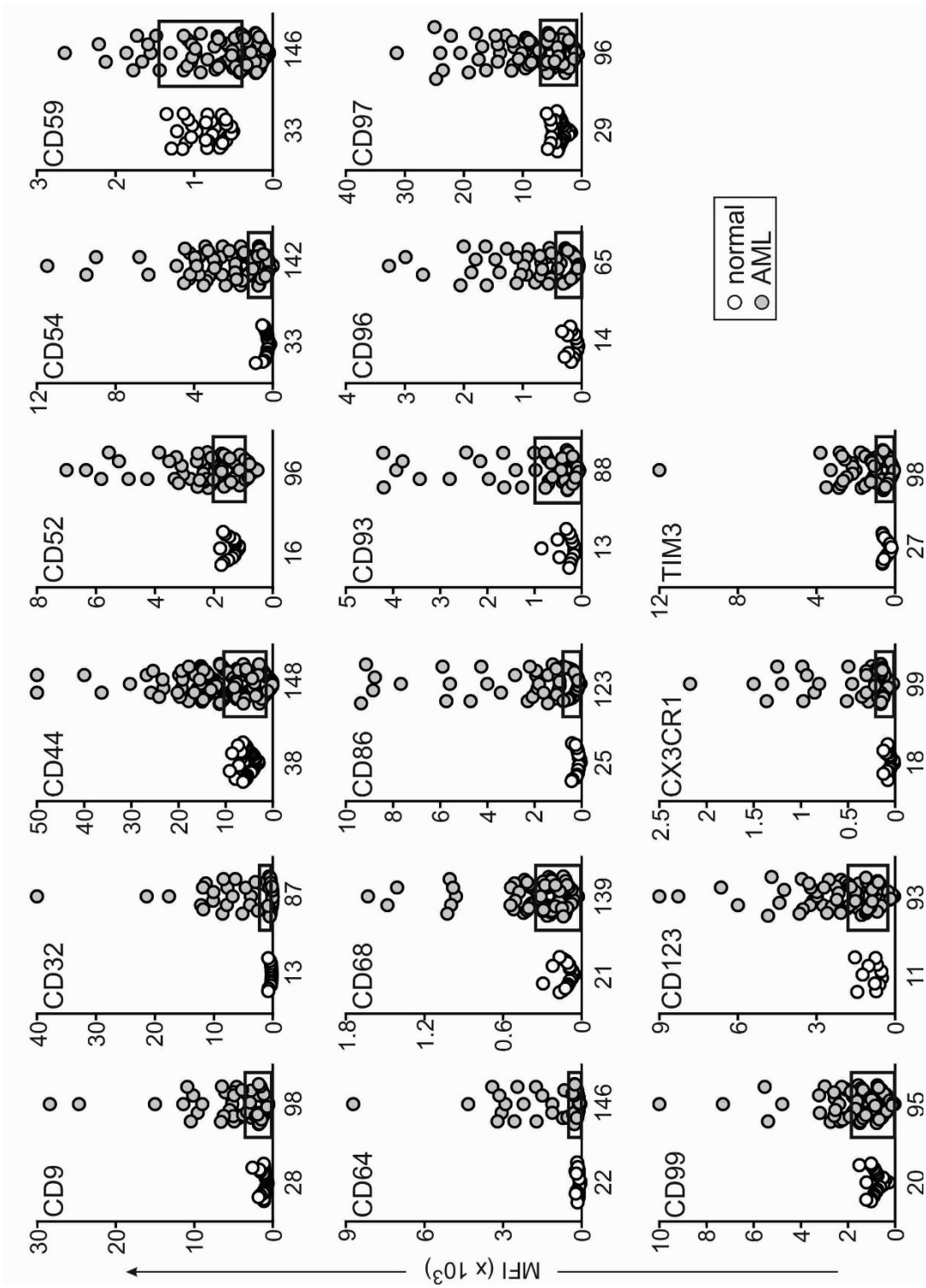
CD9
CD32
CD44
CD52
CD54
CD59
CD64
CD68
CD86
CD93
CD96
CD97
CD99
CD123
CX3CR1
TIM3
normal
AML
MFI (× 10³)

FIG. 1

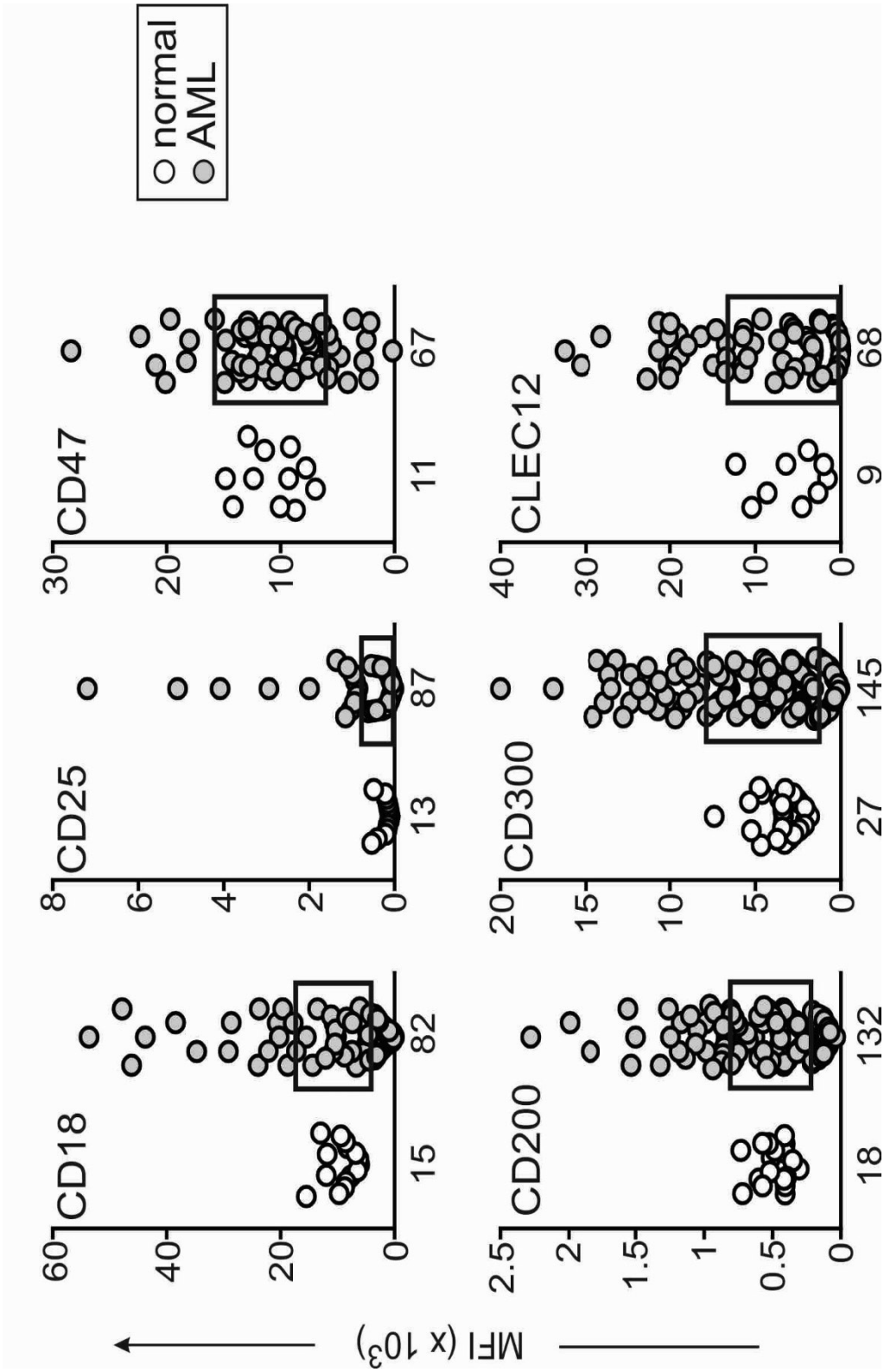
normal
AML
CD18
CD25
CD47
CD200
CD300
CLEC12
MFI (x 10³)
60
40
20
0
15
82
8
6
4
2
0
13
87
30
20
10
0
11
67
2.5
2
1.5
1
0.5
0
18
132
20
15
10
5
0
27
145
40
30
20
10
0
9
68

FIG. 2

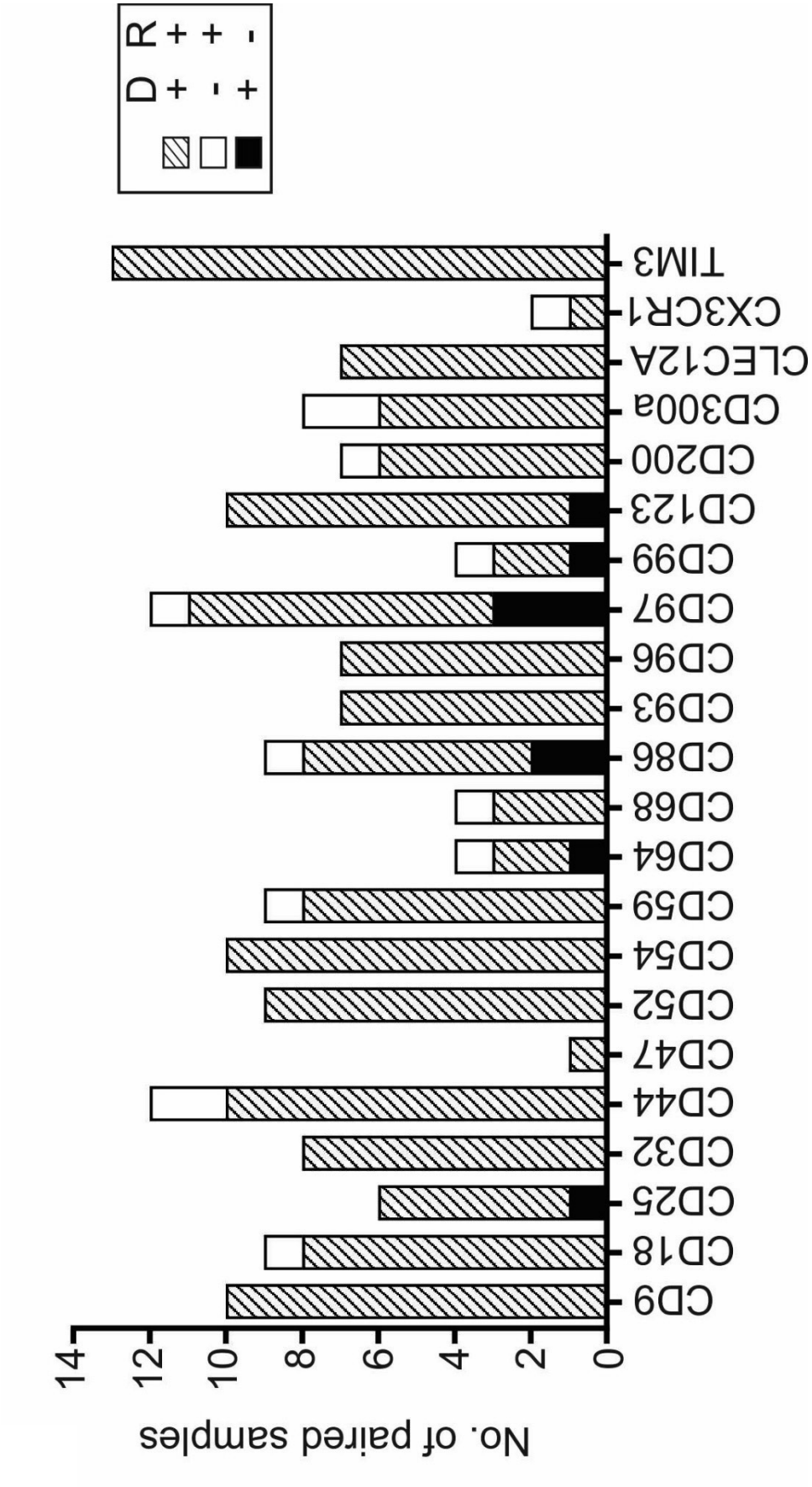
No. of paired samples
0
2
4
6
8
10
12
14
CD9
CD18
CD25
CD32
CD44
CD47
CD52
CD54
CD59
CD64
CD68
CD86
CD93
CD96
CD97
CD99
CD123
CD200
CD300a
CLEC12A
CX3CR1
TIM3
D+ + -
R+ - +

FIG. 3A

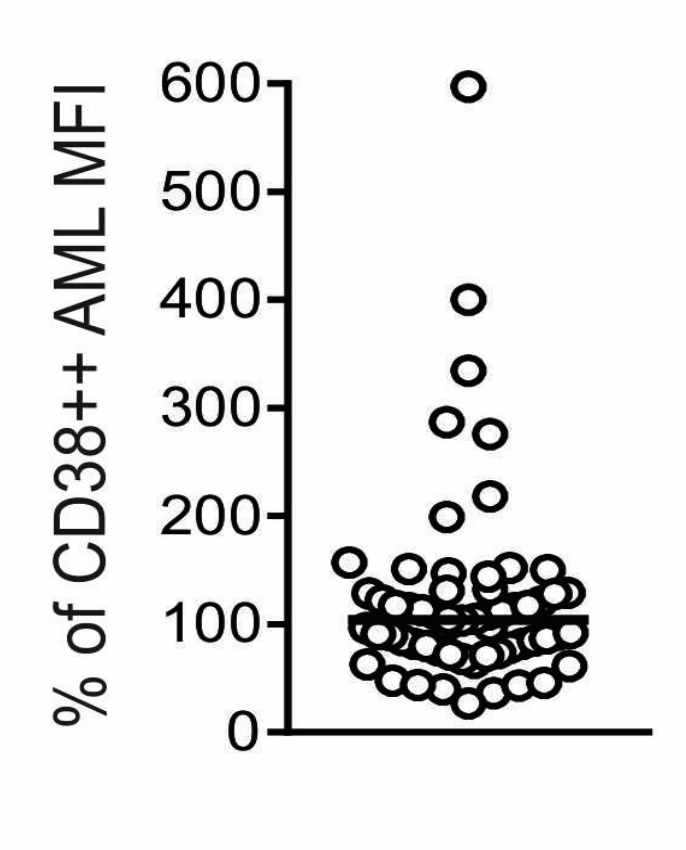

FIG. 3B

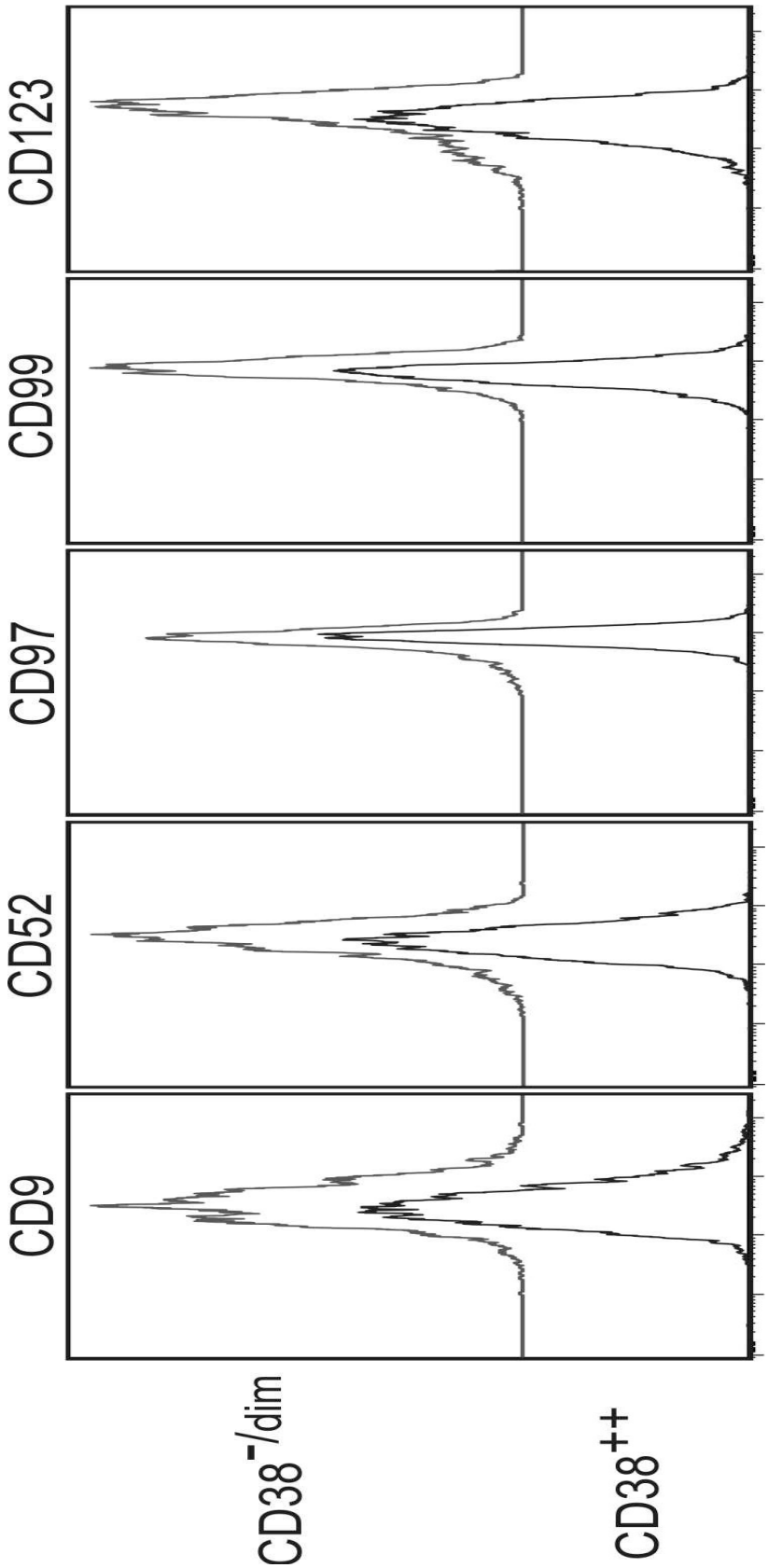

FIG. 3C

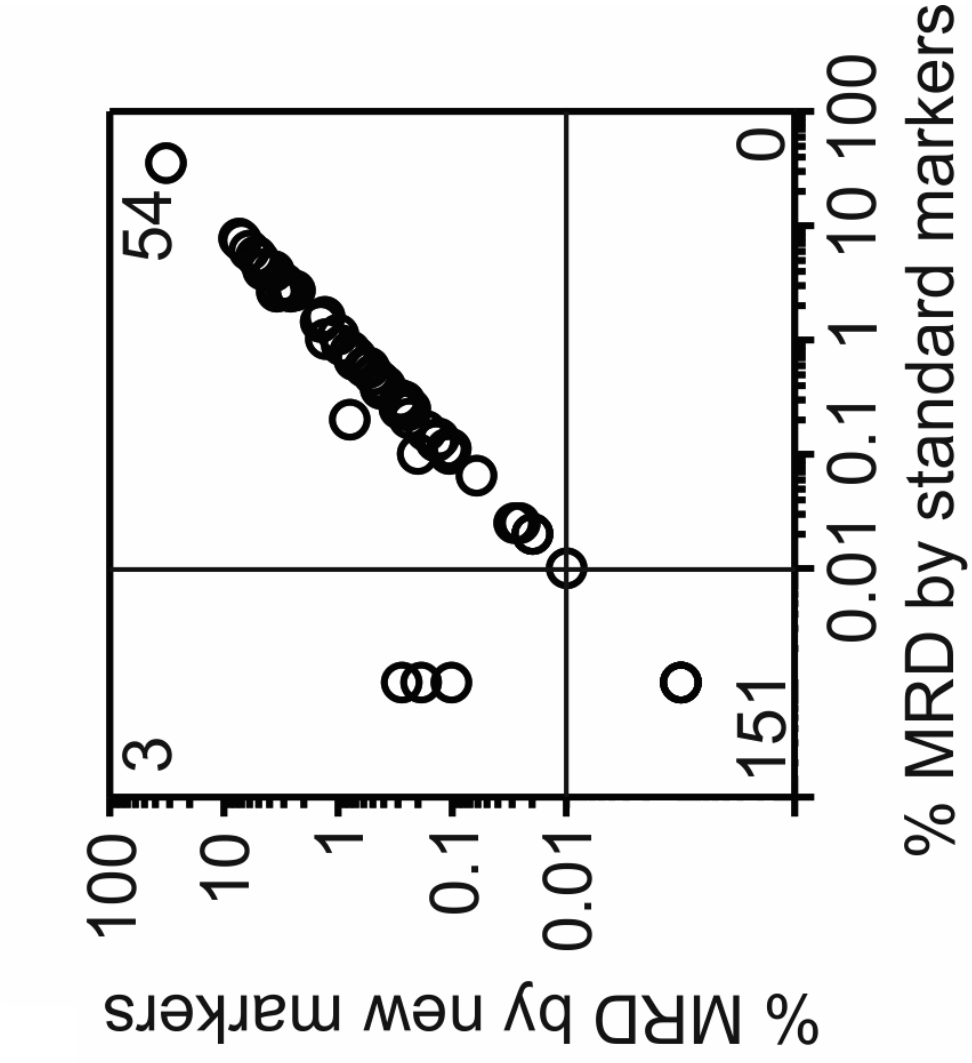
% MRD by new markers
100
10
1
0.1
0.01
3
54
151
0
0.01 0.1 1 10 100
% MRD by standard markers

FIG. 4A

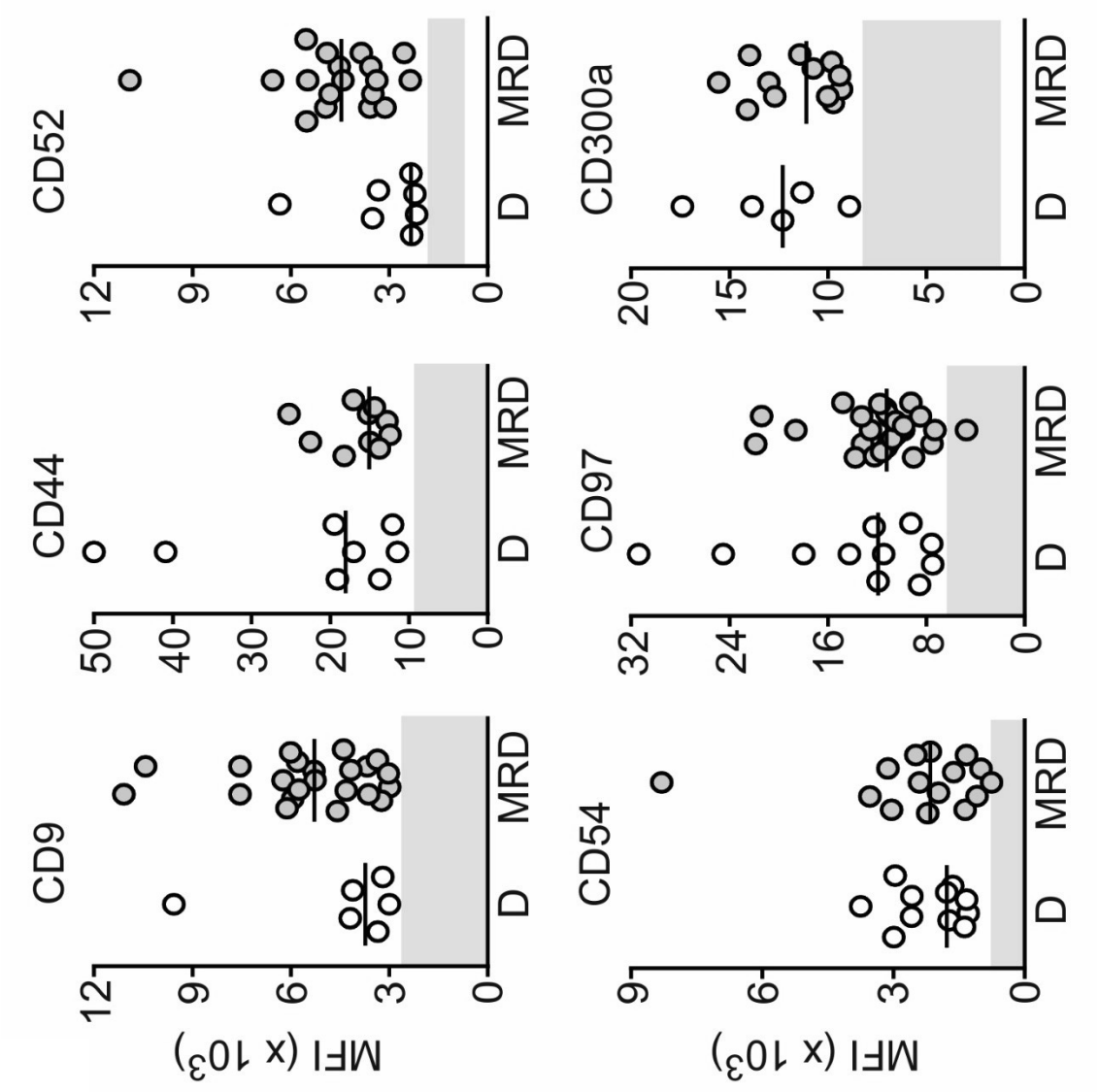

FIG. 4B

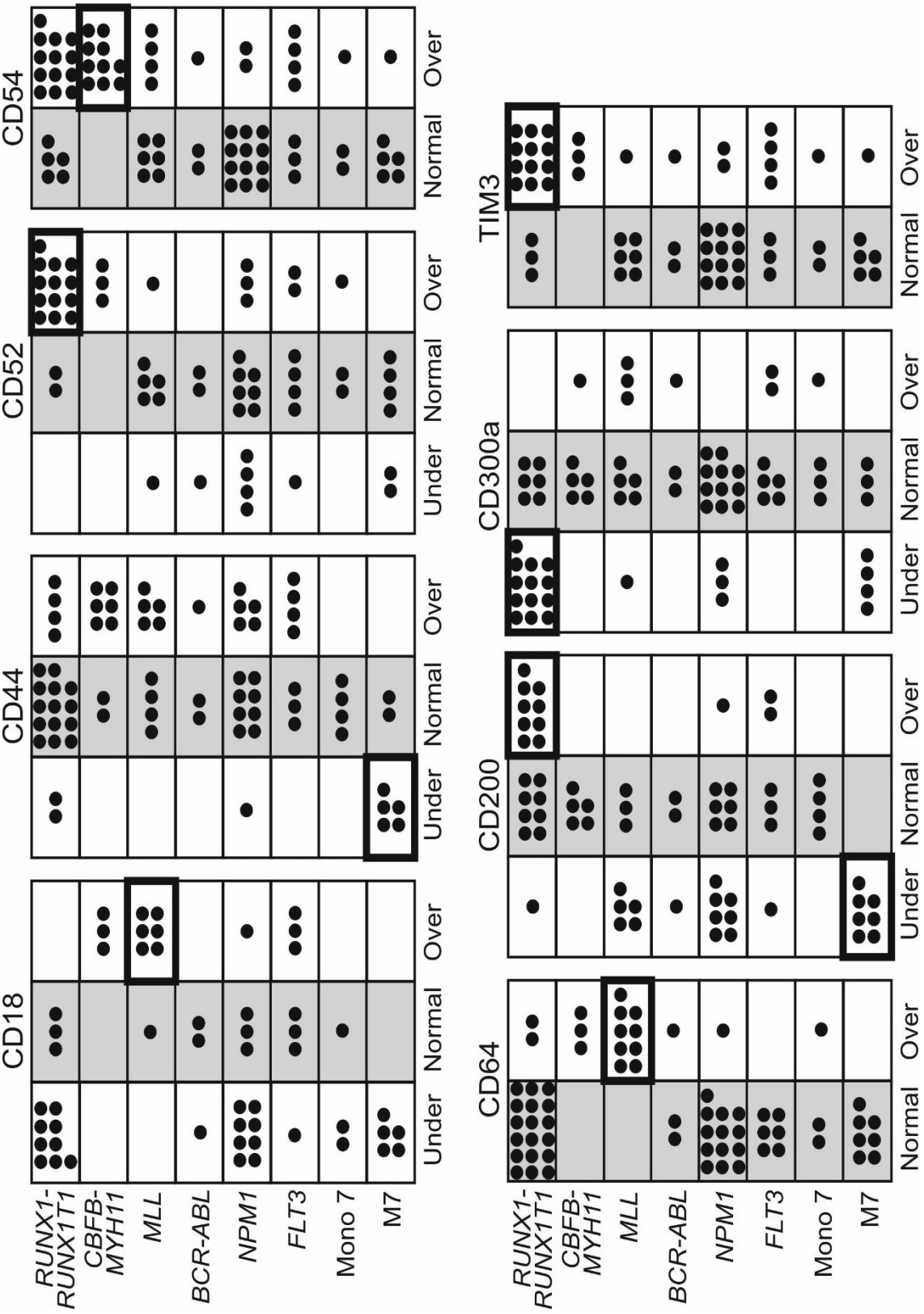
CD18
CD44
CD52
CD54
CD64
CD200
CD300a
TIM3
RUNX1-RUNX1T1
CBFB-MYH11
MLL
BCR-ABL
NPM1
FLT3
Mono 7
M7
Under
Normal
Over

FIG. 5

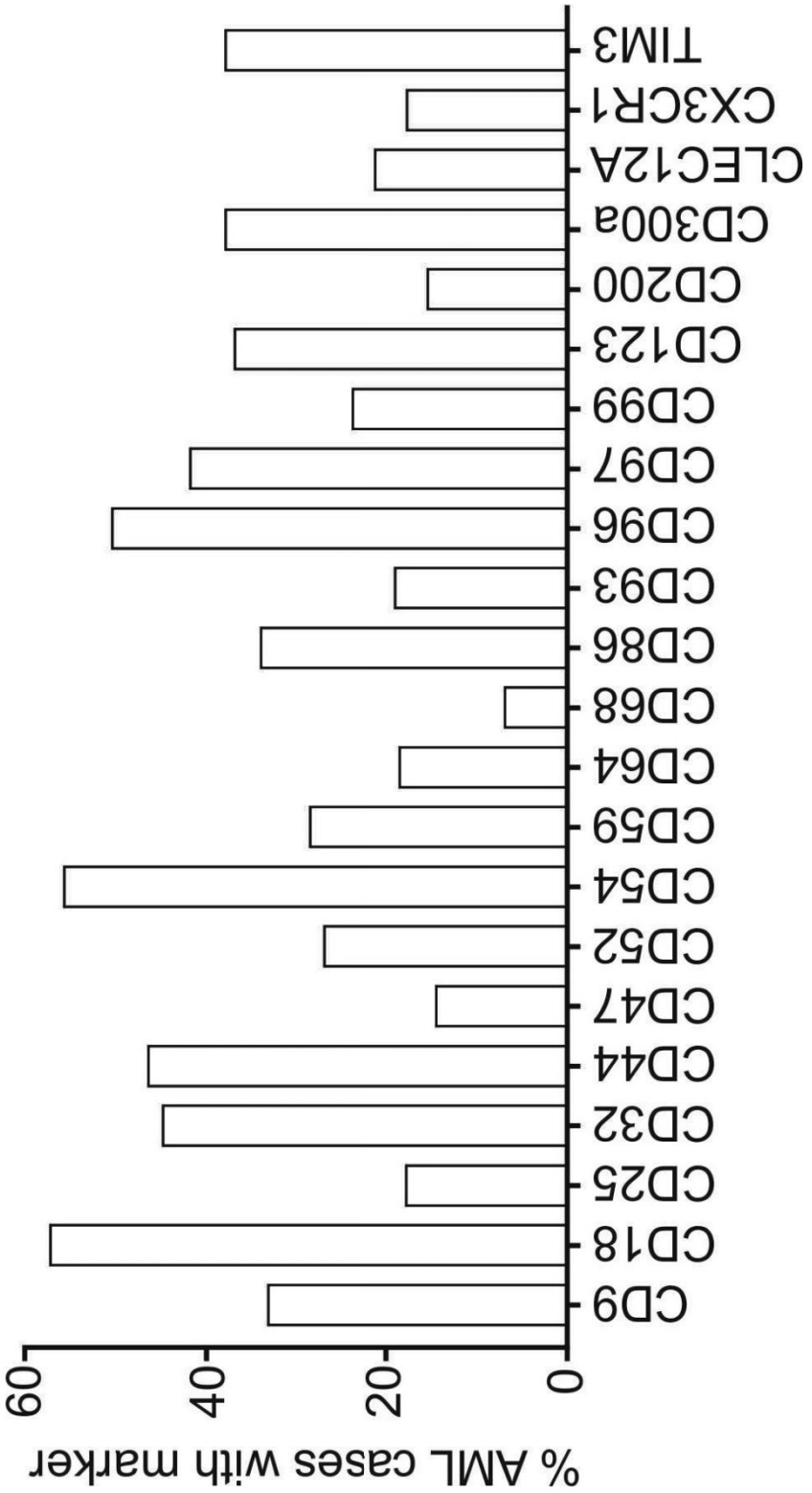
% AML cases with marker
0
20
40
60
CD9
CD18
CD25
CD32
CD44
CD47
CD52
CD54
CD59
CD64
CD68
CD86
CD93
CD96
CD97
CD99
CD123
CD200
CD300a
CLEC12A
CX3CR1
TIM3

FIG. 6A

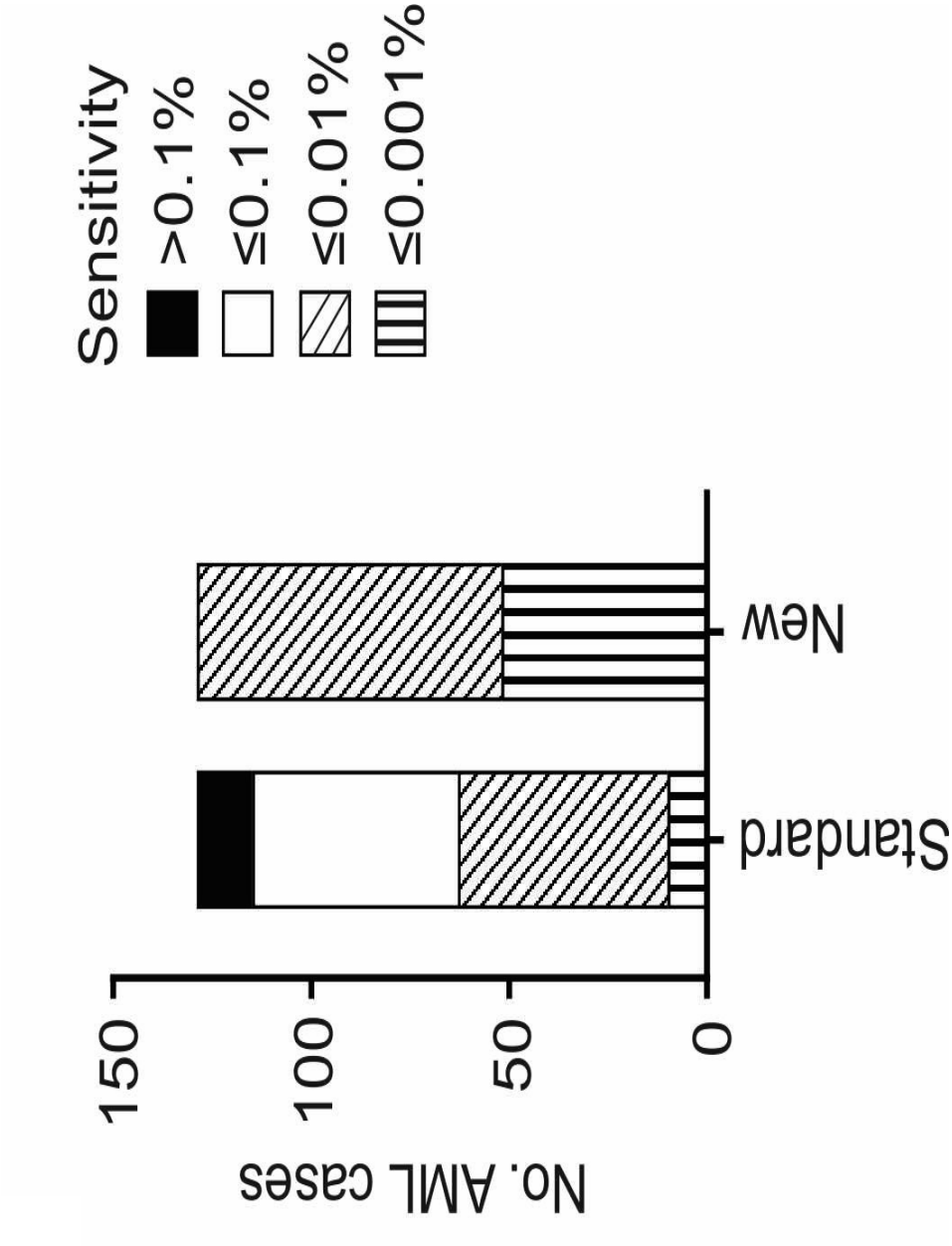
Sensitivity
>0.1%
≤0.1%
≤0.01%
≤0.001%
No. AML cases
150
100
50
0
Standard
New

FIG. 6B

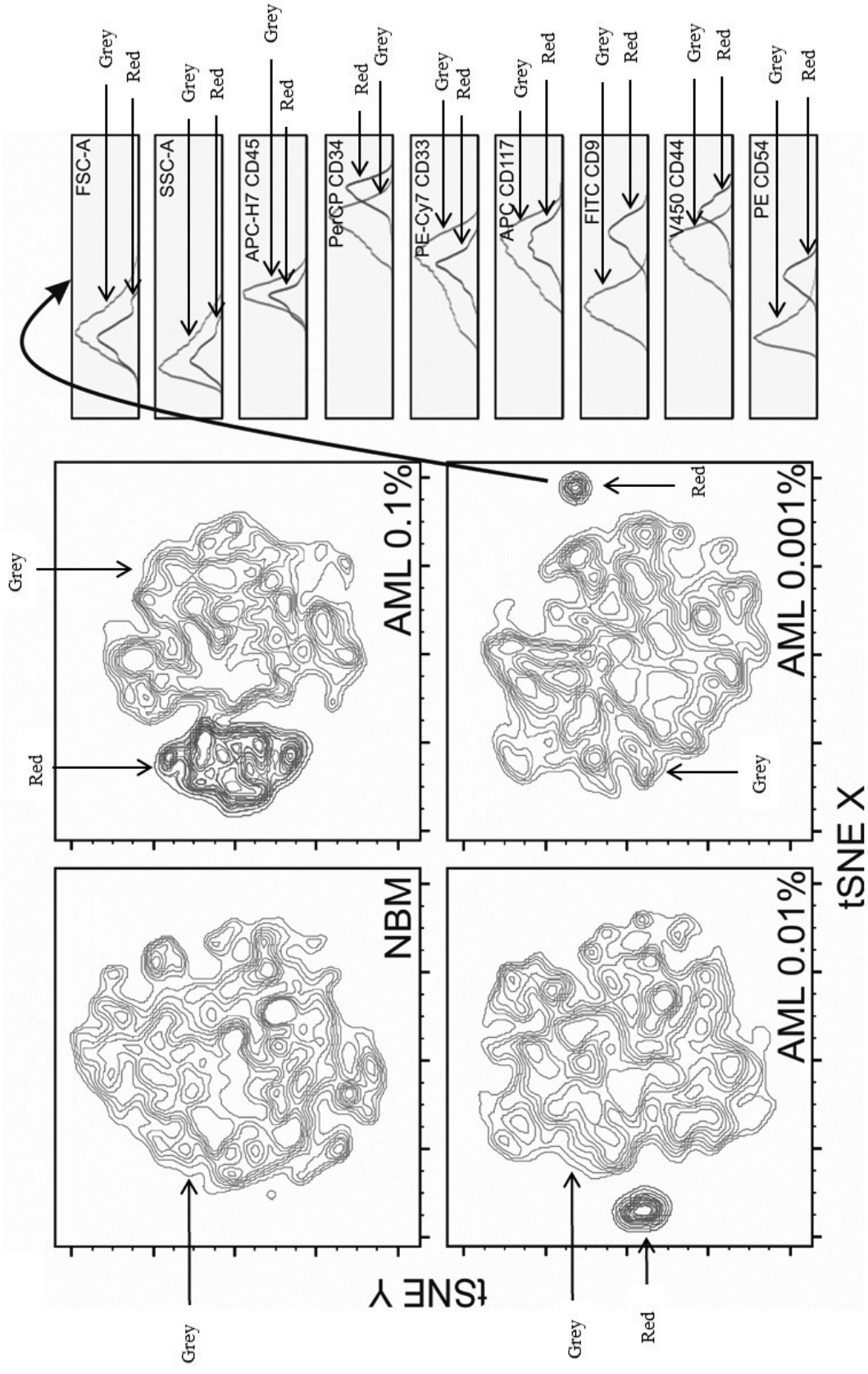
tSNE Y
tSNE X
NBM
AML 0.1%
AML 0.01%
AML 0.001%
Grey
Red
FSC-A
SSC-A
APC-H7 CD45
PerCP CD34
PE-Cy7 CD33
APC CD117
FITC CD9
V450 CD44
PE CD54

FIG. 6C

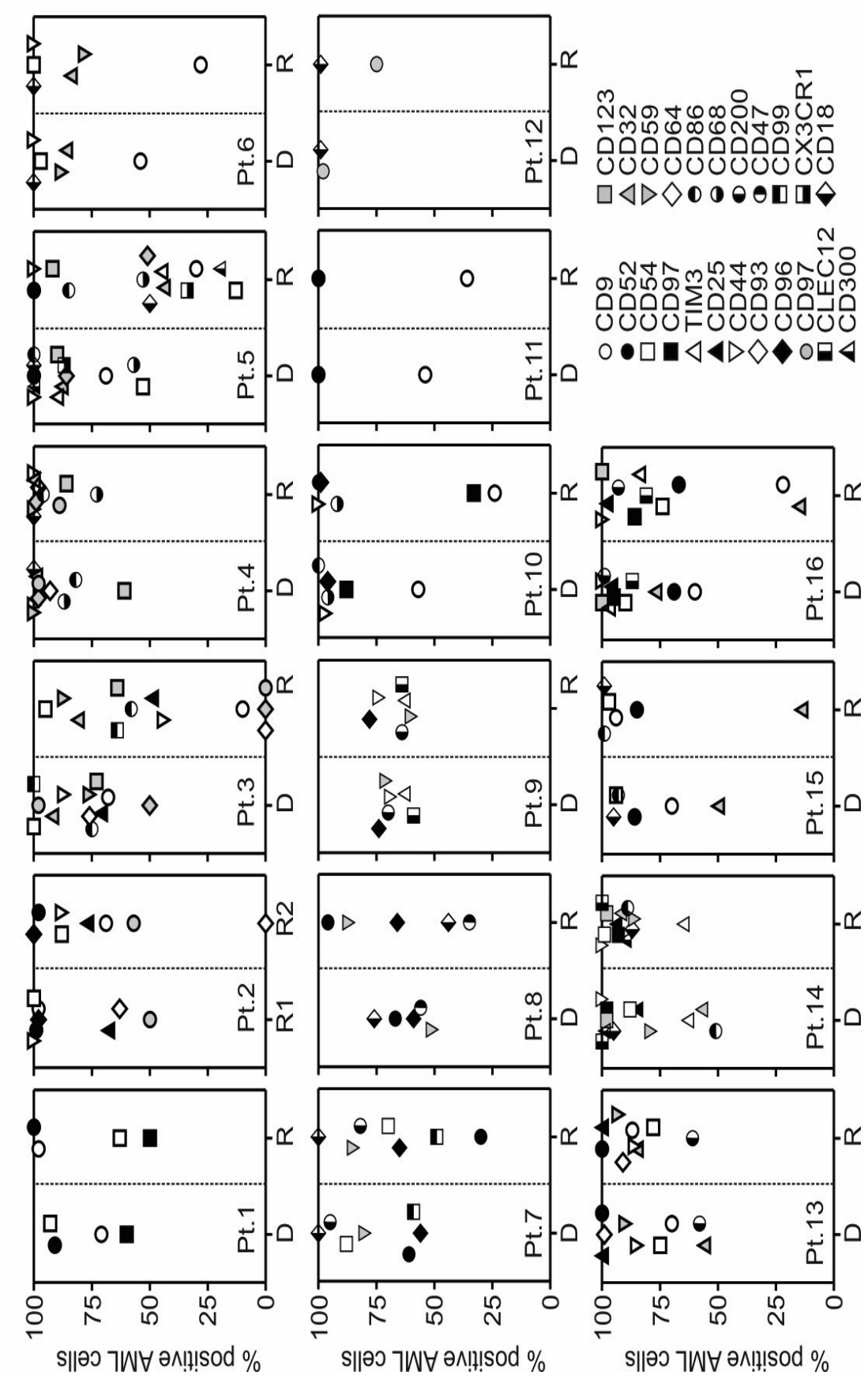
% positive AML cells
100
75
50
25
0
Pt.1
Pt.2
Pt.3
Pt.4
Pt.5
Pt.6
Pt.7
Pt.8
Pt.9
Pt.10
Pt.11
Pt.12
Pt.13
Pt.14
Pt.15
Pt.16
D
R
R1
R2
CD9
CD52
CD54
CD97
TIM3
CD25
CD44
CD93
CD96
CD97
CLEC12
CD300
CD123
CD32
CD59
CD64
CD86
CD68
CD200
CD47
CD99
CX3CR1
CD18

FIG. 7

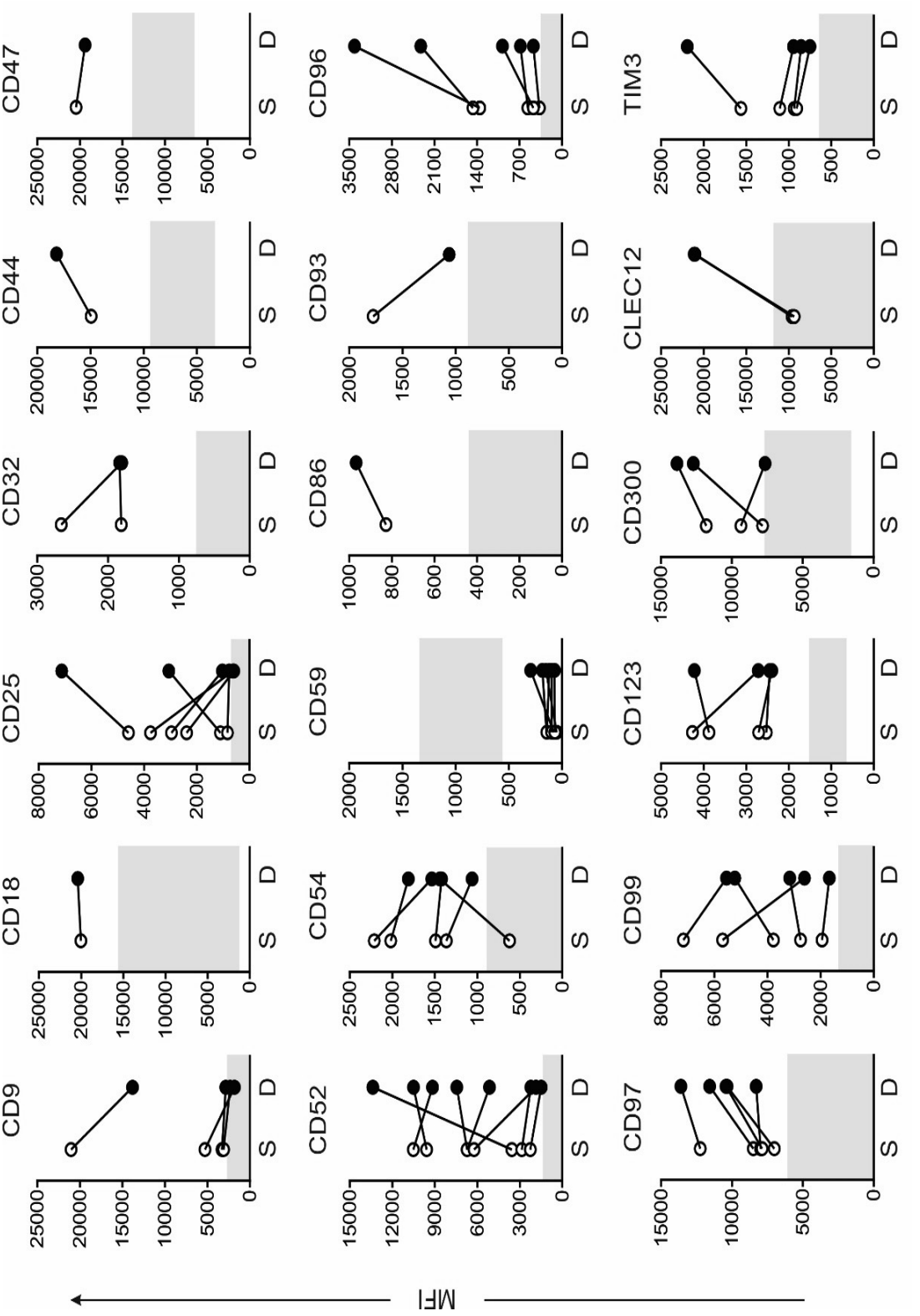
CD9
CD18
CD25
CD32
CD44
CD47
CD52
CD54
CD59
CD86
CD93
CD96
CD97
CD99
CD123
CD300
CLEC12
TIM3
MFI
S
D

FIG. 8

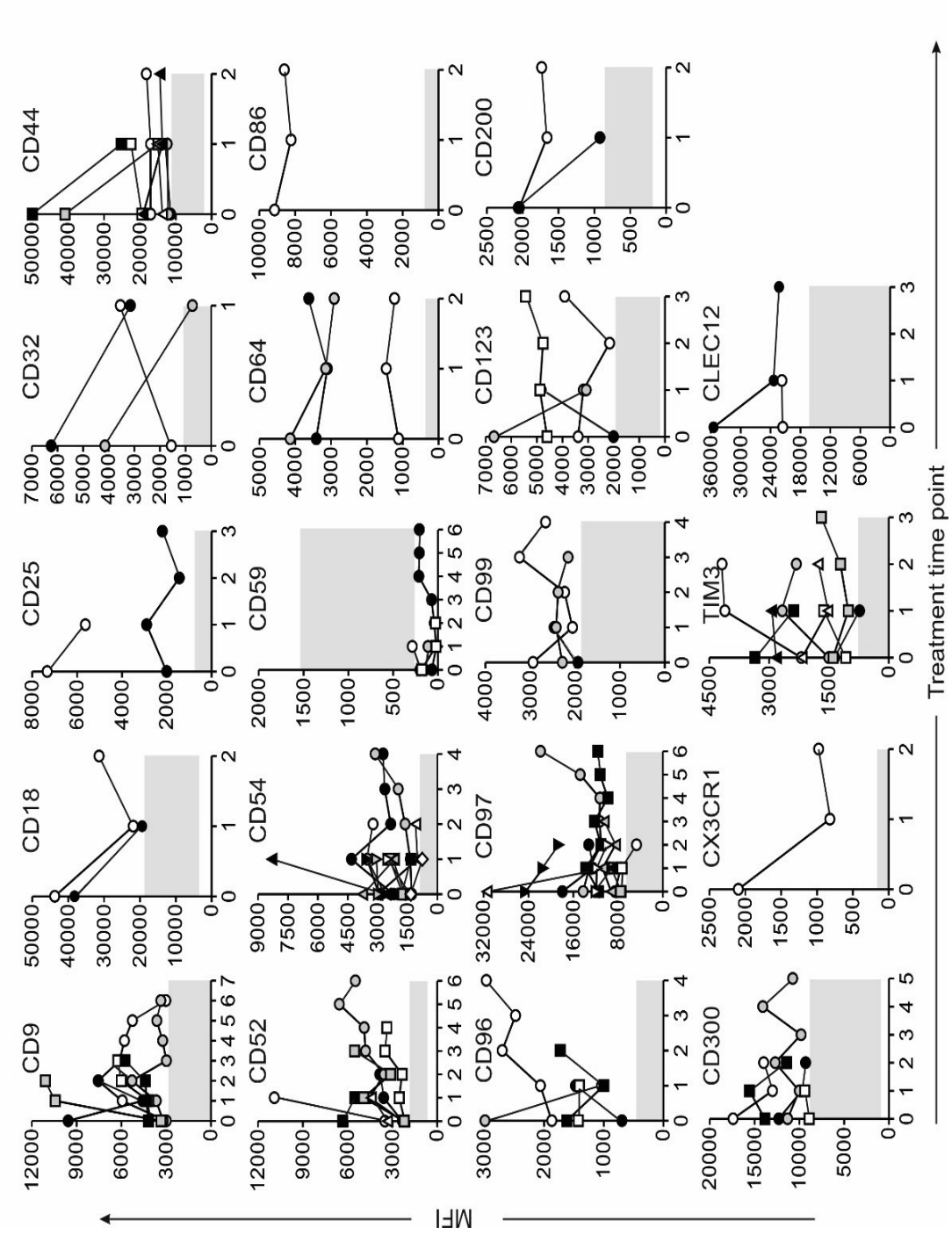
CD9
CD18
CD25
CD32
CD44
CD52
CD54
CD59
CD64
CD86
CD96
CD97
CD99
CD123
CD200
CD300
CX3CR1
TIM3
CLEC12
MFI
Treatment time point

FIG. 9

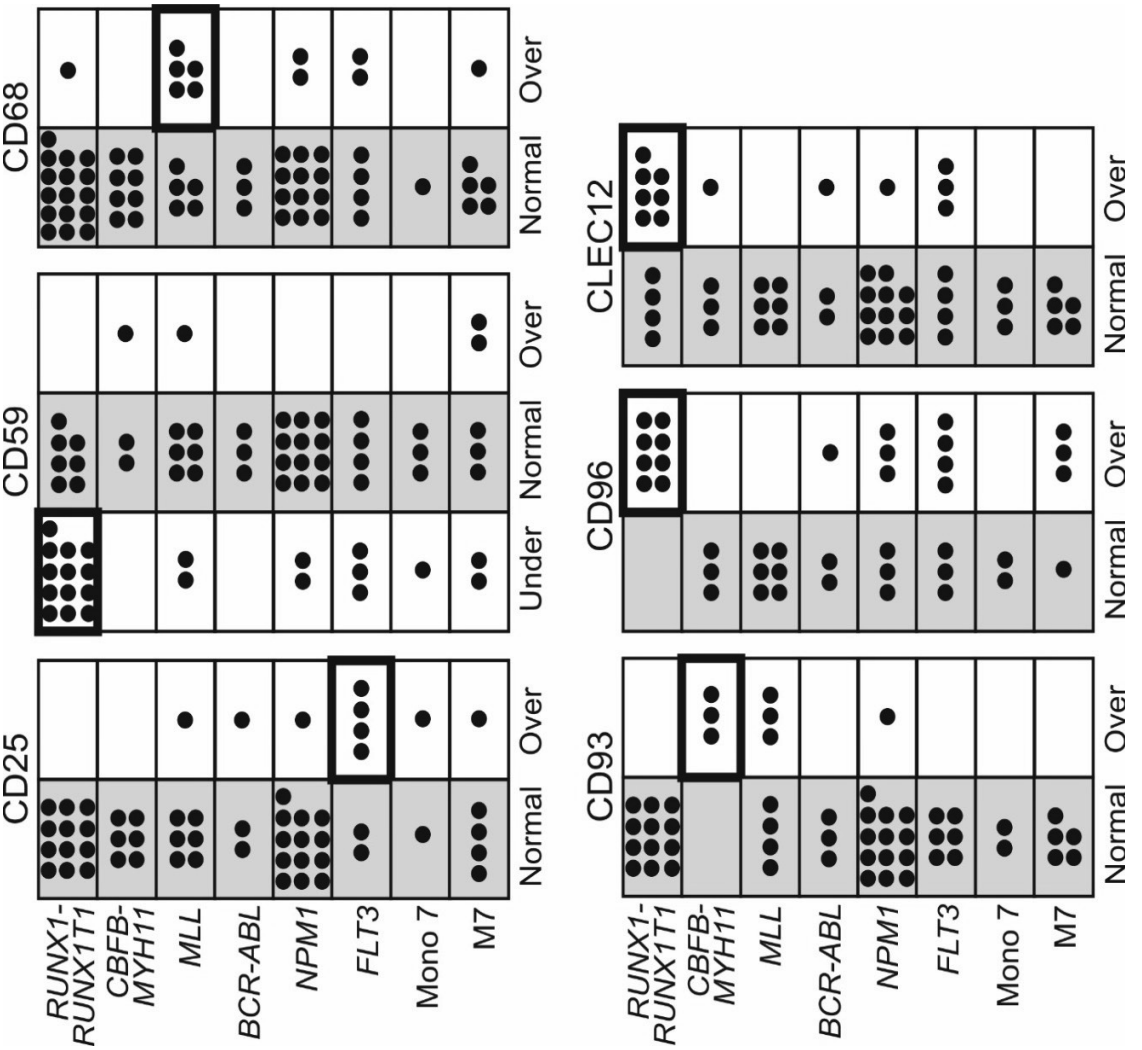
CD25
CD59
CD68
CD93
CD96
CLEC12
RUNX1-RUNX1T1
CBFB-MYH11
MLL
BCR-ABL
NPM1
FLT3
Mono 7
M7
Normal
Over
Under
Normal
Over
Normal
Over
Normal
Over
Normal
Over

FIG. 10

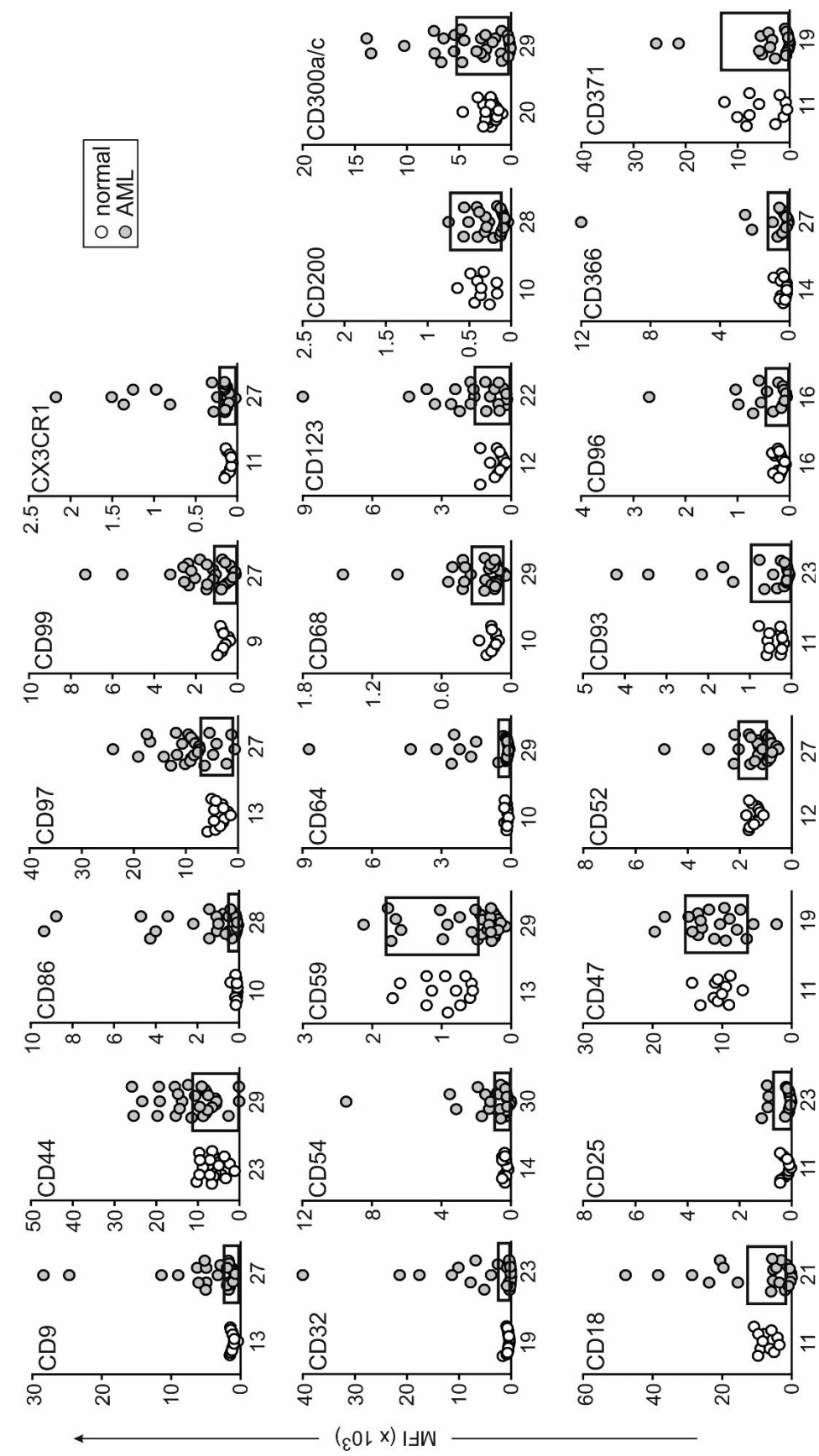
normal
AML
MFI (x 10³)
CD9
CD44
CD86
CD97
CD99
CX3CR1
CD32
CD54
CD59
CD64
CD68
CD123
CD200
CD300a/c
CD18
CD25
CD47
CD52
CD93
CD96
CD366
CD371

FIG. 11

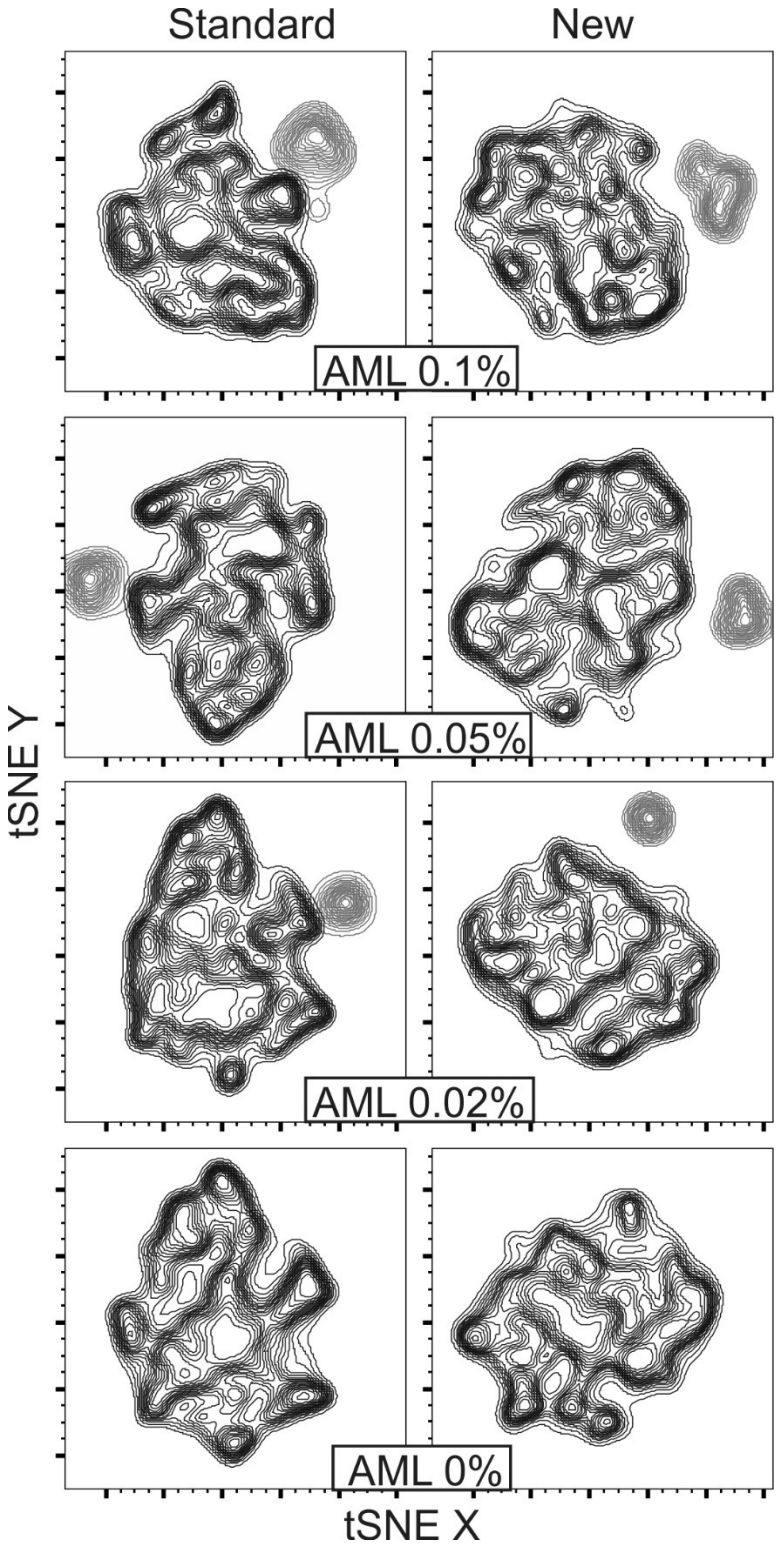

FIG. 12

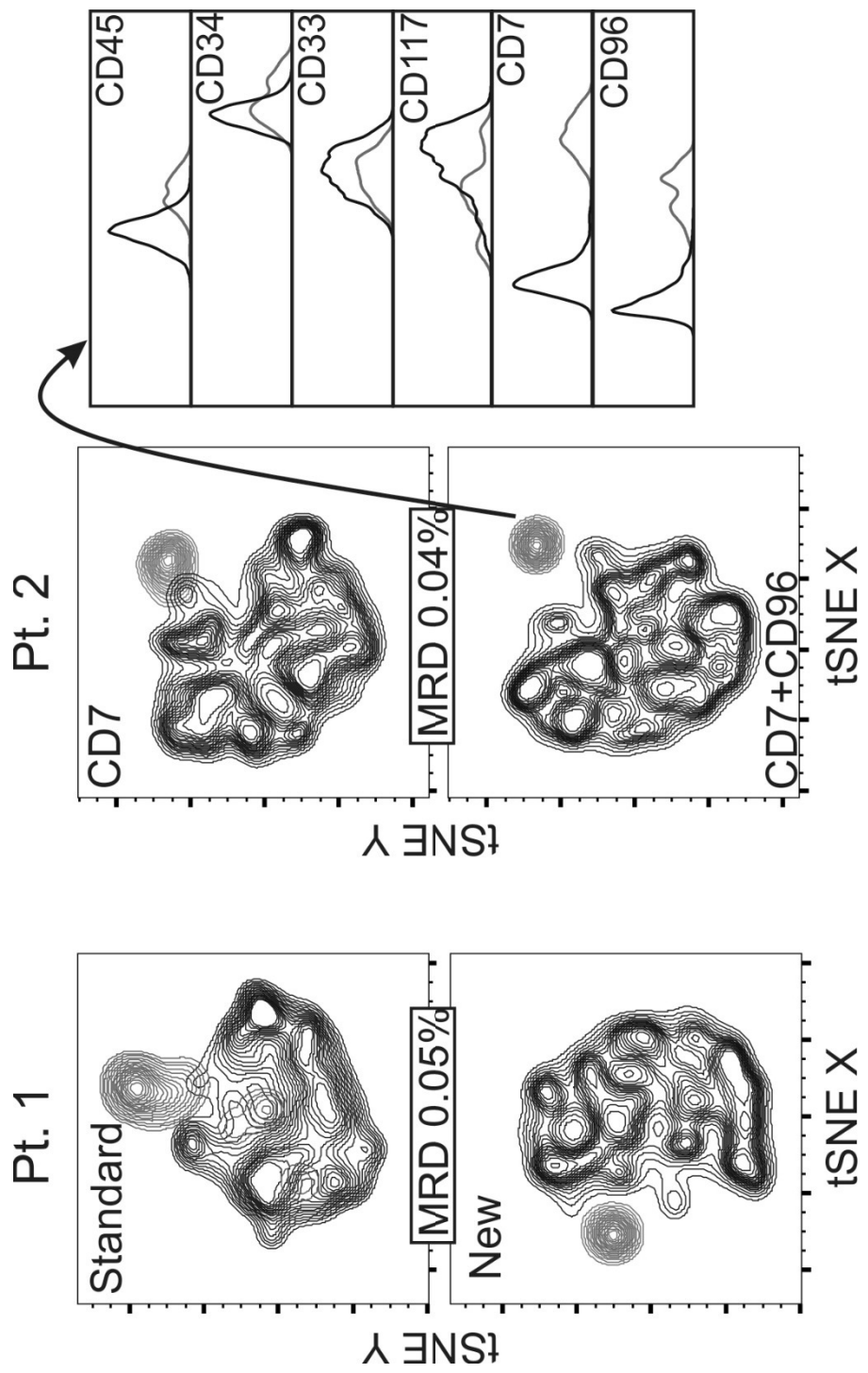
Pt. 1
Standard
MRD 0.05%
New
tSNE Y
tSNE X
Pt. 2
CD7
MRD 0.04%
CD7+CD96
tSNE Y
tSNE X
CD45
CD34
CD33
CD117
CD7
CD96

FIG. 13

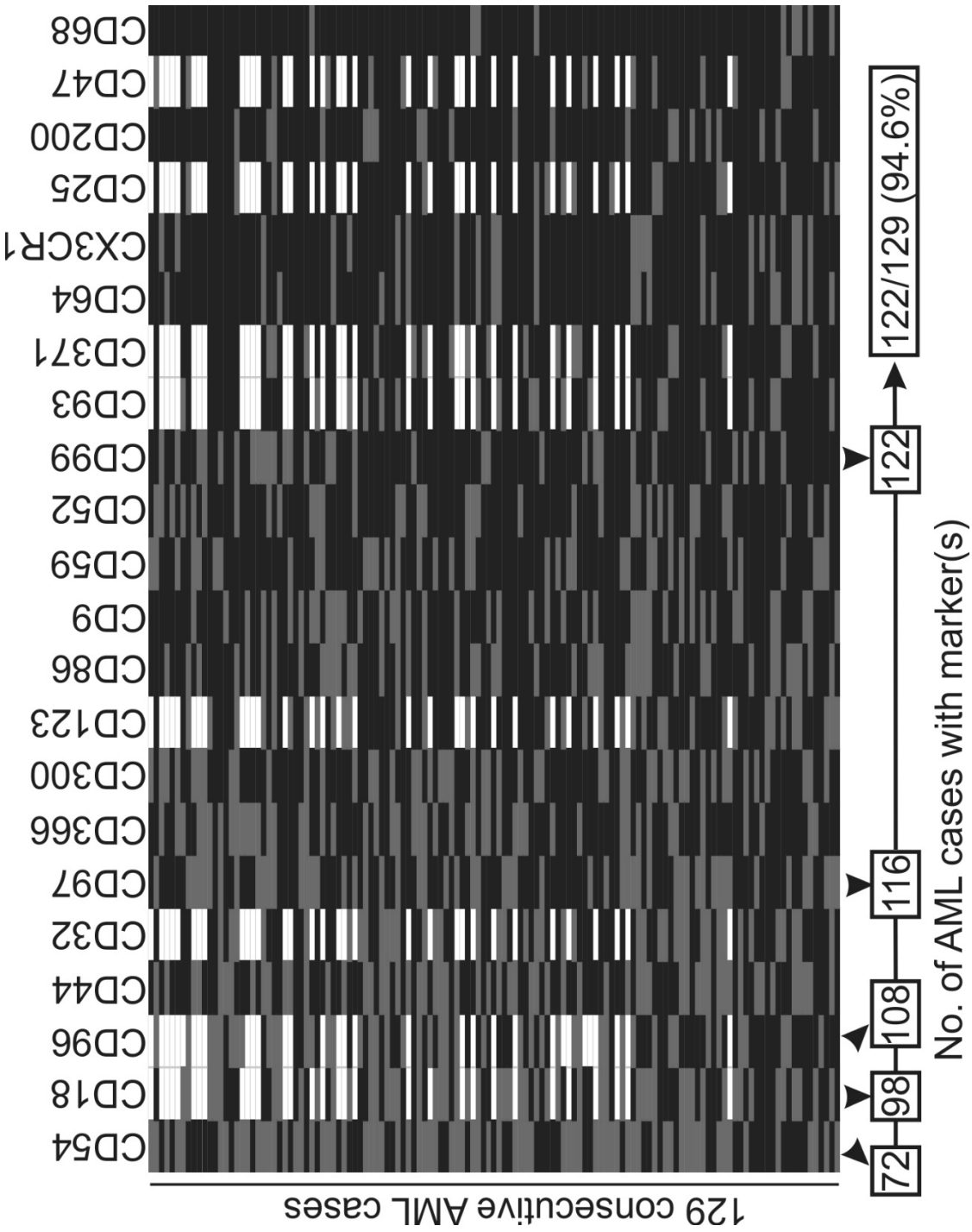
CD54
CD18
CD96
CD44
CD32
CD97
CD366
CD300
CD123
CD86
CD9
CD59
CD52
CD99
CD93
CD371
CD64
CX3CR1
CD25
CD200
CD47
CD68
129 consecutive AML cases
72
98
108
116
122
122/129 (94.6%)
No. of AML cases with marker(s)

FIG. 14

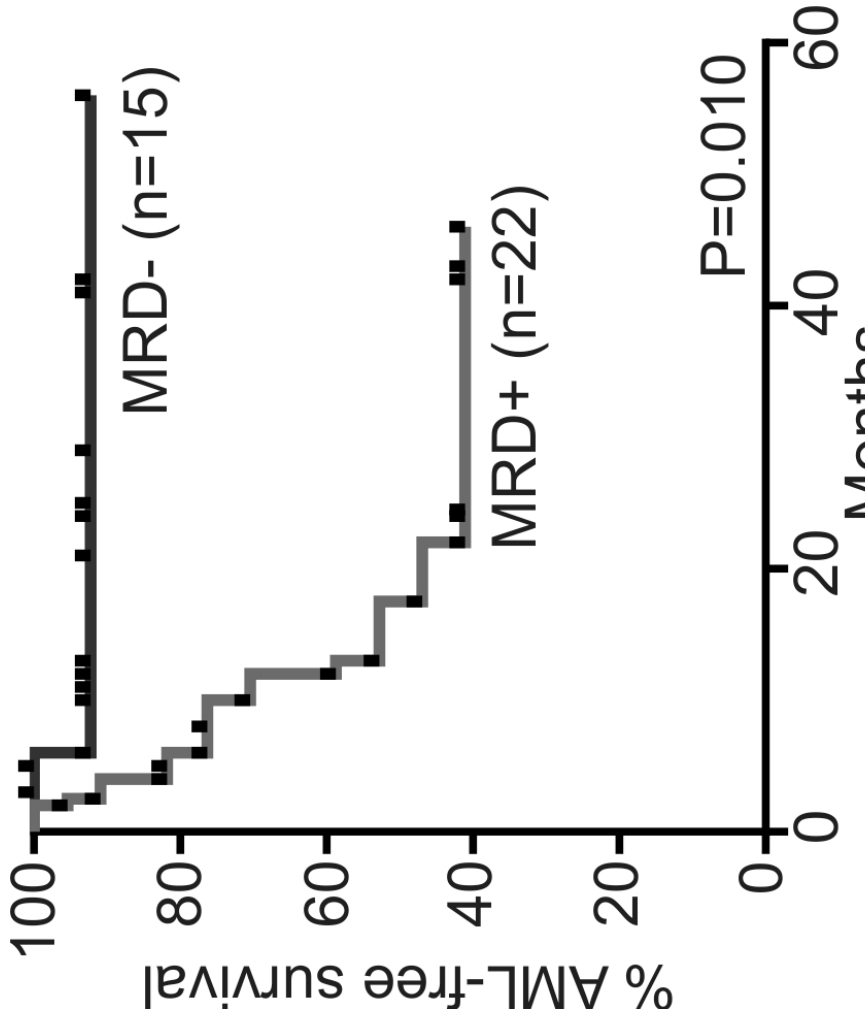
% AML-free survival
100
80
60
40
20
0
0
20
40
60
Months
P=0.010
MRD+ (n=22)
MRD- (n=15)

FIG. 15

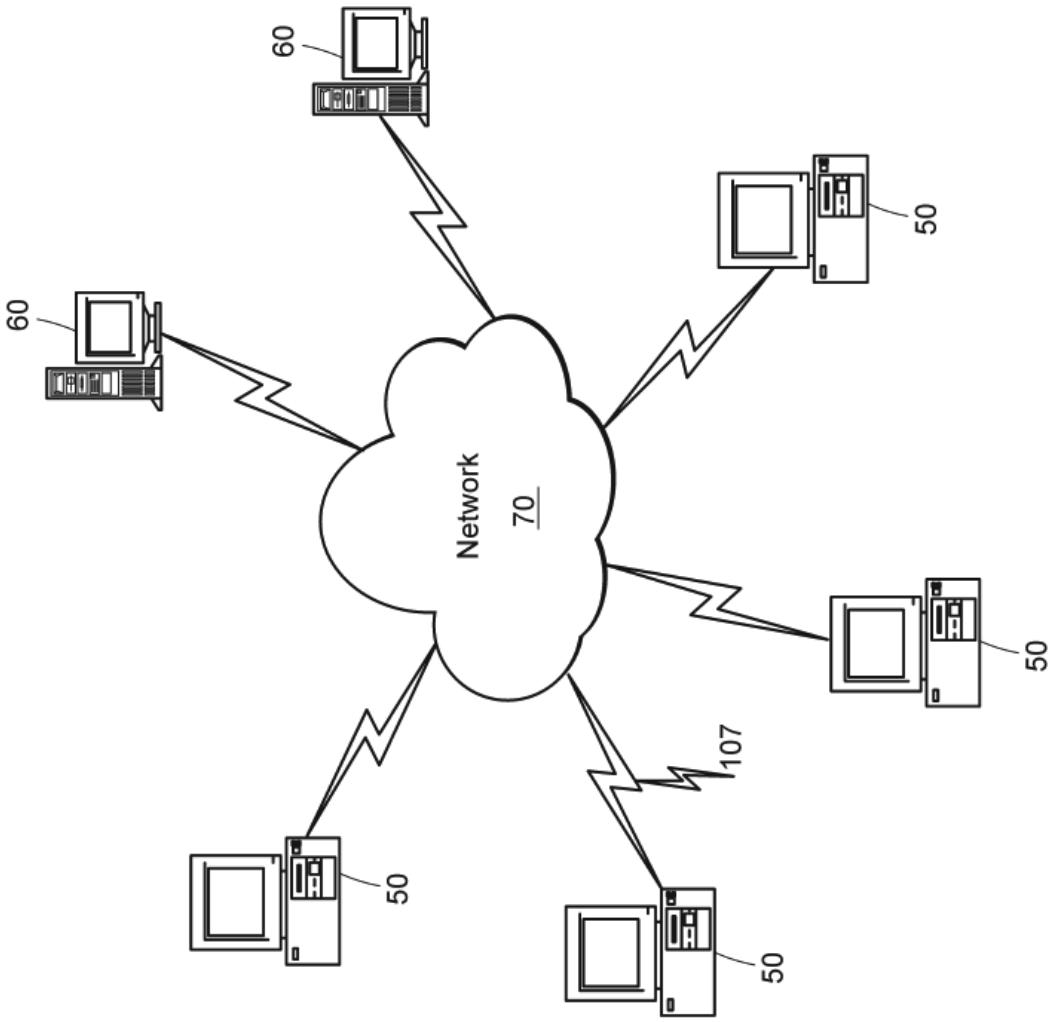

FIG. 16

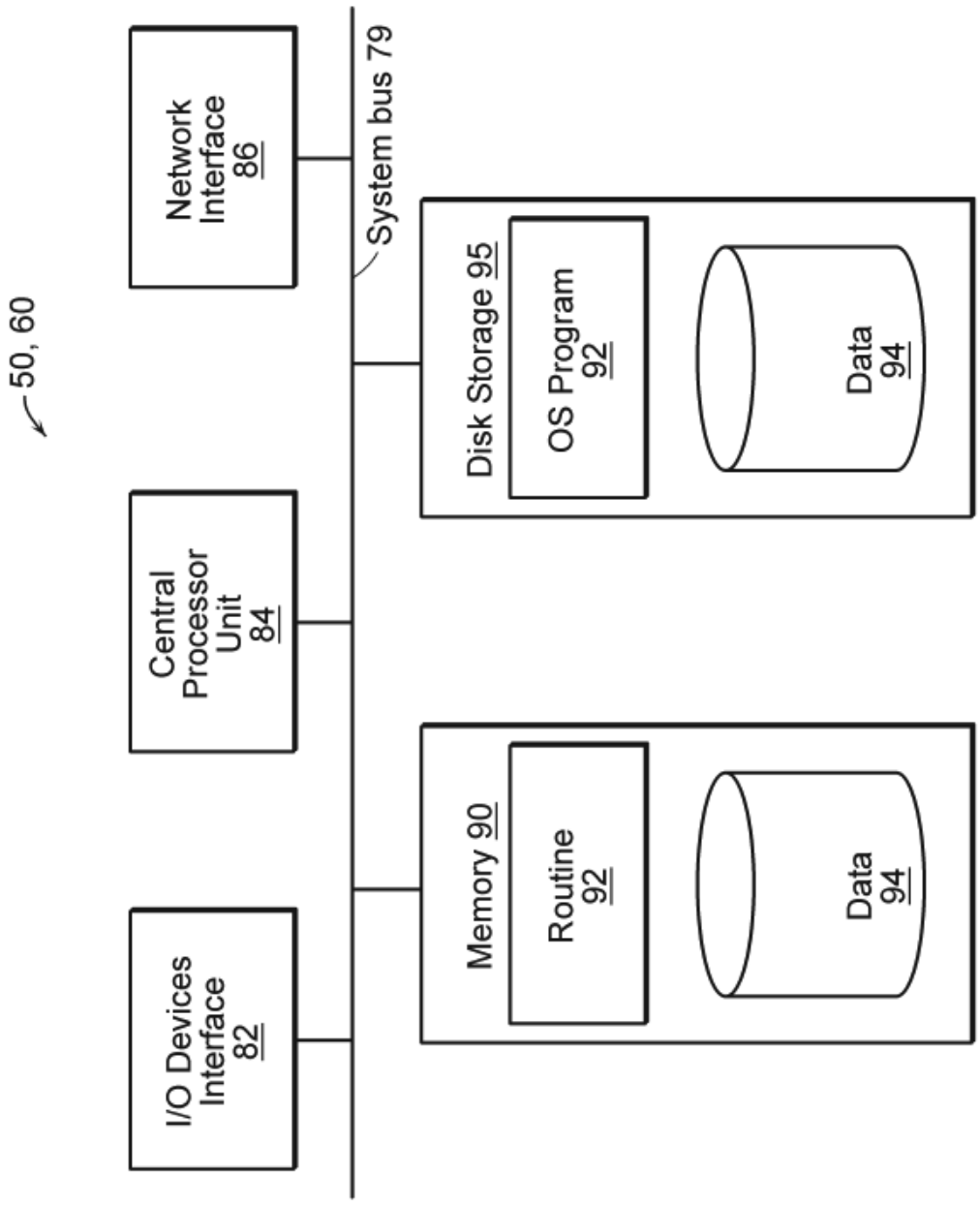
50, 60
Network Interface 86
System bus 79
Disk Storage 95
OS Program 92
Data 94
Central Processor Unit 84
Memory 90
Routine 92
Data 94
I/O Devices Interface 82

FIG. 17