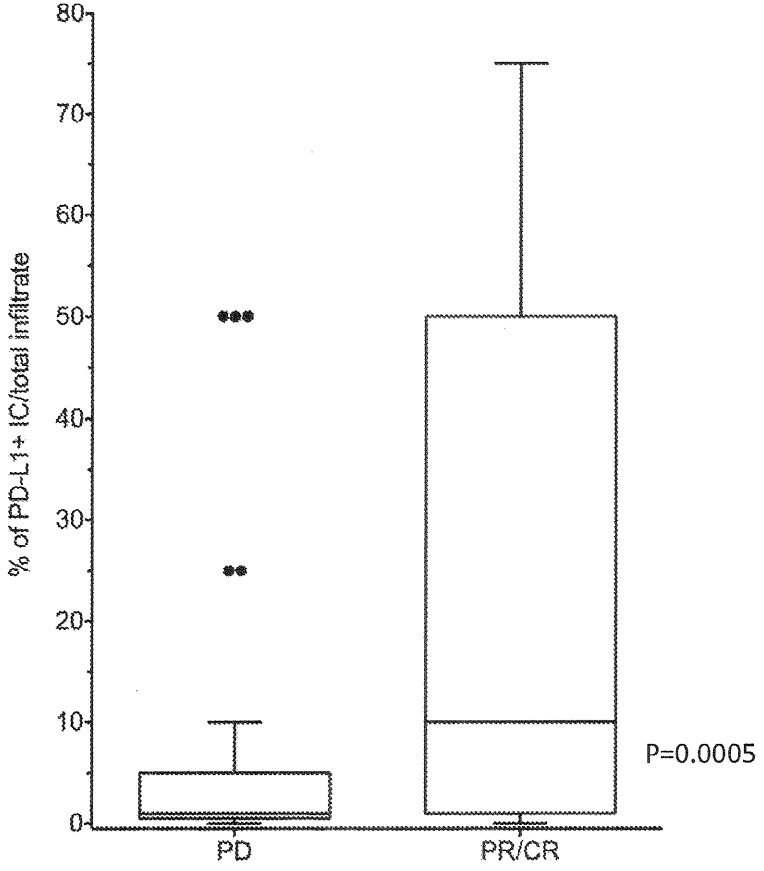

NSCLC, adenocarcinoma
Malignant Melanoma
Triple-Negative Breast Cancer

Figure 3



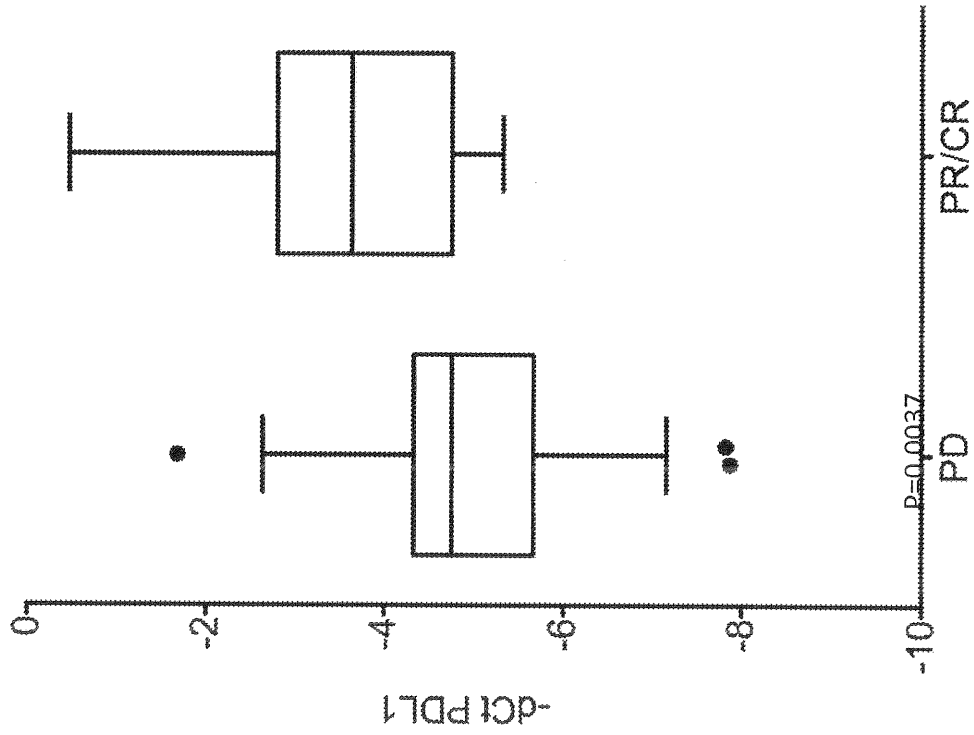


IC – tumor infiltrating immune cells
TC – tumor cells

Line: Median

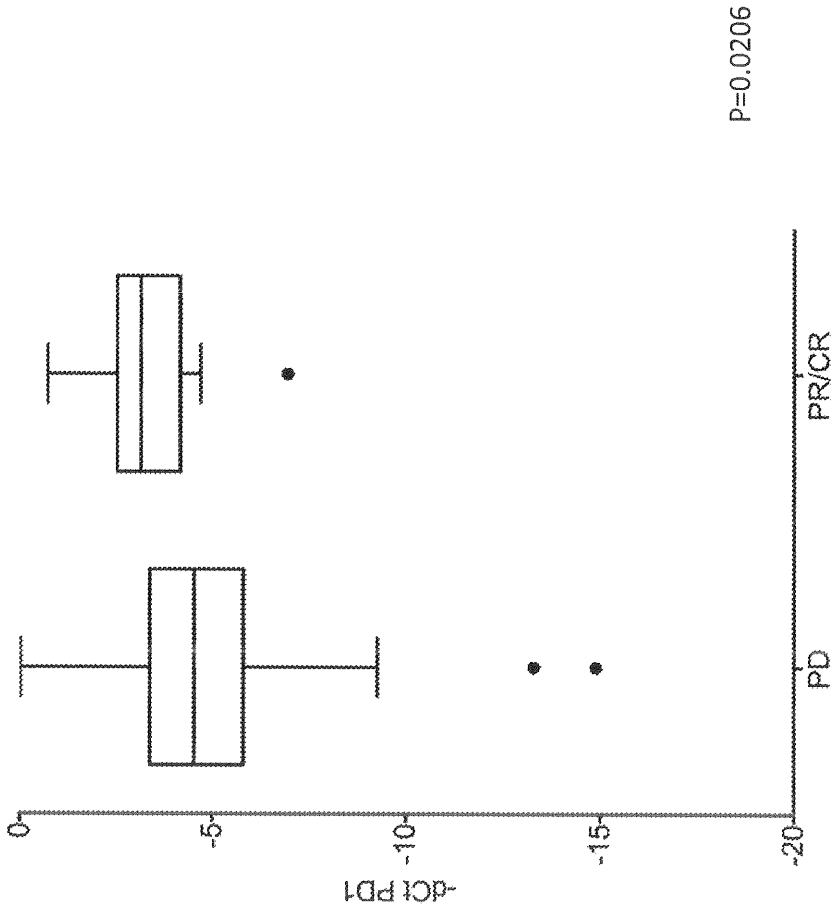
Only pts enrolled prior to July 1, 2012

Figure 4



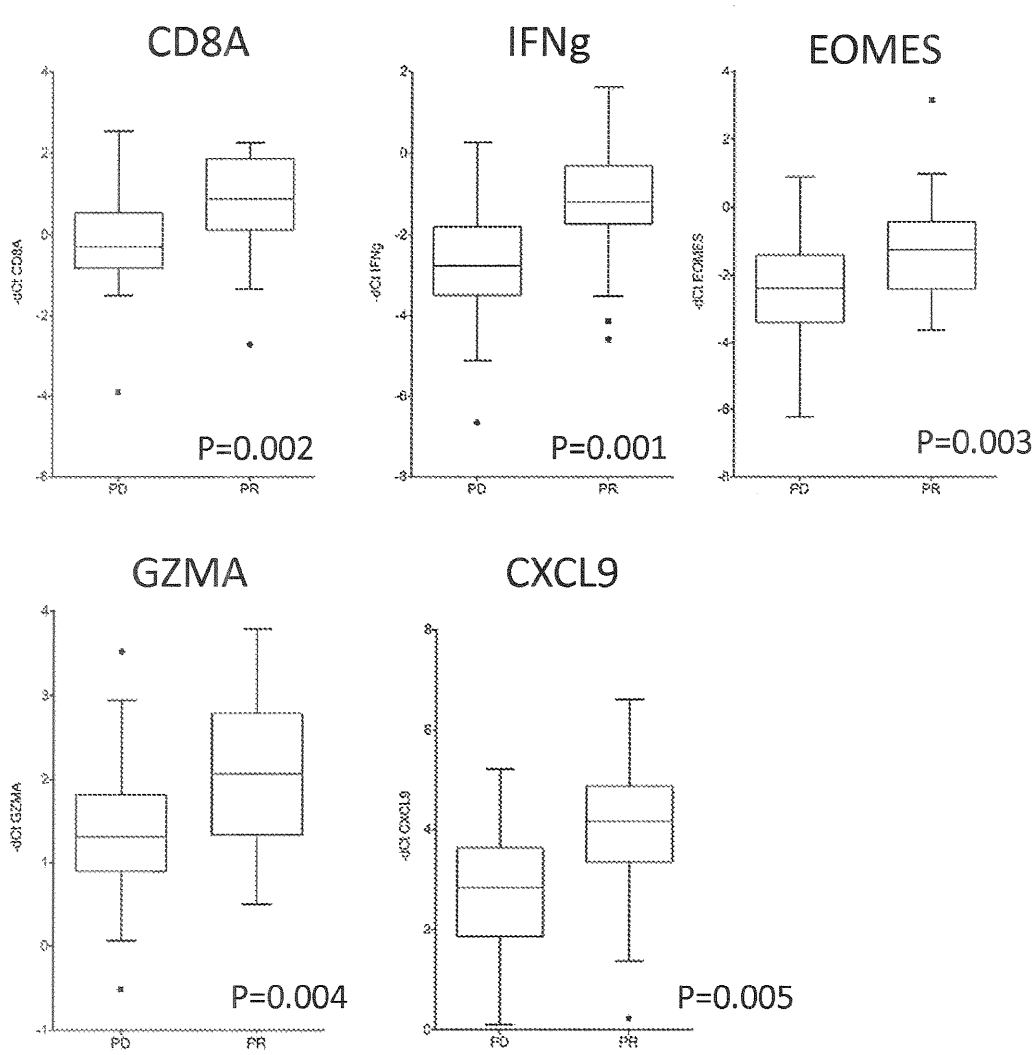
Only Pts with samples available before 11/1/12

Figure 5



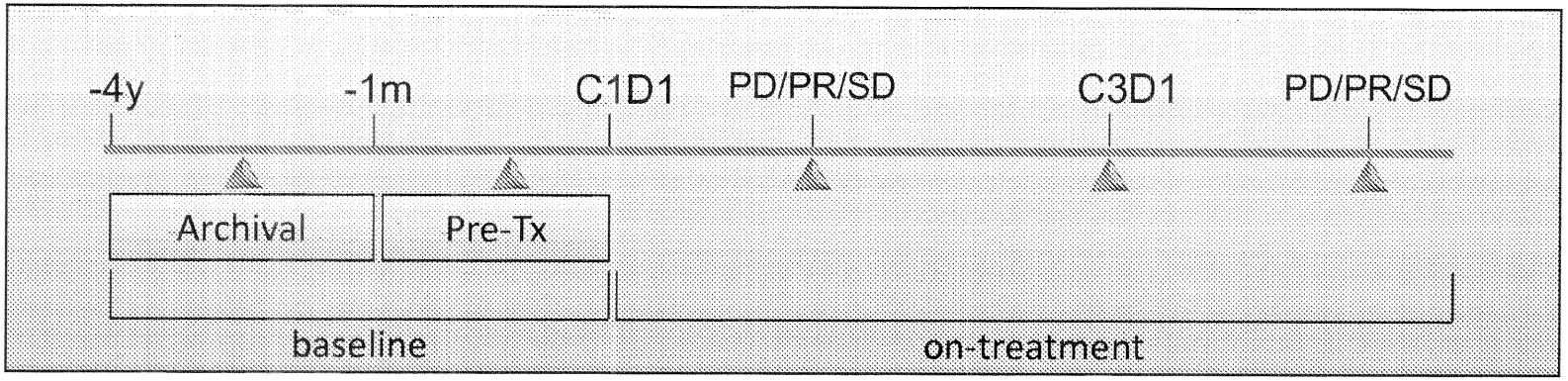
Only Pts with samples available before 11/1/12

Figure 6



Only Pts with samples available before 11/1/12

Figure 7



Paired Serial Biopsy Tumor Samples*	N = 26
Max SLD decrease†	
>30% reduction	4
0-30% reduction	6
0-20% increase	10
>20% increase	4
Unevaluable SLD due to tumor excision	2
Indications	
Melanoma	15
RCC	4
NSCLC	2
H&N	2
Other (CRC, gastric, breast)	1 each

*paired tumor samples that contained tumor tissue
†at any time point in study

Figure 8

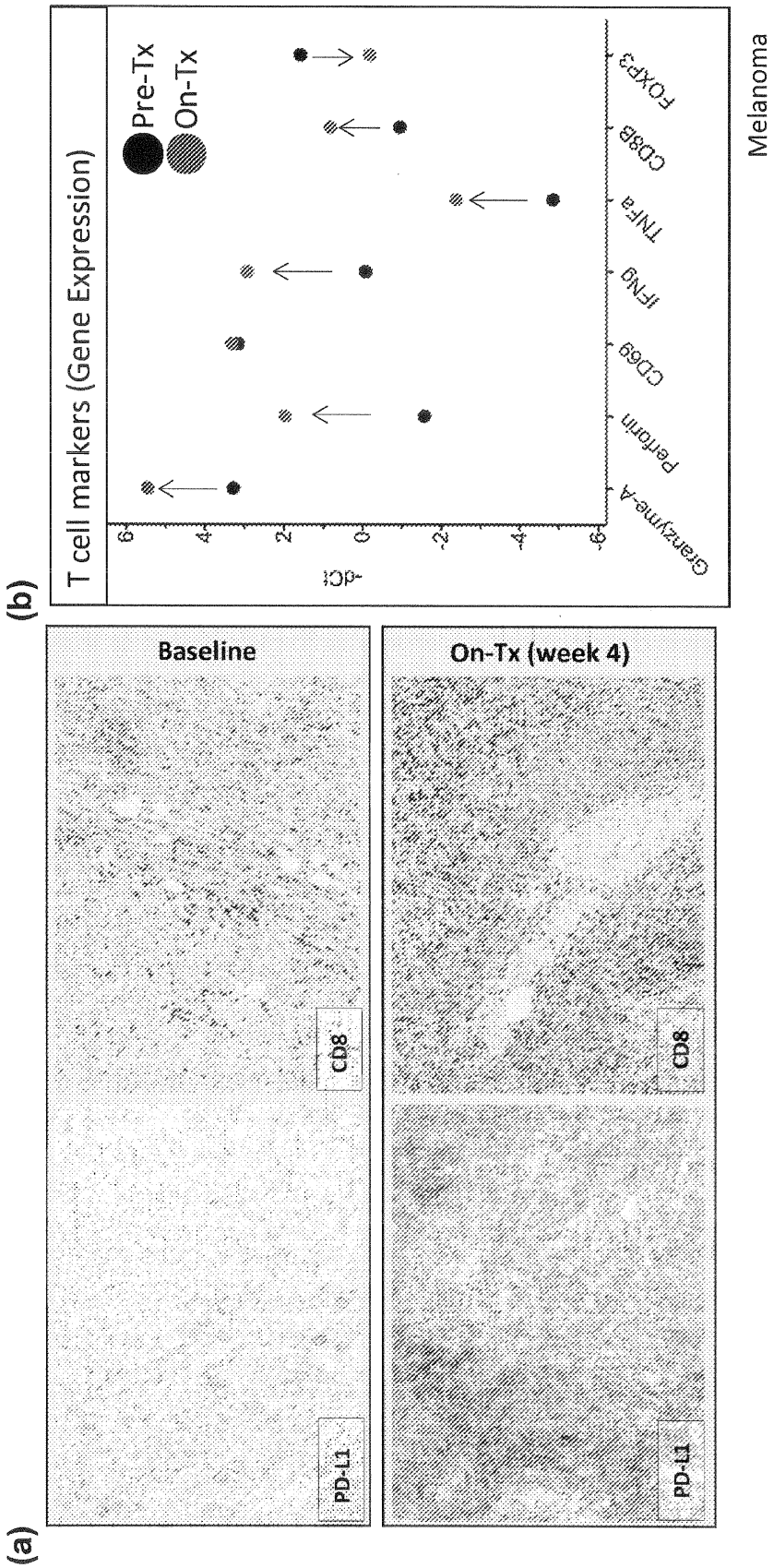

(a)
Baseline
On-Tx (week 4)
CD8
PD-L1
CD8
PD-L1
(b)
T cell markers (Gene Expression)
Pre-Tx
On-Tx
-dCt
6
4
2
0
-2
-4
-6
Granzyme-A
Perforin
CD69
IFNg
TNFa
CD8B
FOXP3
Melanoma

Figure 9

Summary of responses to anti-PD-L1 antibody in paired biopsies

Max SLD Decrease†	Increase in tumor PD-L1*
>30% reduction	4/4 (100%)
0-30% reduction	2/6 (33%%)
0-20% increase	1/10 (10%)
>20% increase	0/4 (0%)
Unevaluable SLD (due to tumor excision**)	2/2 (100%)

* # of patients with increased PD-L1 expression following Tx with anti-PD-L1 antibody, including sterilized tumor with PD-L1+ immune cells; Increase in tumor PD-L1 as measured by PD-L1 IHC

†at any time point in study

** excision of responding tumor for purposes of biomarker analysis rendered the patient UE for max SLD change

Figure 10

(a)

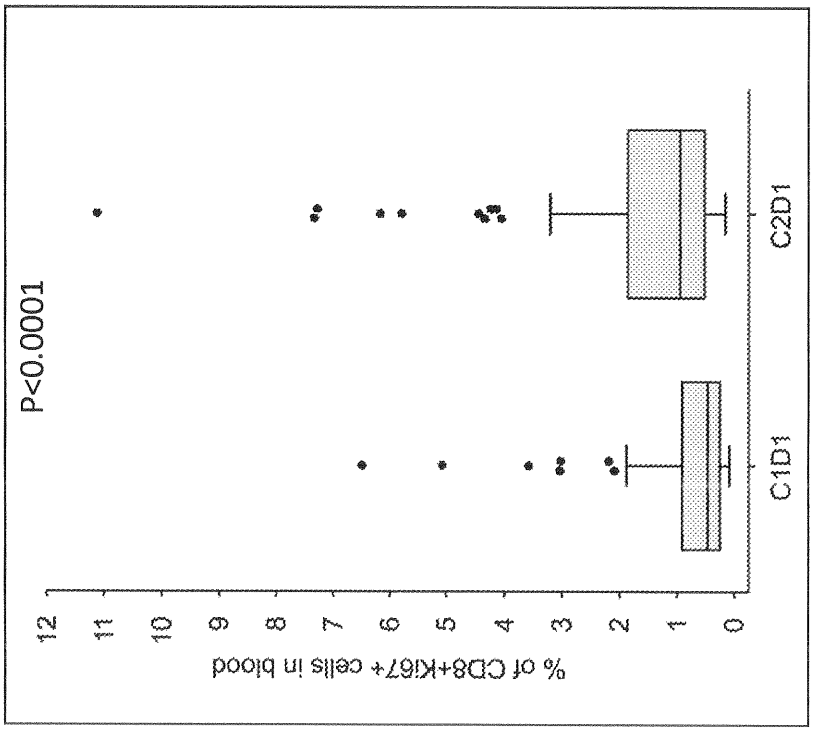

P<0.0001
% of CD8+Ki67+ cells in blood
0
1
2
3
4
5
6
7
8
9
10
11
12
C1D1
C2D1

Figure 10

(b)

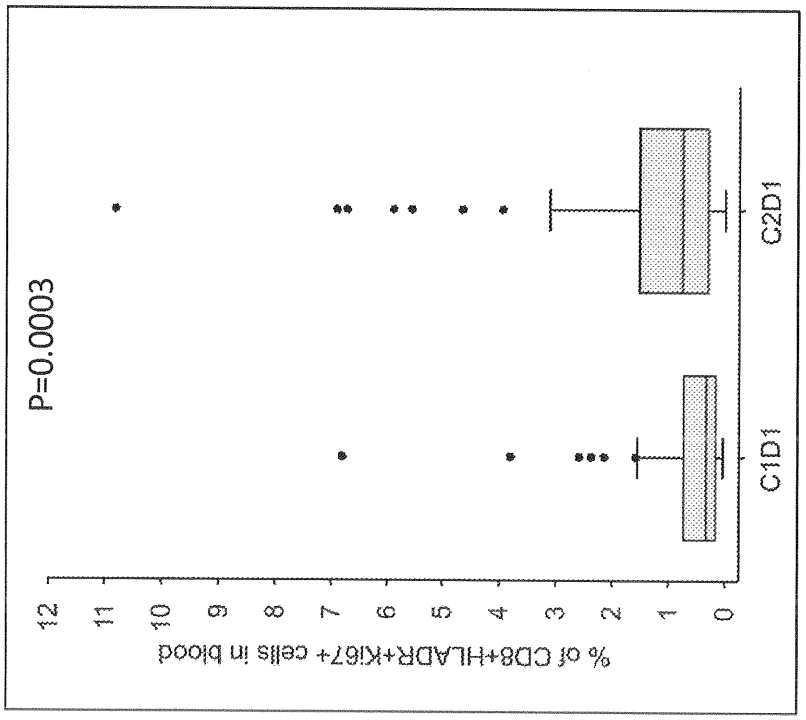

P=0.0003
% of CD8+HLADR+Ki67+ cells in blood
0
1
2
3
4
5
6
7
8
9
10
11
12
C1D1
C2D1

Figure 11

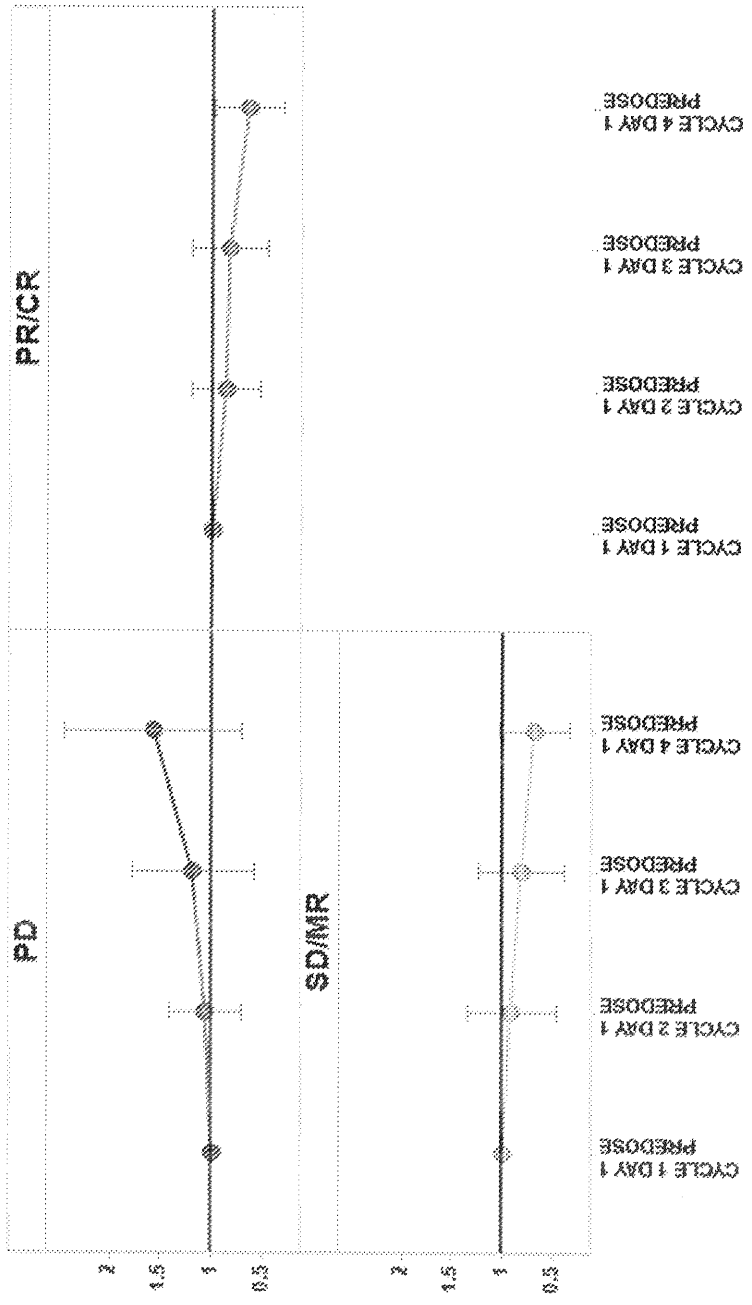

PR/CR
PD
SD/MR
CYCLE 1 DAY 1 PREDOSE
CYCLE 2 DAY 1 PREDOSE
CYCLE 3 DAY 1 PREDOSE
CYCLE 4 DAY 1 PREDOSE
2
1.5
1
0.5

Figure 12

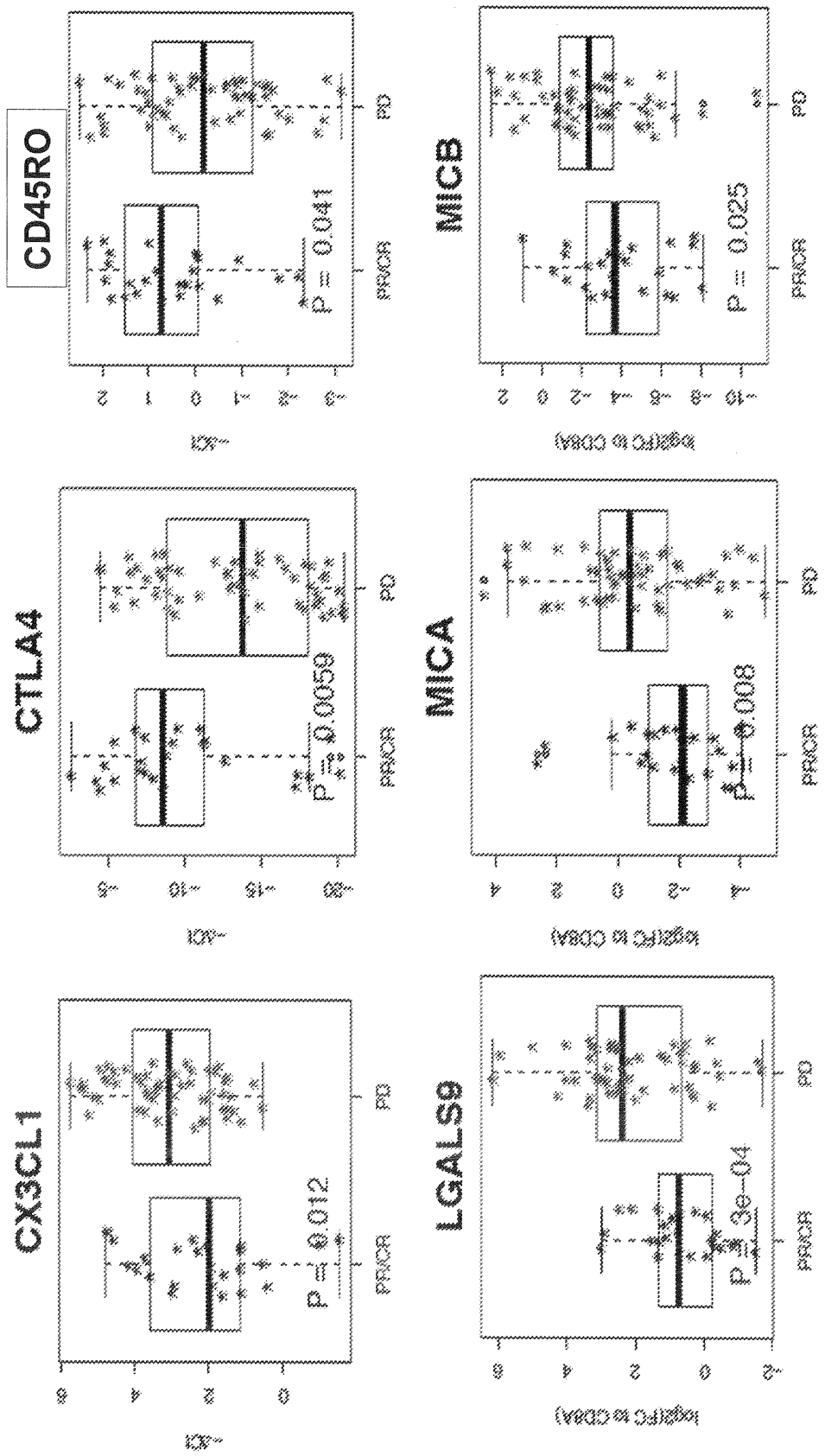

CD45RO
P = 0.041
PRIOR
PD
MICB
P = 0.025
CTLA4
P = 0.0059
MICA
P = 0.008
CX3CL1
P = 0.012
LGALS9
P = 3e−04

Figure 13

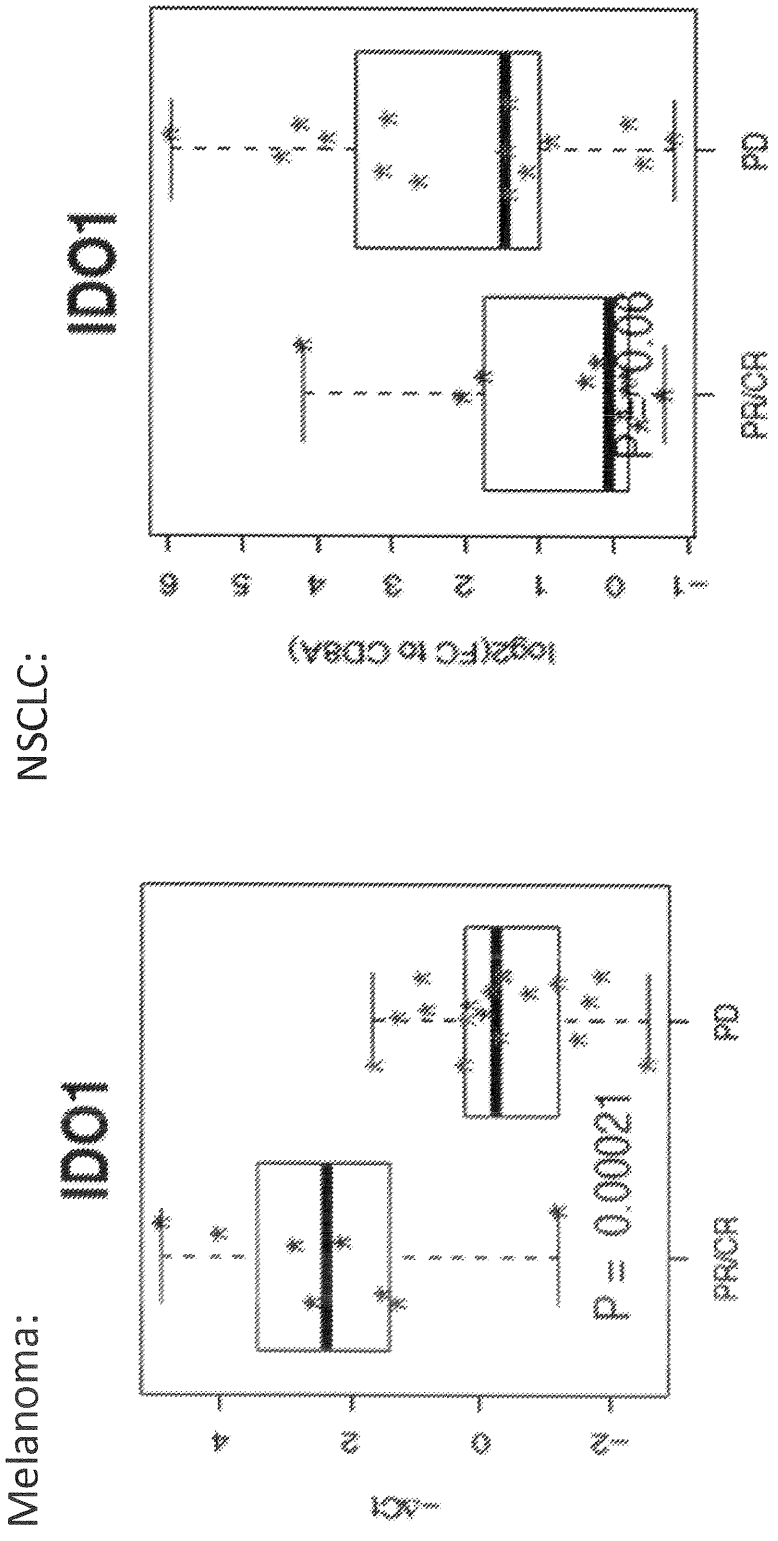
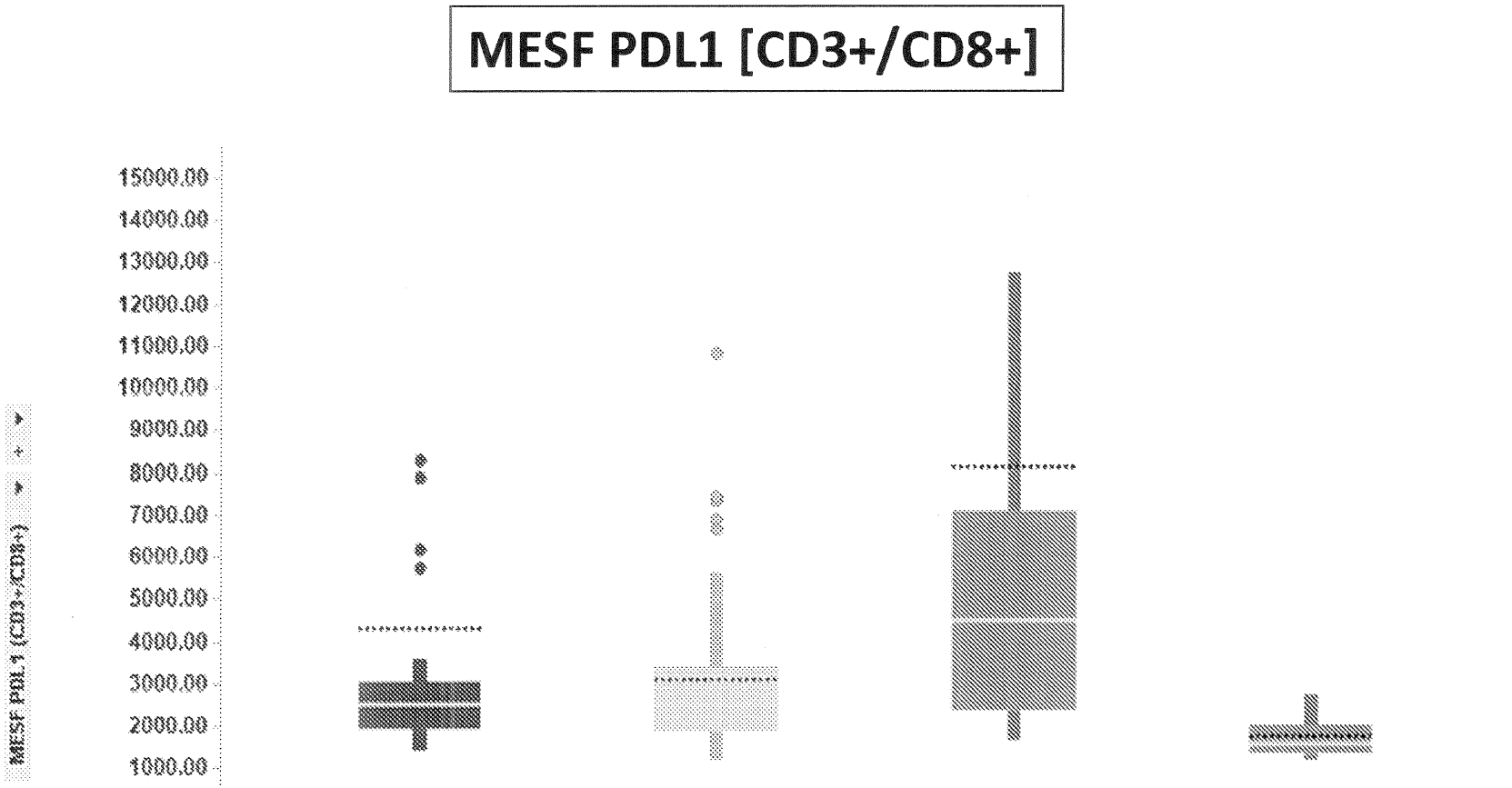
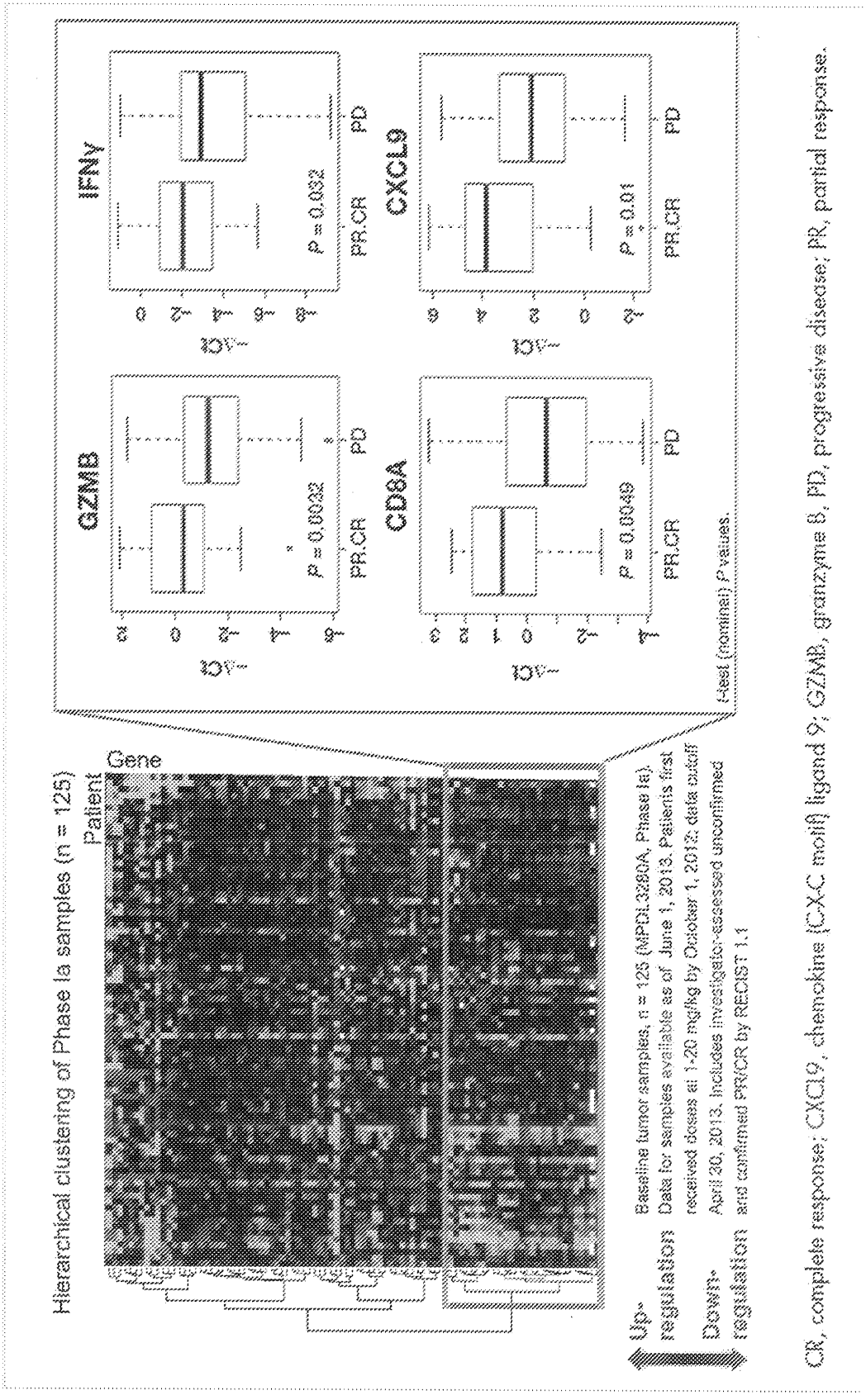

NSCLC:
IDO1
log2(FC to CDEA)
6
5
4
3
2
1
0
-1
P = 0.08
PR/CR
PD
Melanoma:
IDO1
log2(FC to CDEA)
4
2
0
-2
P = 0.00021
PR/CR
PD

Figure 14



	MESF PDL1 (CD3+/CD8+)			
	PD	SD	PR	Healthy
Count	35	46	17	11
Avg	4280.17	3099.54	8105.41	1745.45
Median	2500	2518.5	4467	1558
Outliers	6	5	1	0

Figure 15



CR, complete response; CXCL9, chemokine (C-X-C motif) ligand 9; GZMB, granzyme B, PD, progressive disease; PR, partial response.

Figure 16

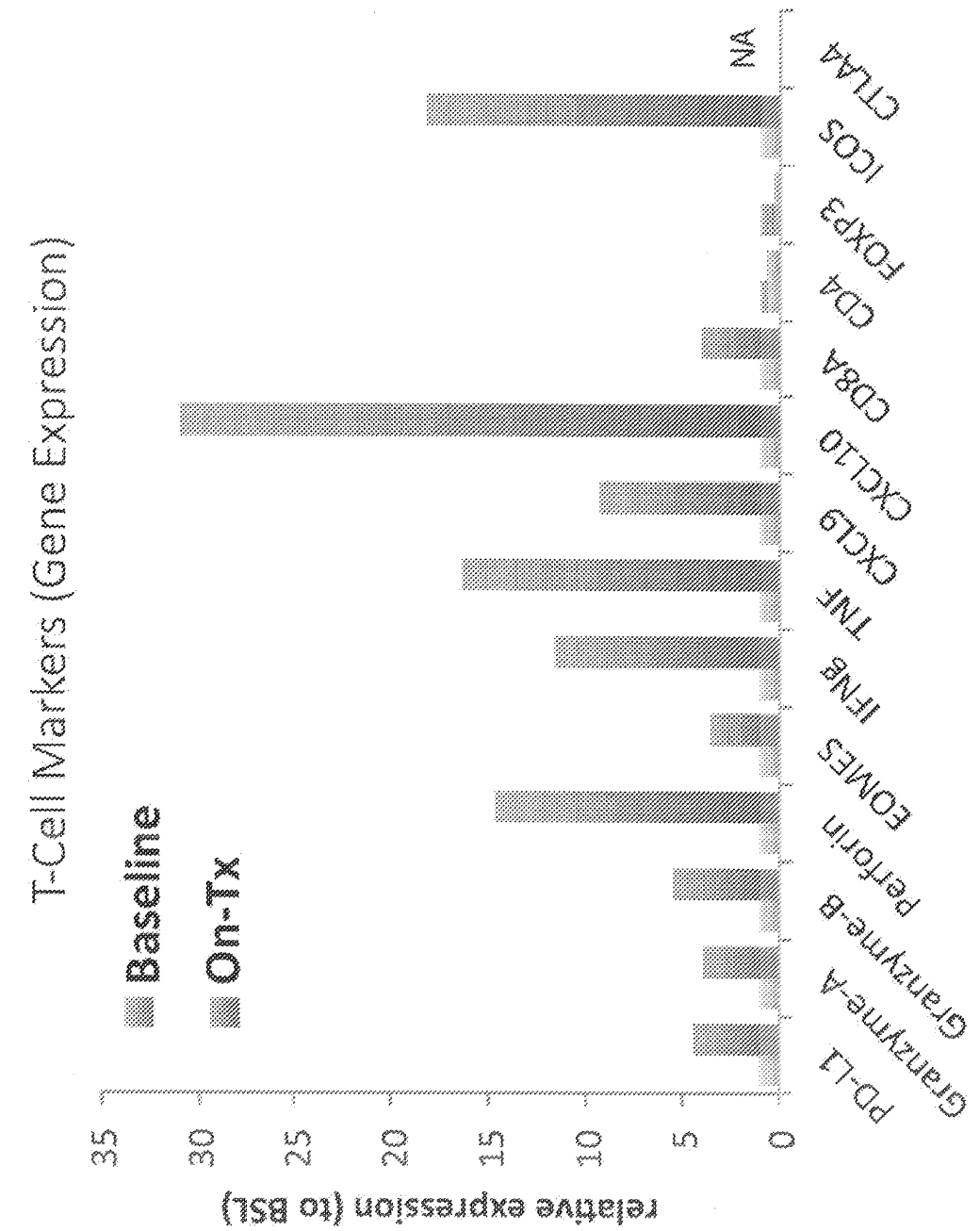

T-Cell Markers (Gene Expression)
Baseline
On-Tx
relative expression (to BSL)
0
5
10
15
20
25
30
35
PD-L1
Granzyme-A
Granzyme-B
perforin
EOMES
IFNE
TNF
CXCL9
CXCL10
CD8A
CD4
FOXP3
ICOS
CTLA4
NA

Figure 17

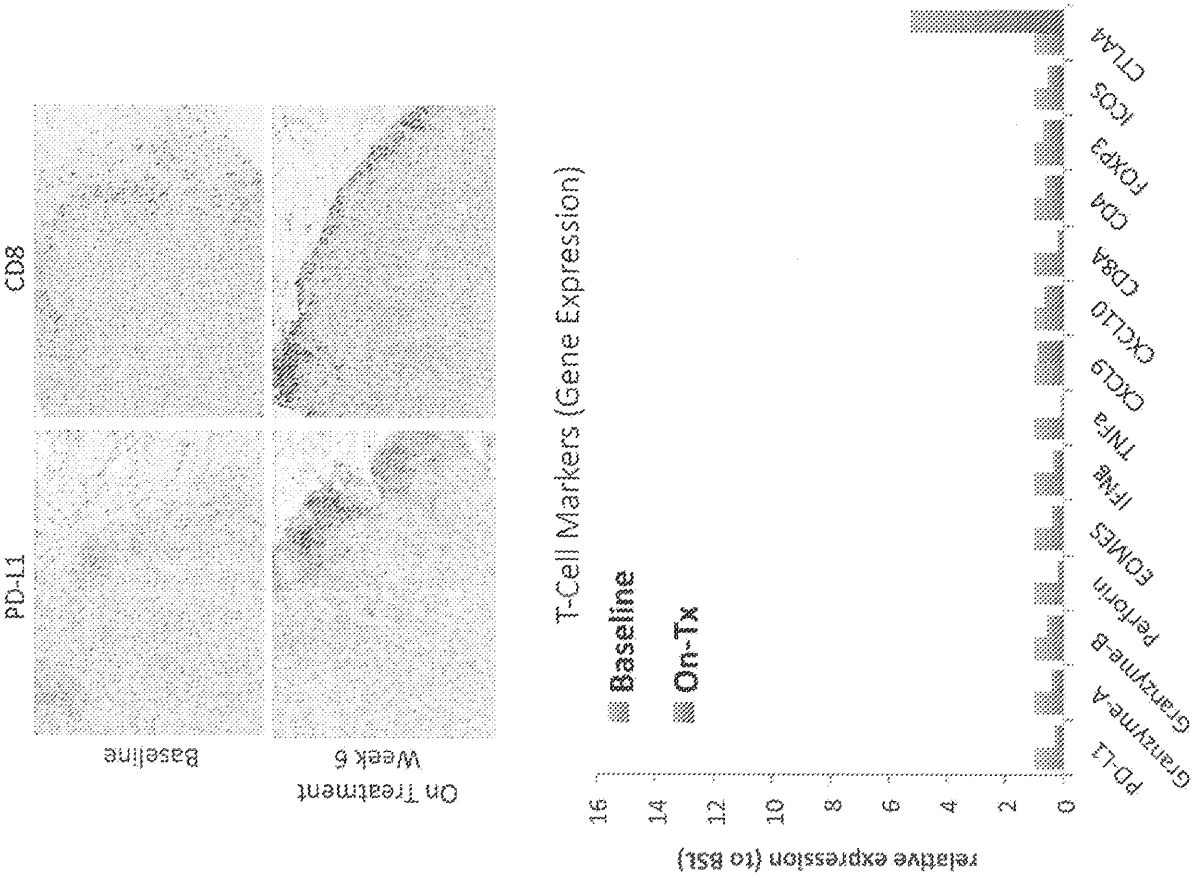
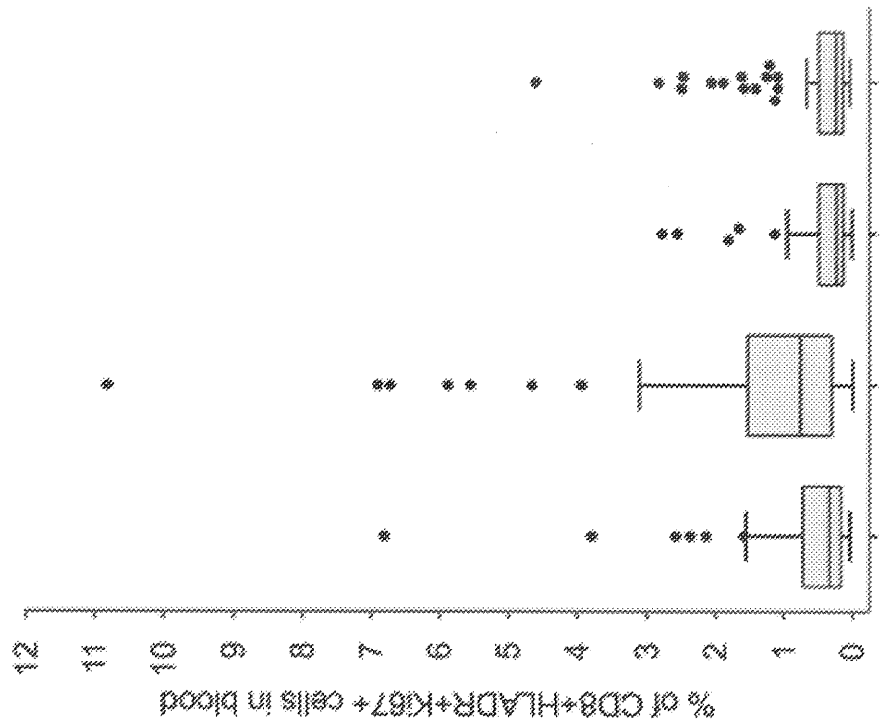

PD-L1
CD8
Baseline
On Treatment Week 6
T-Cell Markers (Gene Expression)
Baseline
On-Tx
relative expression (to BSL)
0
2
4
6
8
10
12
14
16
PD-L1
Granzyme-A
Granzyme-B
Perforin
EOMES
IFNg
TNFa
CXCL9
CXCL10
CD8A
CD4
FOXP3
ICOS
CTLA4

Figure 18



$P < 0.0001$ for C2D1 vs baseline. For patients who had C1D1 data, C1D1 data were used for baseline. For patients who did not have C1D1 data, screening data were used for baseline.

Figure 19

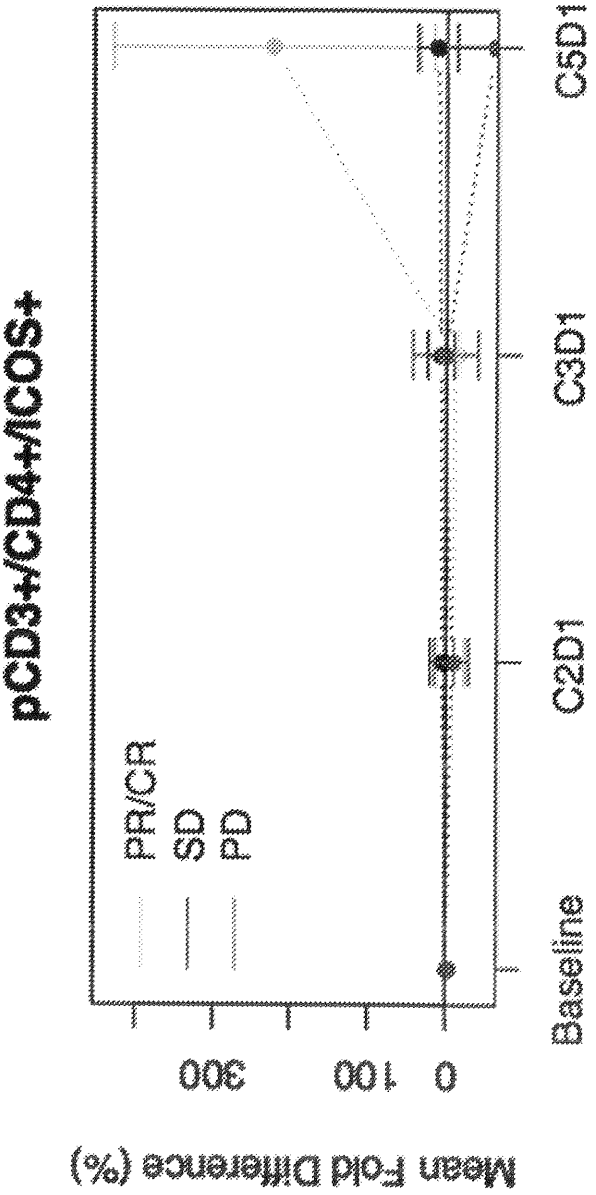

pCD3+/CD4+/ICOS+
PR/CR
SD
PD
Baseline
C2D1
C3D1
C5D1
0
100
300
Mean Fold Difference (%)

Figure 20

Summary of Responses to MPDL3280A in Paired Biopsies

Maximum SLD Decrease[a]	Increase in Tumor Cell PD-L1,[b] n/N (%)	Increase in Immune Cell PD-L1,[b] n/N (%)
> 30% reduction	4/6 (66%)	5/6 (83%)
0%-30% reduction	4/9 (44%)	2/9 (22%)
0%-20% increase	2/10 (20%)	2/10 (20%)
> 20% increase	0/4 (0%)	1/4 (25%)
Unevaluable SLD (due to tumor excision[c])	1/1 (100%)	1/1 (100%)

[a] At any time point in study.
[b] Number of patients with increased PD-L1 expression in tumor or tumor infiltrating immune cells following treatment with MPDL3280A; increase in PD-L1 expression defined by increase of ≥ 5% PD-L1+ cells as measured by Genentech/Roche PD-L1 IHC.
[c] Excision of responding tumor for purposes of biomarker analysis rendered the patient unevaluable for maximum SLD change.

Figure 21

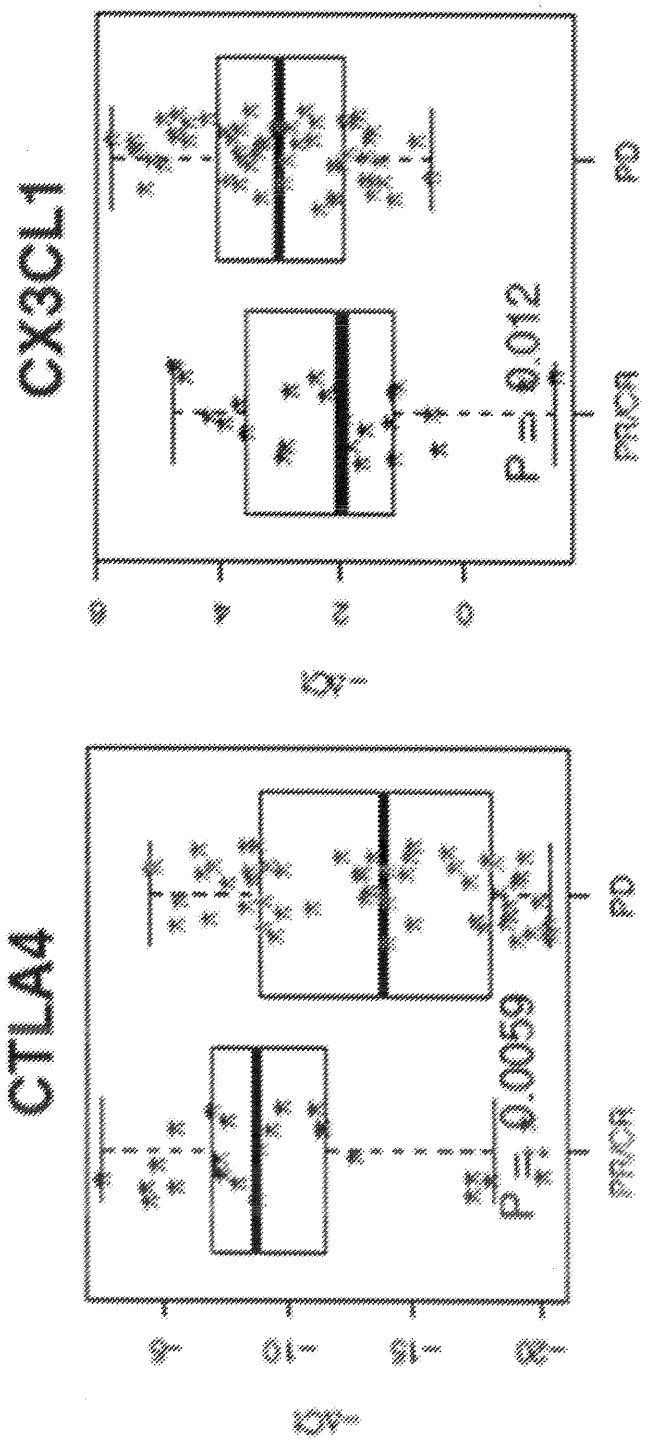


Figure 22

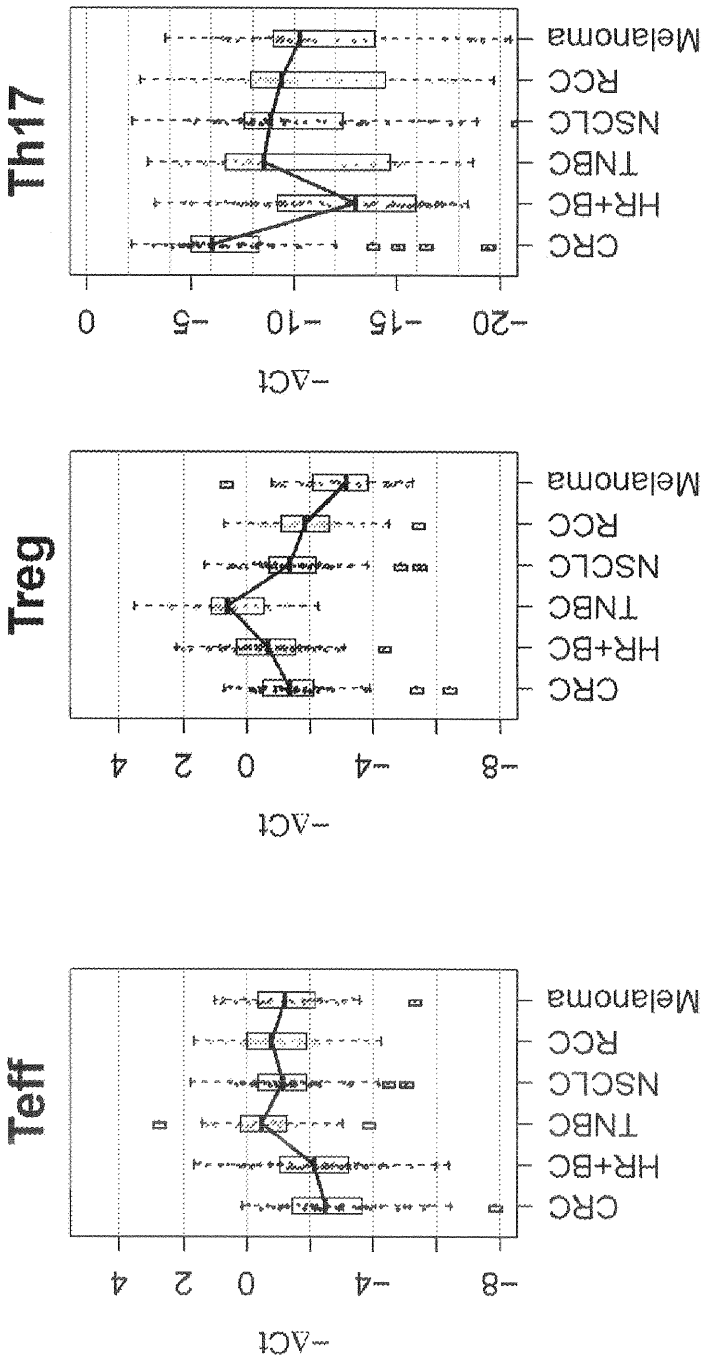
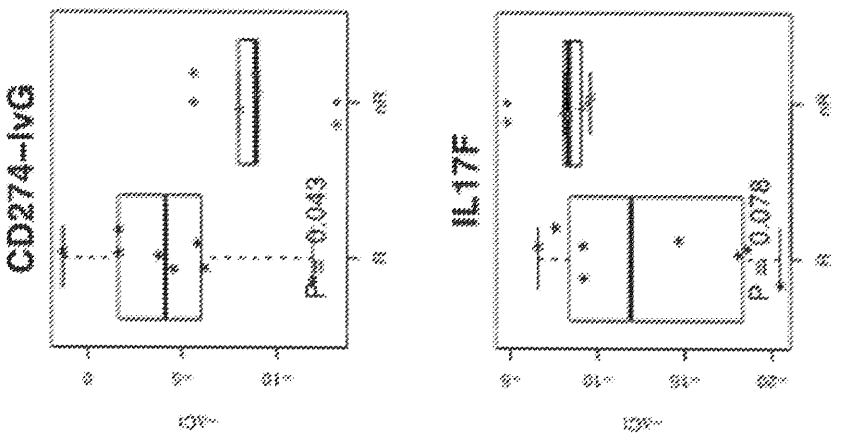
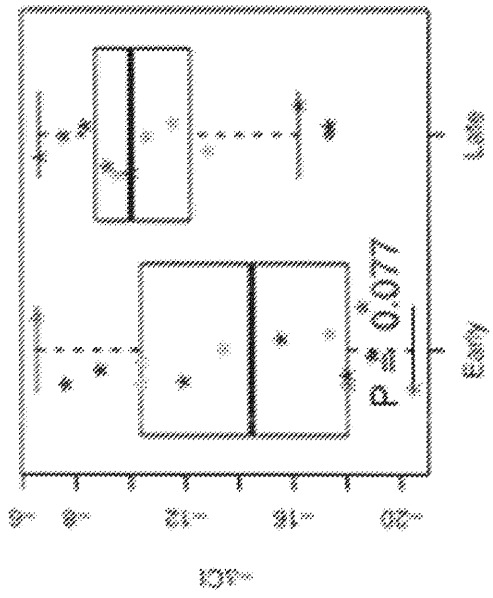

Th17
Treg
Teff
CRC
HR+BC
TNBC
NSCLC
RCC
Melanoma
−ΔCt
0
−5
−10
−15
−20
2
4
−4
−8

Figure 23



(8 Rs vs 5 nRs)

Figure 24



(14 Early Rs, 11 Late Rs)

Figure 25

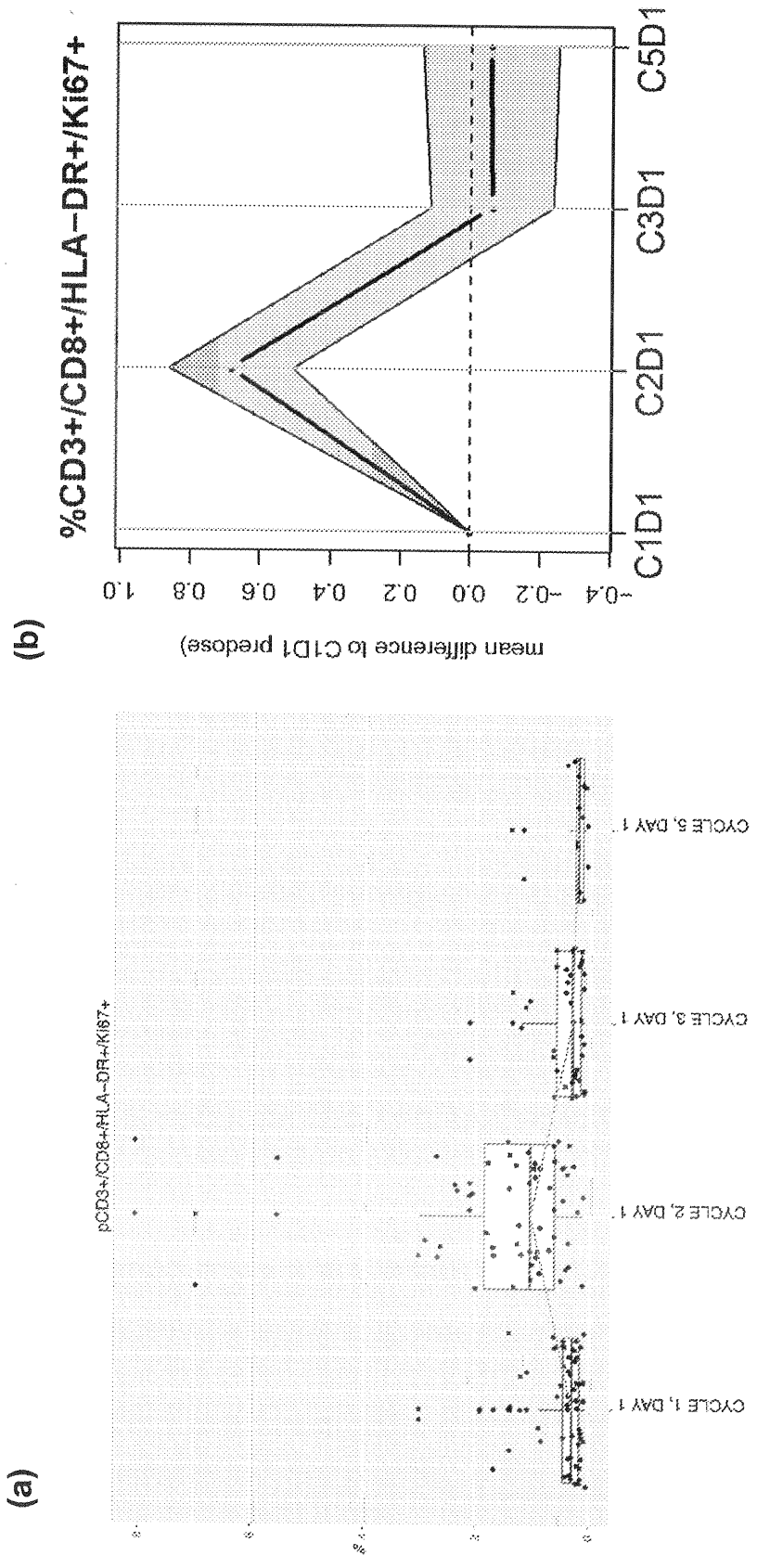
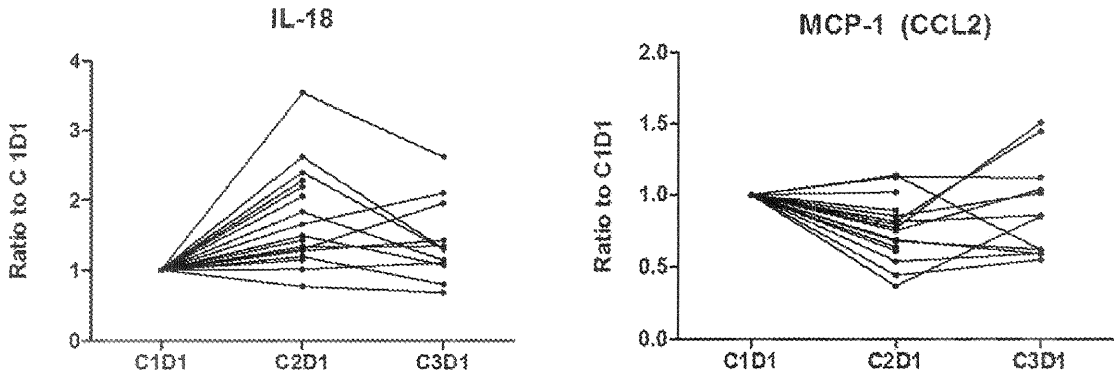
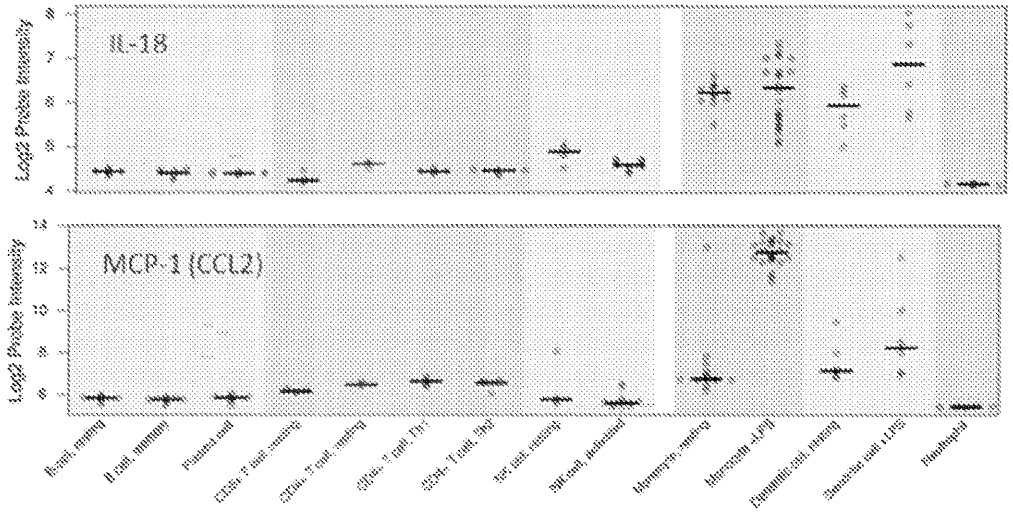

(a)
pCD3+/CD8+/HLA−DR+/Ki67+
CYCLE 1, DAY 1
CYCLE 2, DAY 1
CYCLE 3, DAY 1
CYCLE 5, DAY 1
(b)
%CD3+/CD8+/HLA−DR+/Ki67+
mean difference to C1D1 predose)
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
1.0
C1D1
C2D1
C3D1
C5D1

Figure 26



IL-18 and MCP-1 are predominantly expressed in monocytes



Baseline plasma MCP-1 is lower in patients with PR

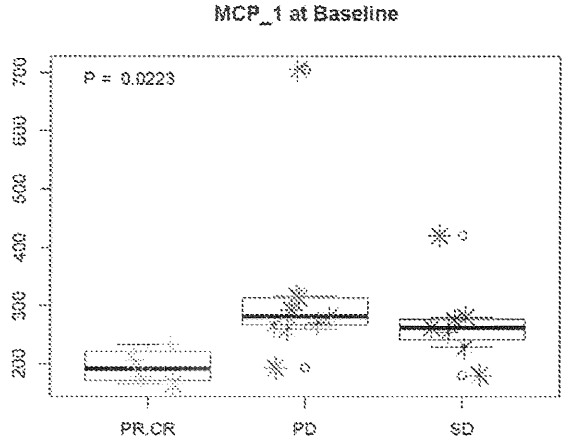


Figure 27

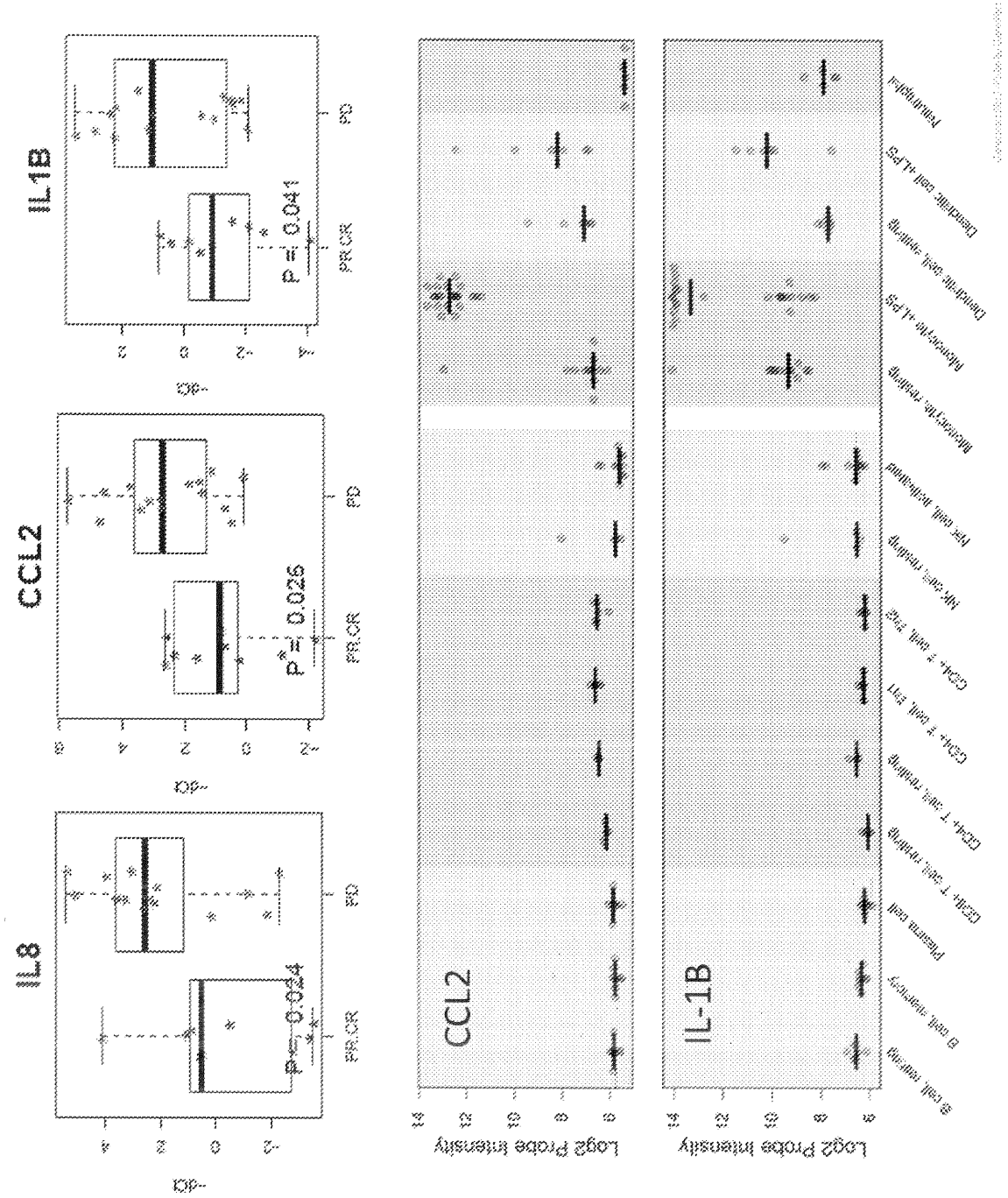

IL8
CCL2
IL1B
P = 0.024
P = 0.026
P = 0.041
PR.OR
PD
CCL2
IL-1B
Log2 Probe intensity
B cell memory
B cell naive
Plasma cell
CD4+ T cell memory
CD4+ T cell naive
CD4+ γ δ T cell
CD4+ γ δ cell γ9δ2
NK cell resting
NK cell activated
Monocyte/Mac resting
Monocyte/Mac aLPS
Dendritic cell resting
Dendritic cell aLPS
Neutrophil

Figure 28

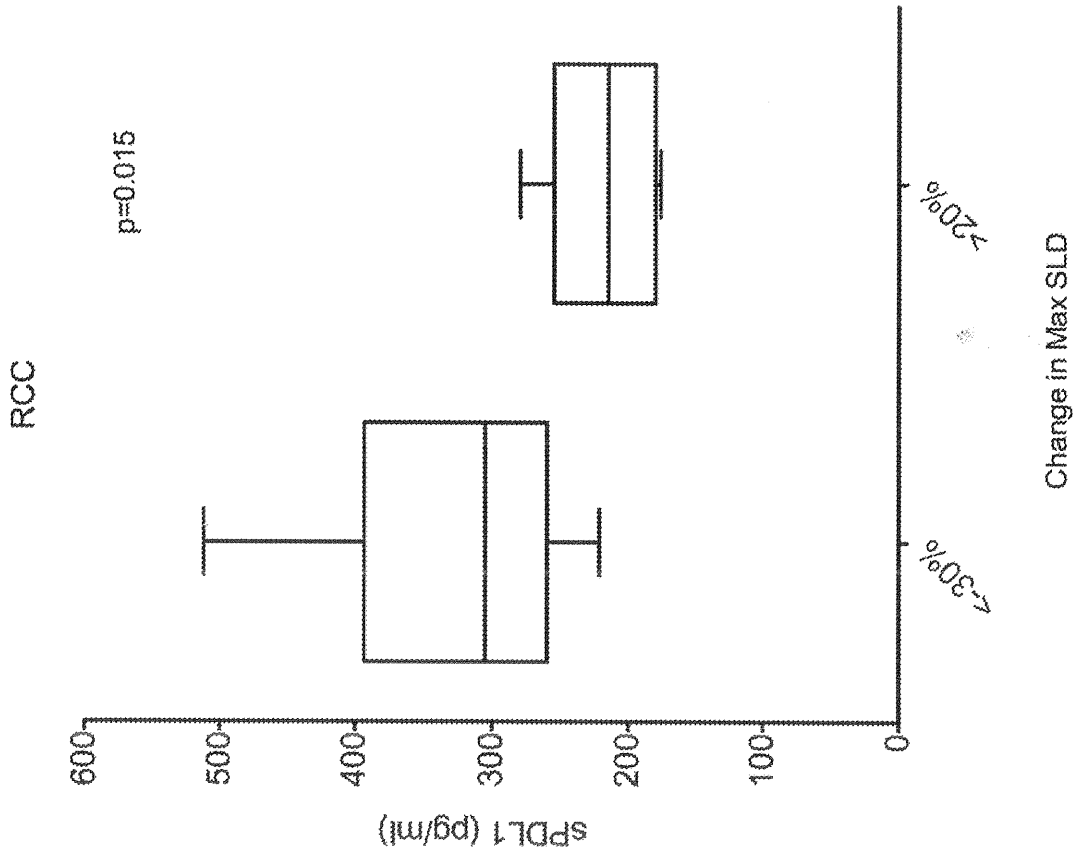
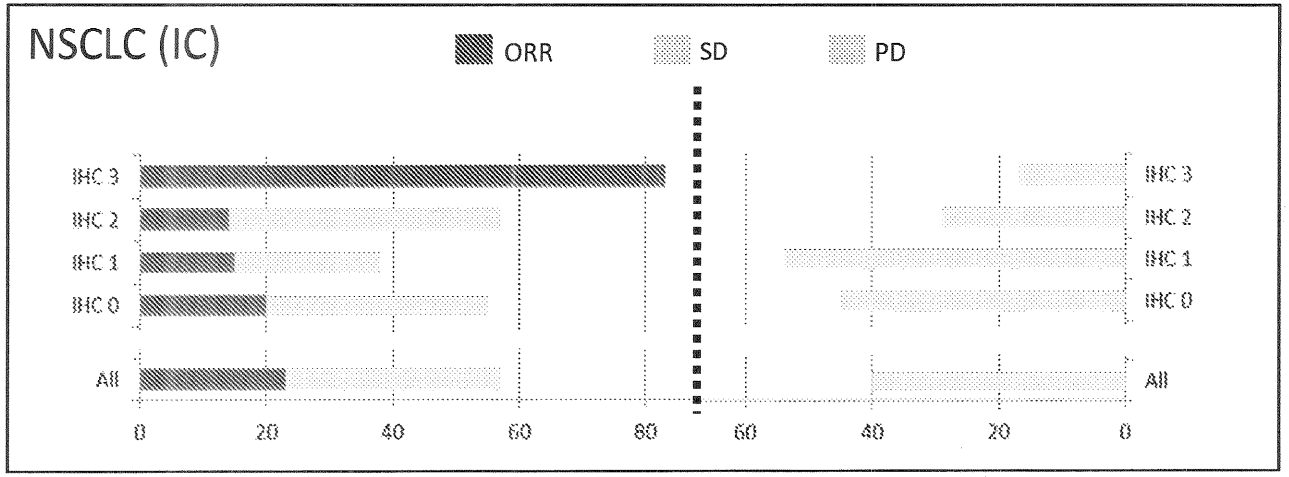

RCC
p=0.015
sPDL1 (pg/ml)
600
500
400
300
200
100
0
<-30%
>-20%
Change in Max SLD

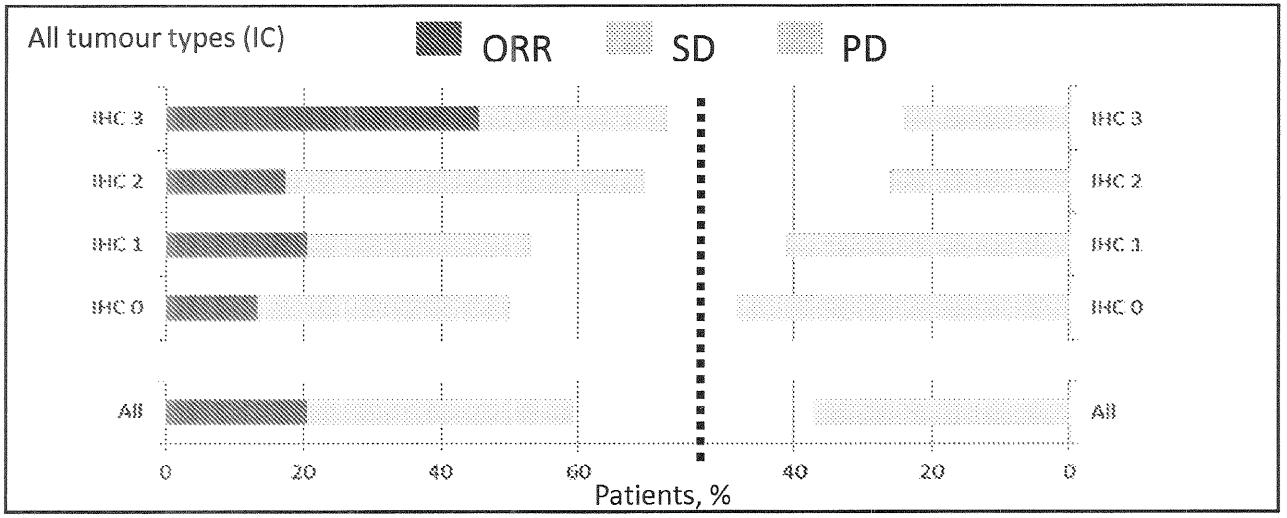
Figure 29

(a)



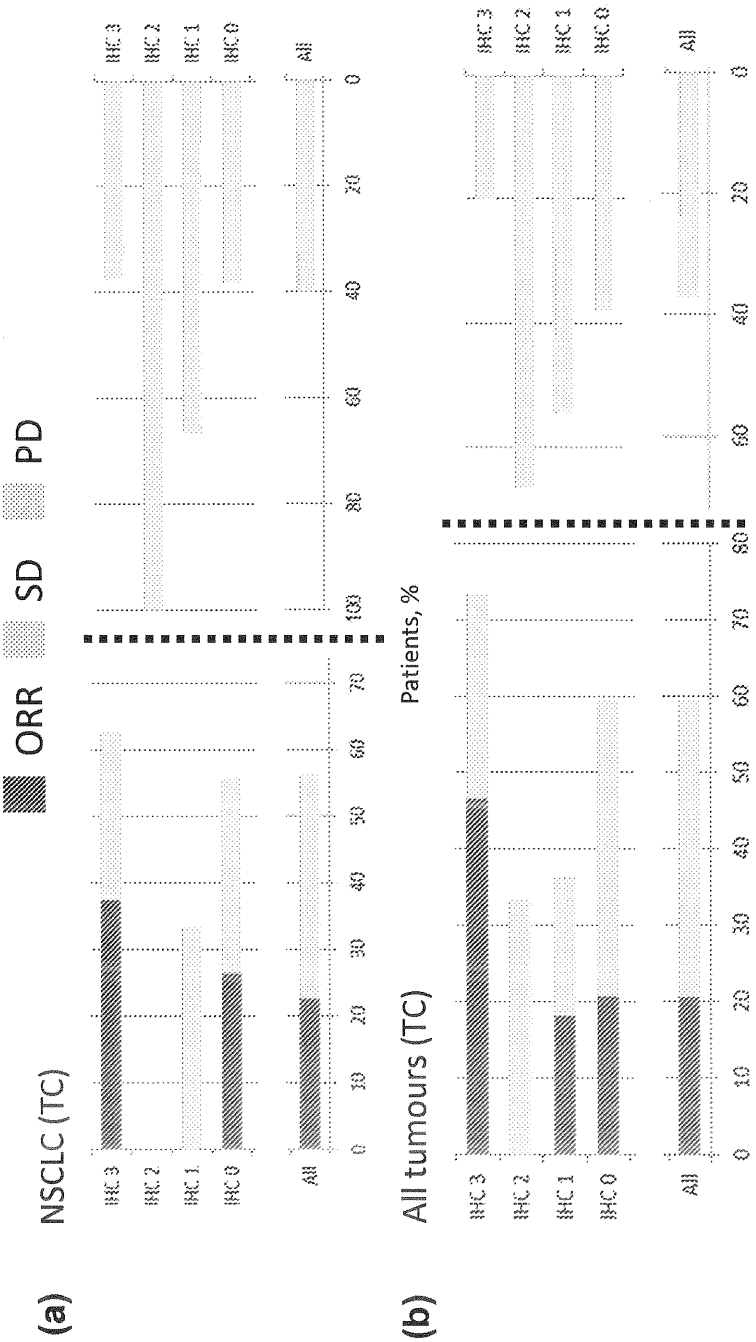
IHC, immunohistochemistry; ORR, overall response rate; PD, progressive disease; SD, stable disease.
Patient's tumor assessment not done: 0% IHC 0, 8% IHC 1, 14% IHC 2, 0% IHC 3, 0% unknown, 3% All.

(b)



IHC, immunohistochemistry; ORR, overall response rate; PD, progressive disease; SD, stable disease.
Patient's tumor assessment not done: 1.6% IHC 0, 5.9% IHC 1, 4.3% IHC 2, 3% IHC 3, 4% unknown, 3.4% All

Figure 30



NSCLC: IHC 3, n=8; IHC 2, n=1; IHC 1, n=3; IHC 0, n=34; All, n=53.
All tumours: IHC 3, n=15; IHC 2, n=3; IHC 1, n=11; IHC 0, n=121; All, n=175.