Figure 1A

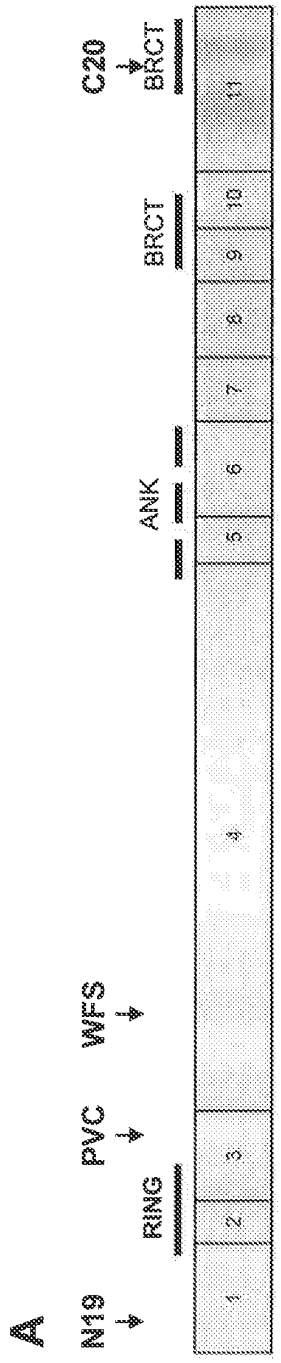


Figure 1B

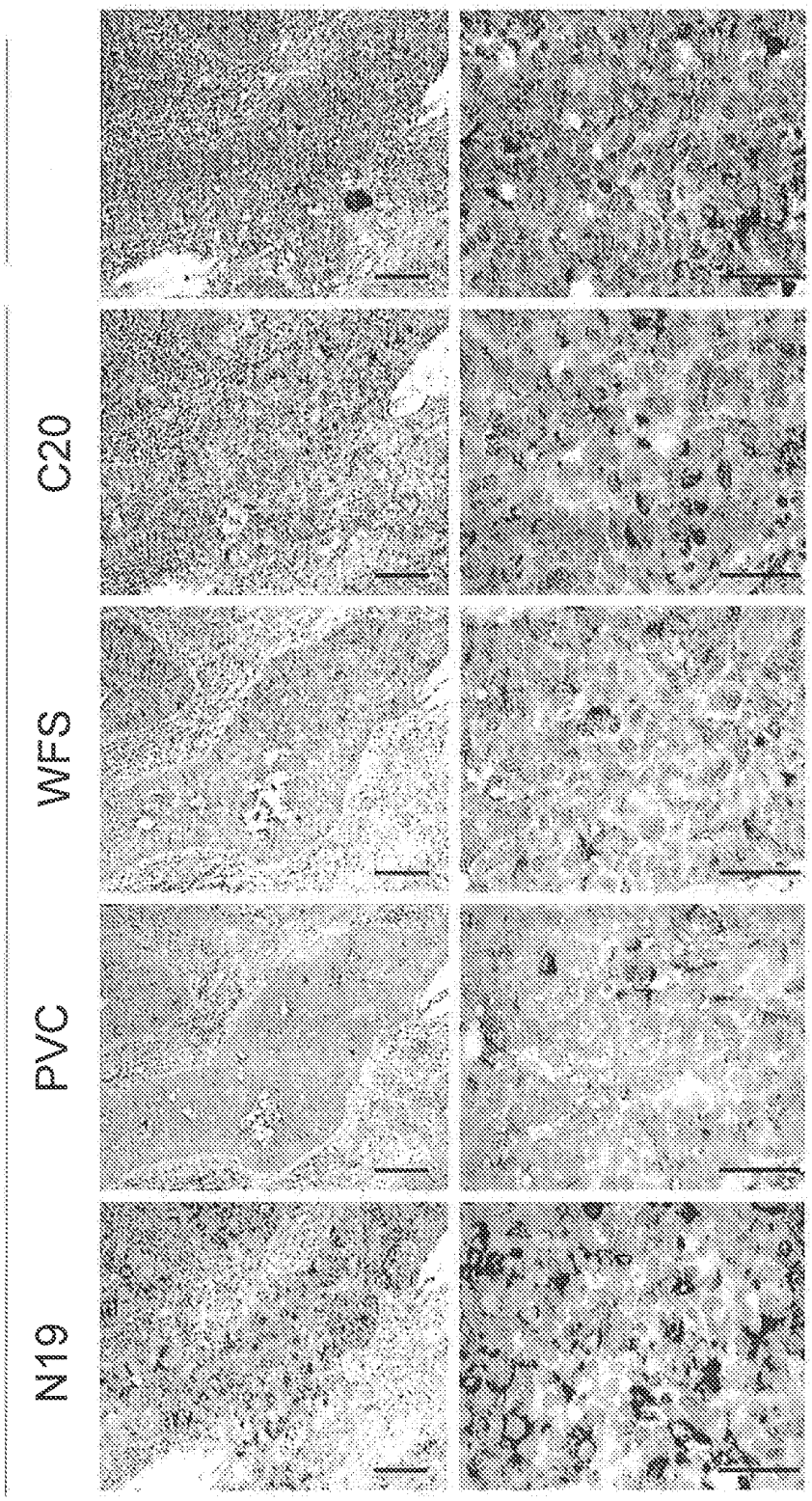


Figure 1C

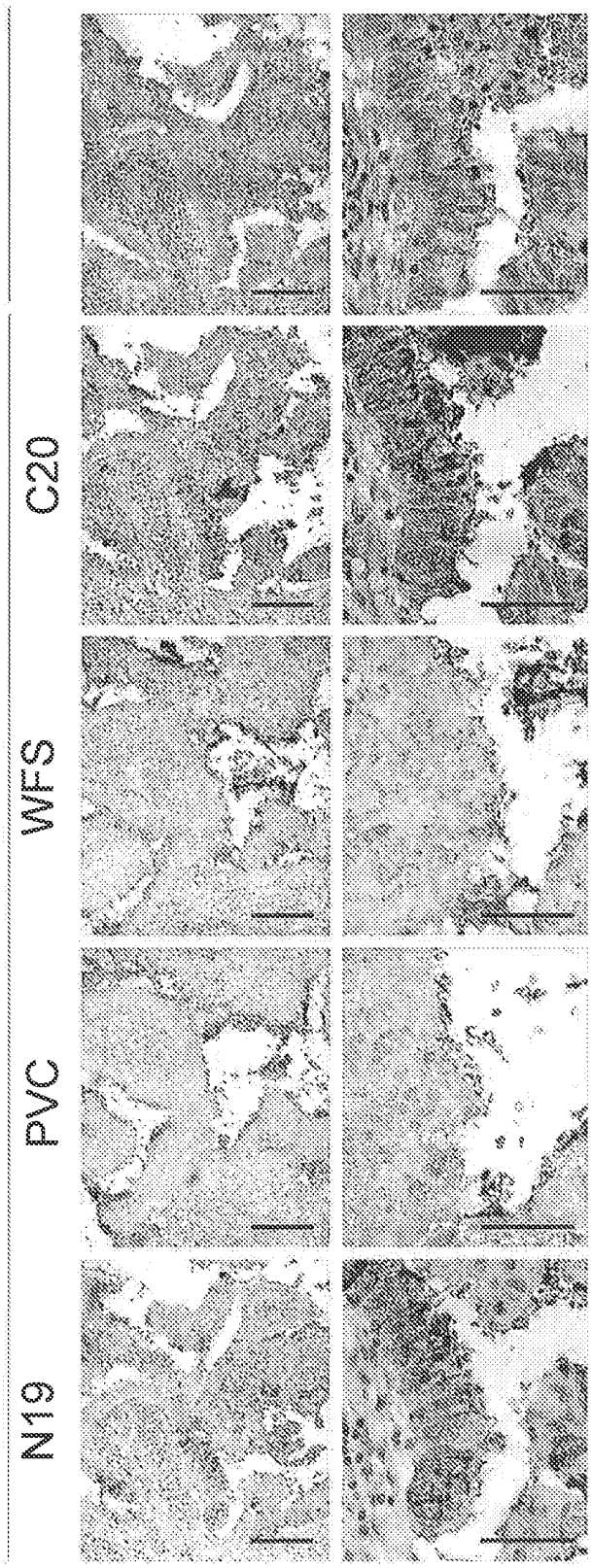


Figure 1D

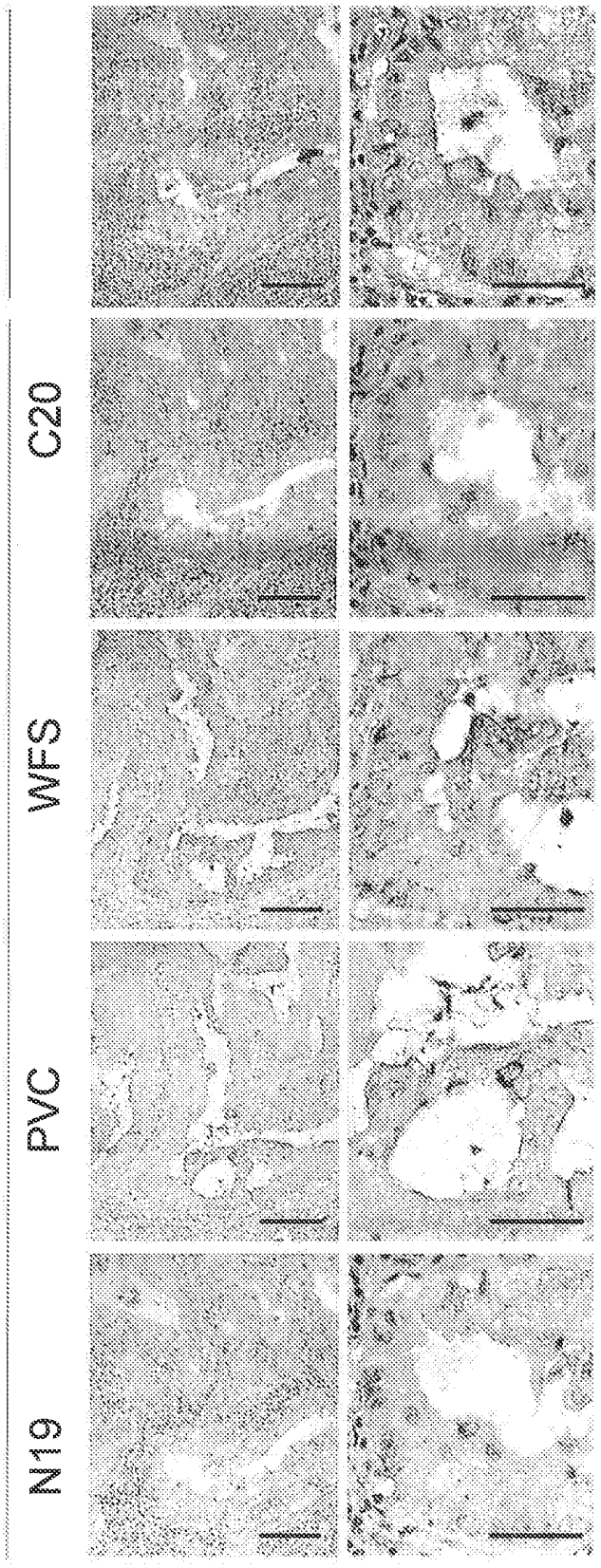
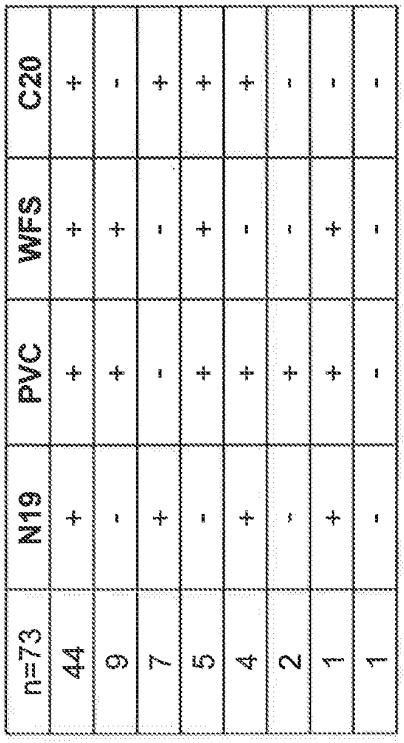


Figure 1E



n=73	N19	PVC	WFS	C20
44	+	+	+	+
9	-	+	+	-
7	+	-	-	+
5	-	+	+	+
4	+	+	-	+
2	-	+	-	-
1	+	+	+	-
1	-	-	-	-

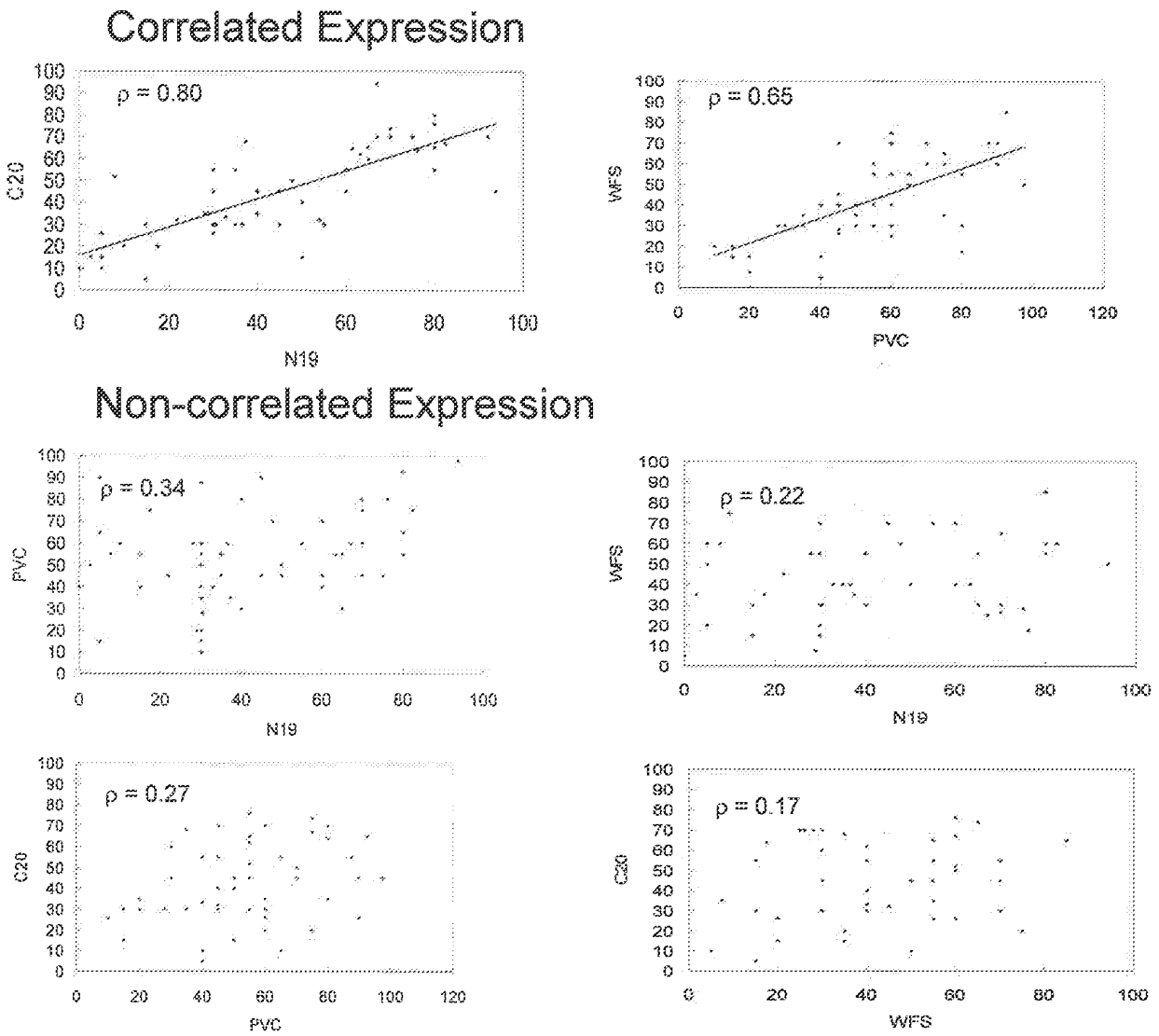

Correlated Expression
ρ = 0.80
C20
N19
ρ = 0.65
WFS
PVC
Non-correlated Expression
ρ = 0.34
PVC
N19
ρ = 0.22
WFS
N19
ρ = 0.27
C20
PVC
ρ = 0.17
C20
WFS

Figure 1F

Figure 2a

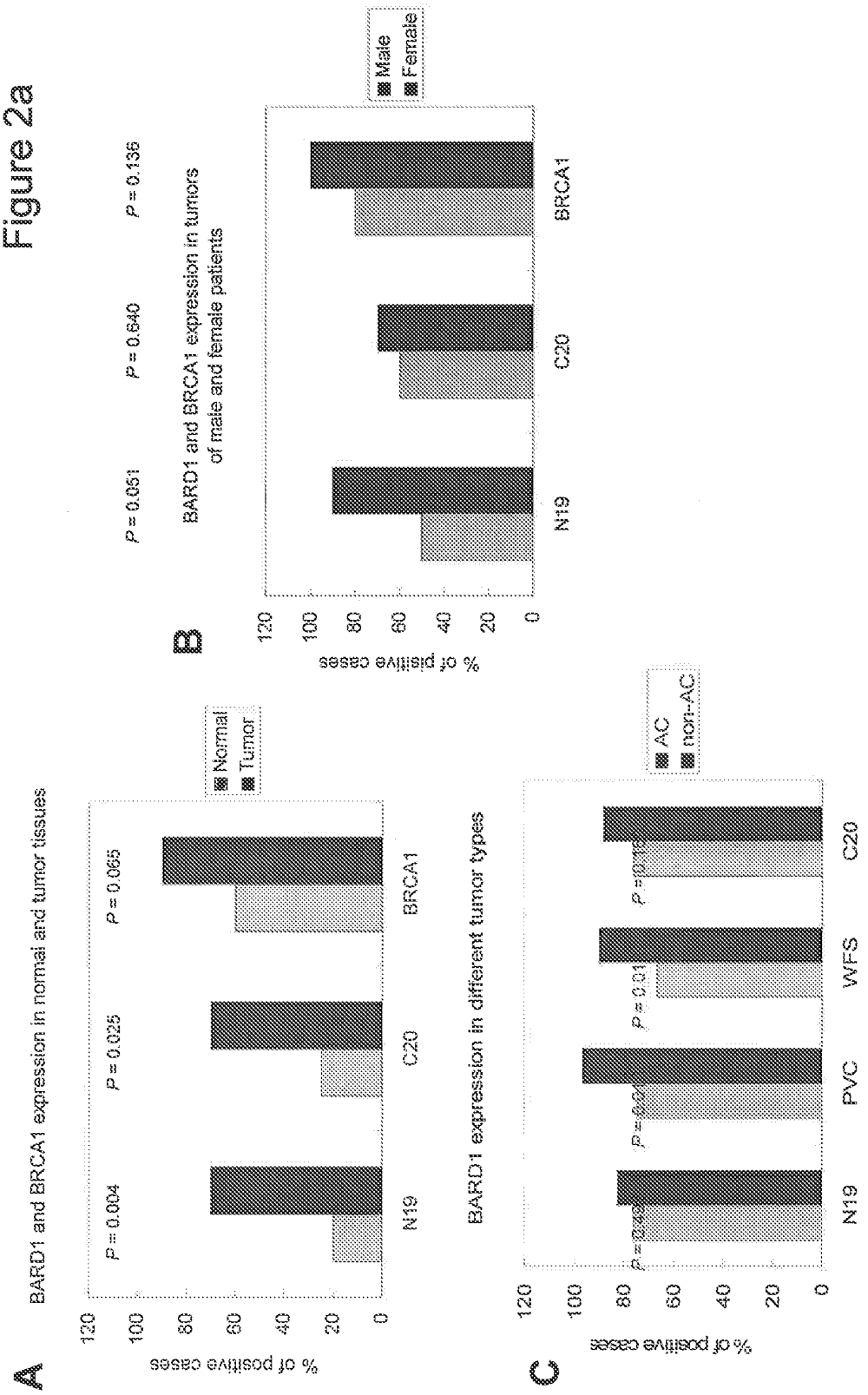

A
BARD1 and BRCA1 expression in normal and tumor tissues
P = 0.004
P = 0.025
P = 0.065
Normal
Tumor
% of positive cases
120
100
80
60
40
20
0
N19
C20
BRCA1
B
BARD1 and BRCA1 expression in tumors of male and female patients
P = 0.051
P = 0.640
P = 0.136
Male
Female
% of positive cases
N19
C20
BRCA1
C
BARD1 expression in different tumor types
AC
non-AC
% of positive cases
P = 0.01
N19
PVC
WFS
C20

Figure 2b

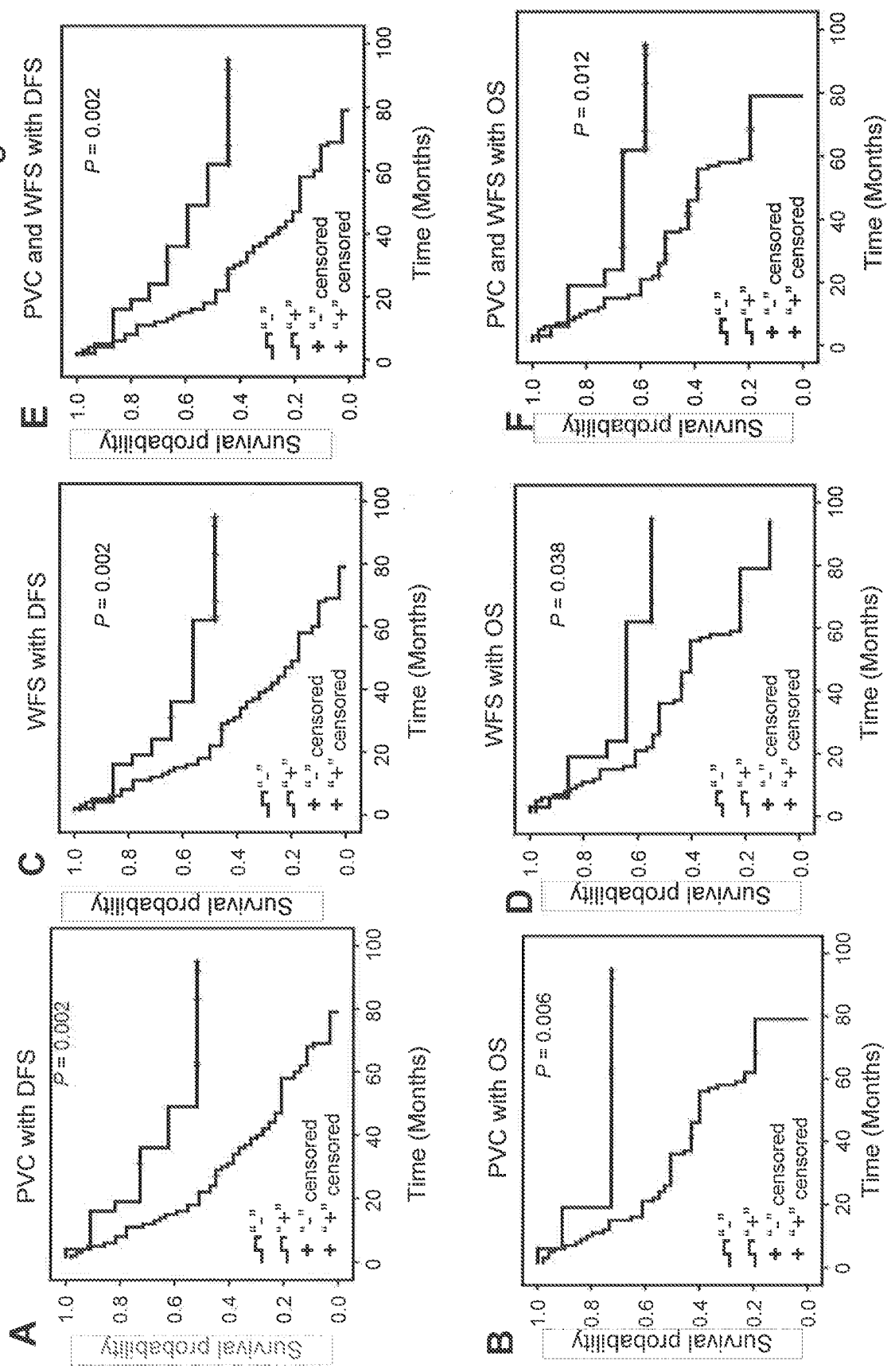

A
PVC with DFS
P = 0.002
Survival probability
Time (Months)
"-" "-"
"-" "+"
"+" "-" censored
"+" "+" censored
B
PVC with OS
P = 0.006
C
WFS with DFS
P = 0.002
D
WFS with OS
P = 0.038
E
PVC and WFS with DFS
P = 0.002
F
PVC and WFS with OS
P = 0.012

Figure 3

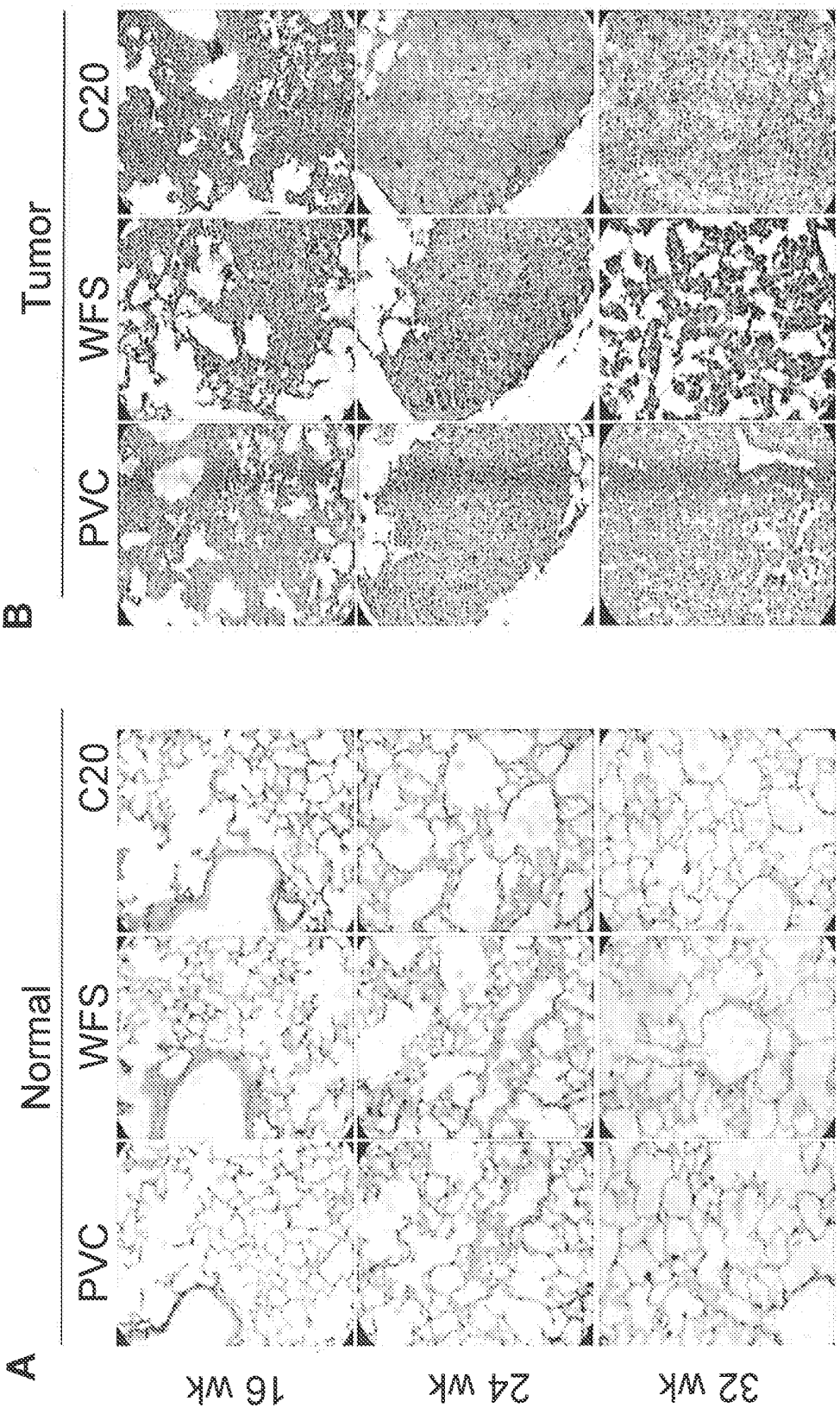


Figure 3

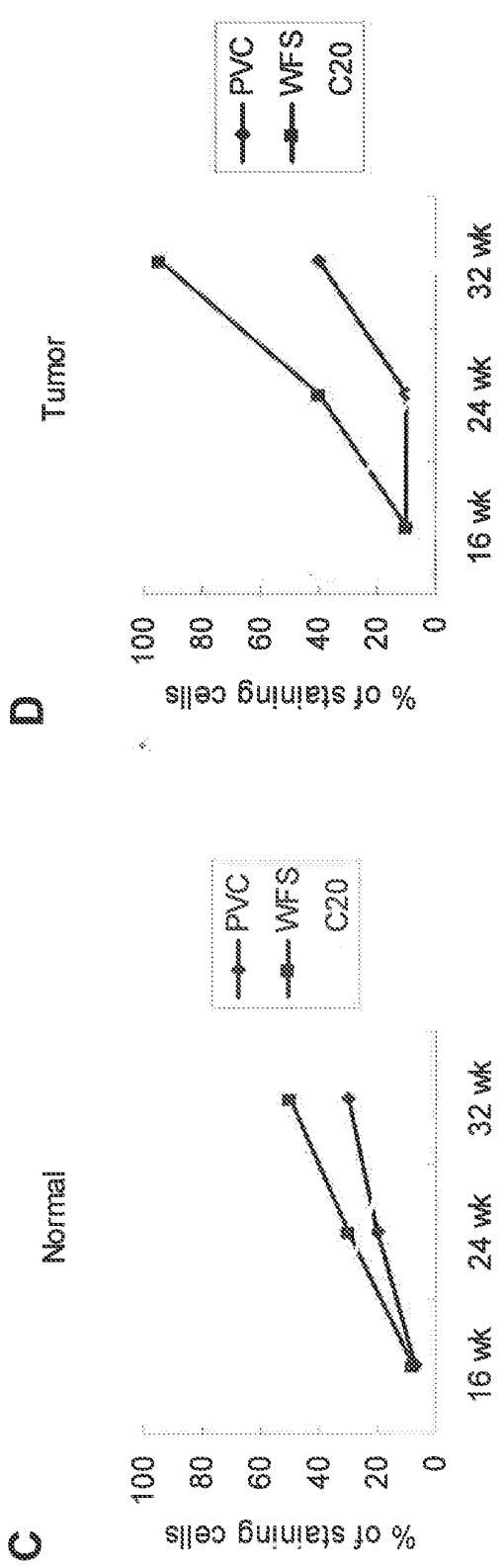

C
Normal
% of staining cells
100
80
60
40
20
0
16 wk
24 wk
32 wk
PVC
WFS
C20
D
Tumor
% of staining cells
100
80
60
40
20
0
16 wk
24 wk
32 wk
PVC
WFS
C20

Figure 4

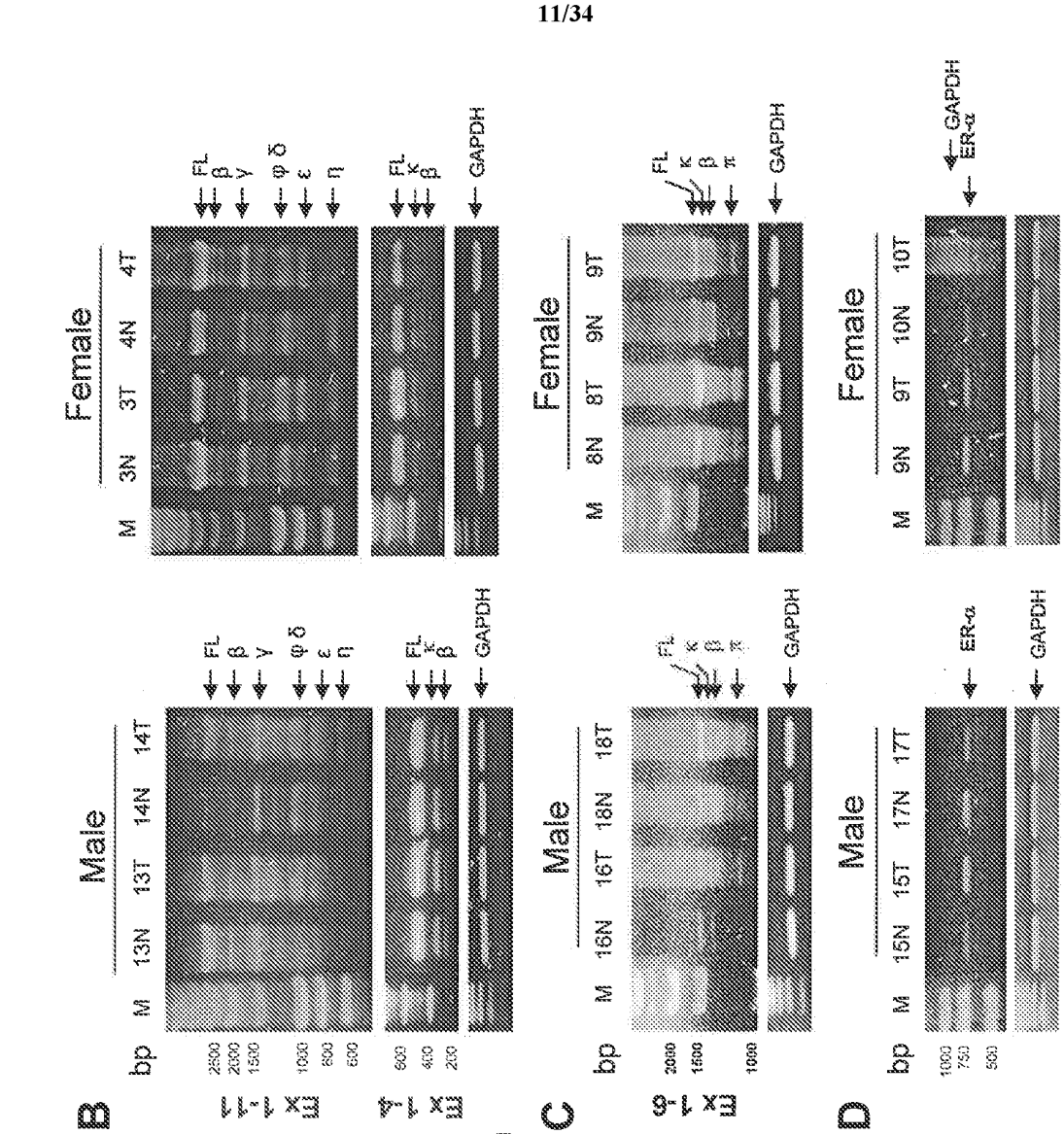

A
Control
M 1 2 3 4 5 6 7 8
bp
2500
2000
1500
1000
800
600
Ex 1-11
γ
δ
η
GAPDH
B
Male
M 13N 13T 14N 14T
Female
M 3N 3T 4N 4T
bp
2500
2000
1500
1000
800
600
Ex 1-11
FL
β
γ
φ δ
ε
η
Ex 1-4
FL
κ
β
GAPDH
C
Male
M 16N 16T 18N 18T
Female
M 8N 8T 9N 9T
bp
2000
1500
1000
Ex 1-6
FL
κ
β
π
GAPDH
D
Male
M 15N 15T 17N 17T
Female
M 9N 9T 10N 10T
bp
1000
750
500
ER-α
GAPDH

Figure 4E

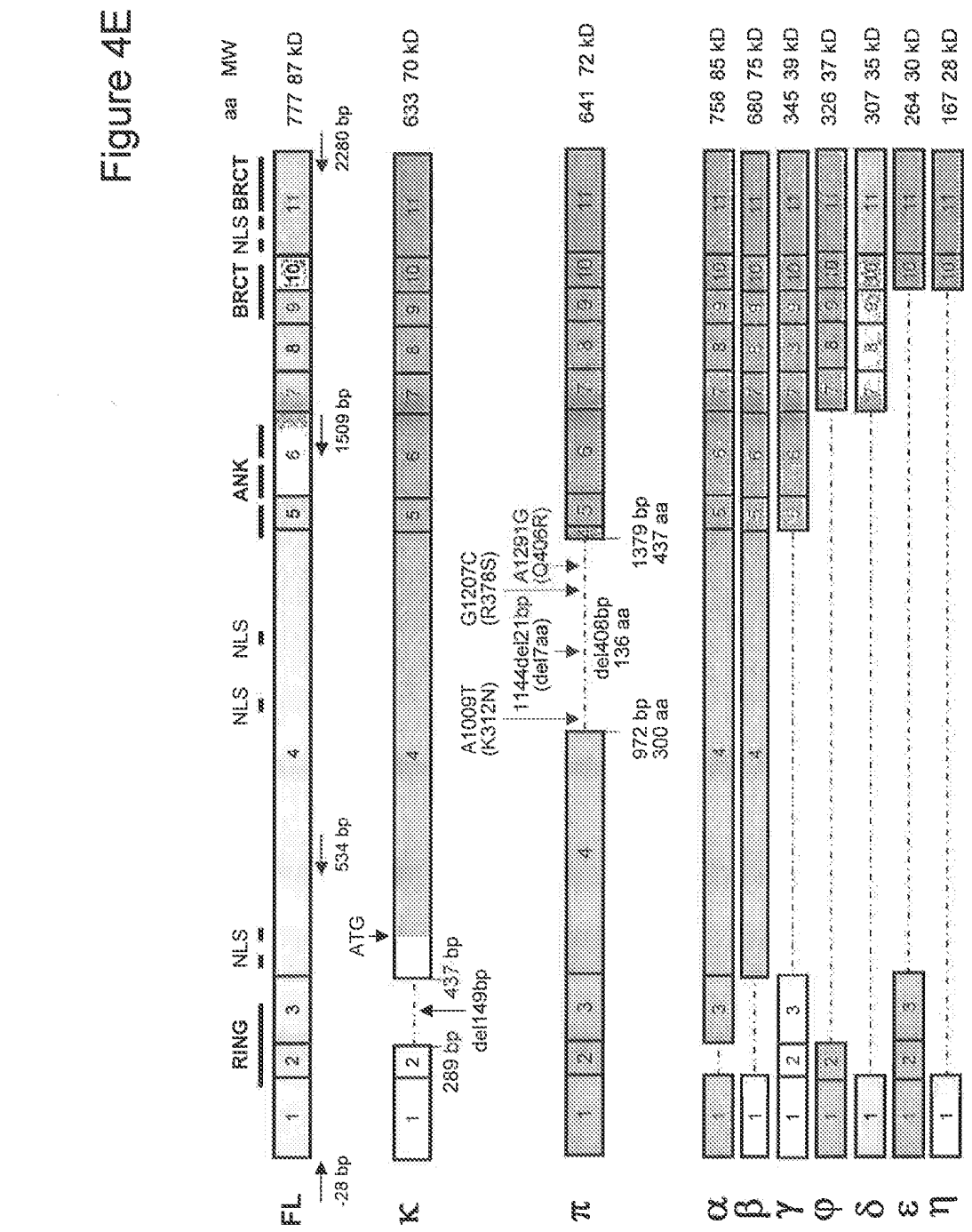

RING
NLS
NLS
NLS
ANK
BRCT
NLS
BRCT
aa
MW
FL
-28 bp
534 bp
1509 bp
2280 bp
777 87 kD
ATG
κ
289 bp
437 bp
del149bp
A1009T
(K312N)
G1207C
(R378S)
11444del21bp
(del7aa)
A1291G
(Q406R)
633 70 kD
π
del408bp
136 aa
972 bp
300 aa
1379 bp
437 aa
641 72 kD
α
β
γ
φ
δ
ε
η
758 85 kD
680 75 kD
345 39 kD
326 37 kD
307 35 kD
264 30 kD
167 28 kD

Figure 5

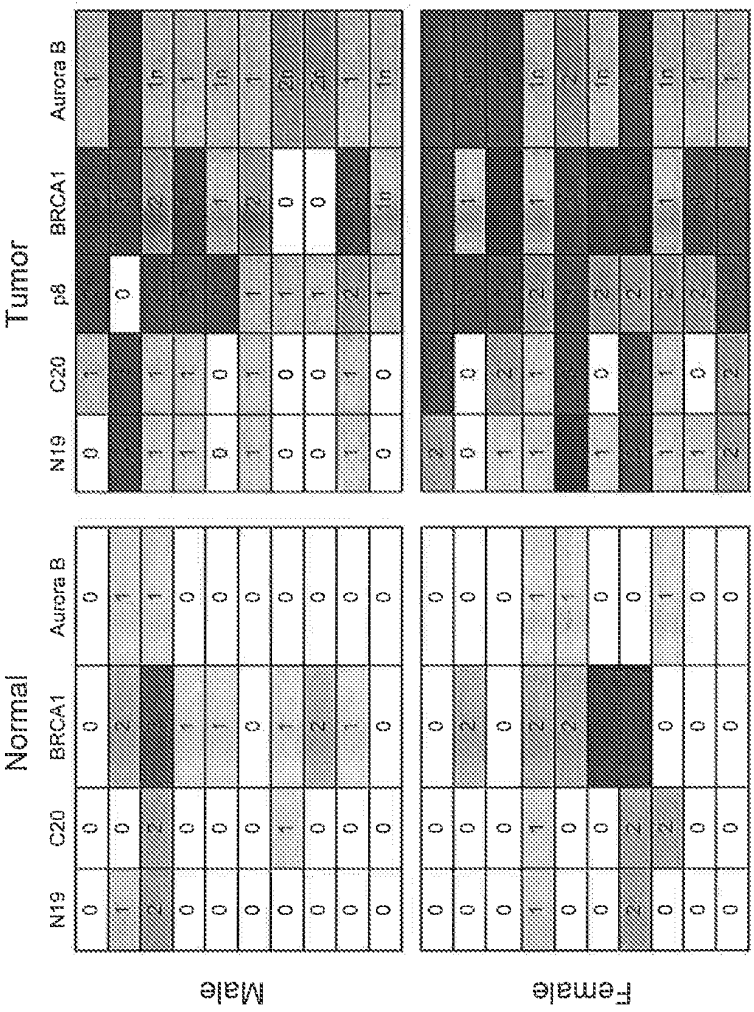


Figure 6

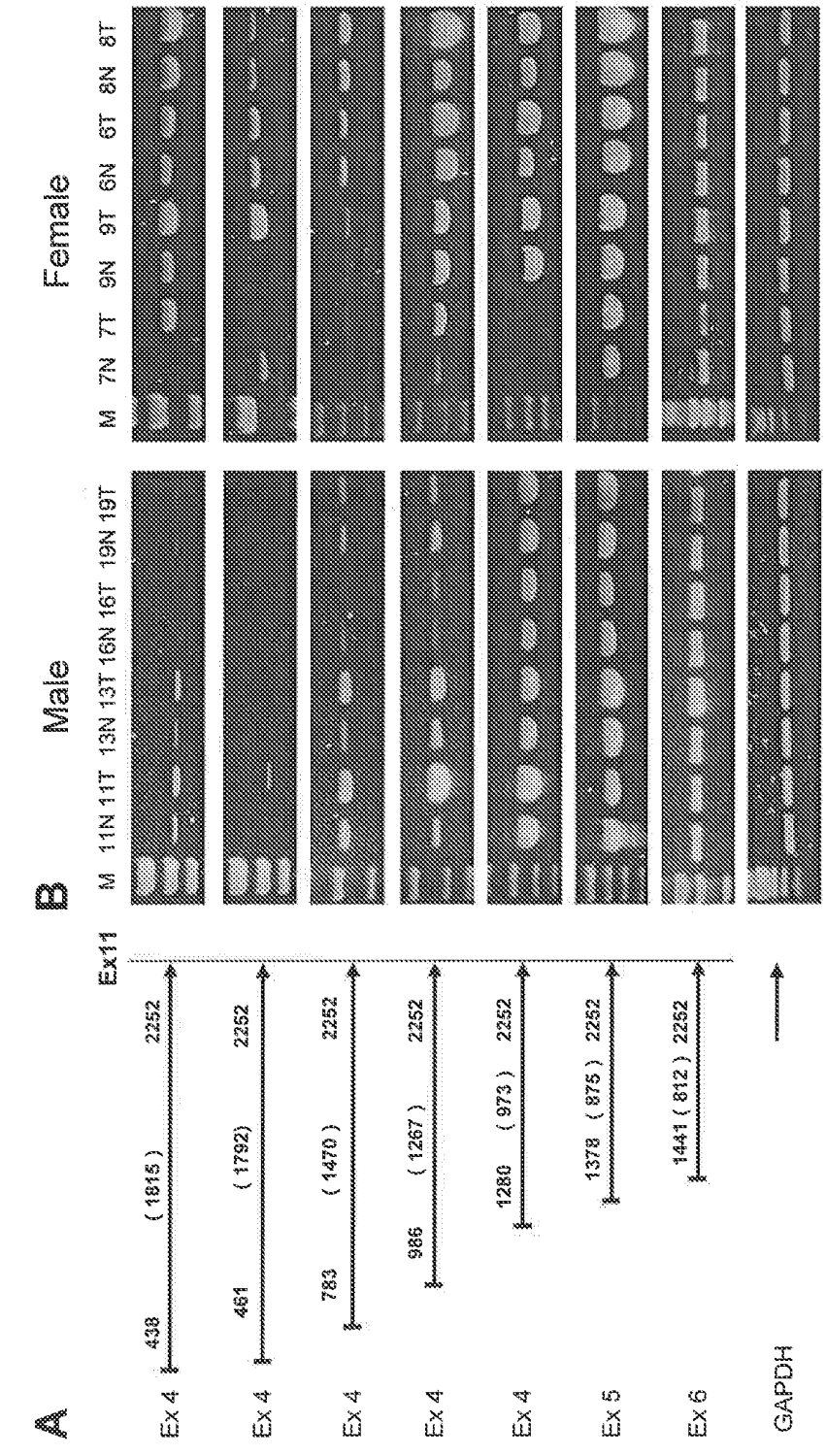

A
B
Male
Female
M 11N 11T 13N 13T 16N 16T 19N 19T
M 7N 7T 9N 9T 6N 6T 8N 8T
Ex11
Ex 4
Ex 4
Ex 4
Ex 4
Ex 4
Ex 5
Ex 6
GAPDH
438
461
783
986
1280
1378
1441
(1815)
(1792)
(1470)
(1267)
(973)
(875)
(812)
2252

Figure 7

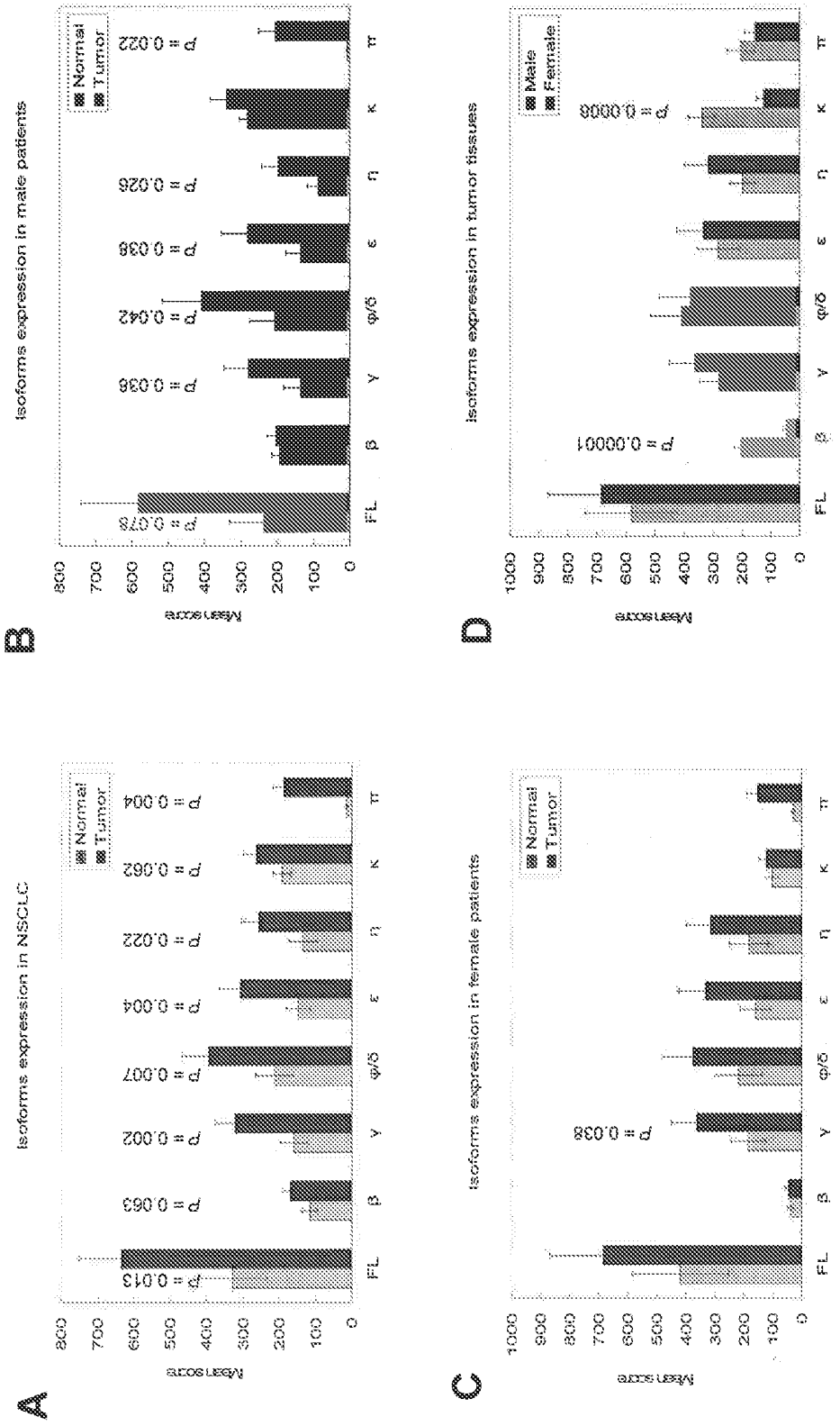
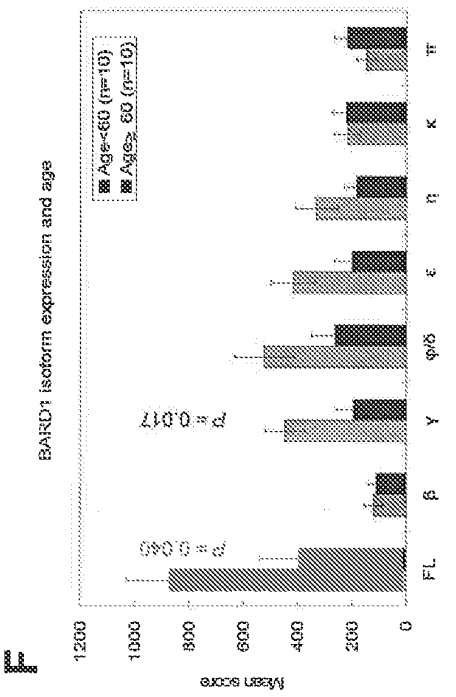
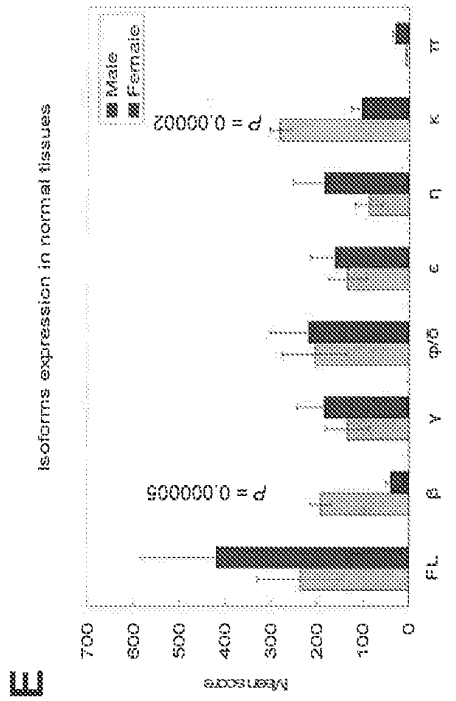

A
Isoforms expression in NSCLC
Normal
Tumor
Mean score
p = 0.013
p = 0.063
p = 0.002
p = 0.007
p = 0.004
p = 0.022
p = 0.062
p = 0.004
FL
β
γ
φ/δ
ε
η
κ
π
B
Isoforms expression in male patients
Normal
Tumor
Mean score
p = 0.078
p = 0.036
p = 0.042
p = 0.036
p = 0.026
p = 0.022
C
Isoforms expression in female patients
Normal
Tumor
Mean score
p = 0.038
D
Isoforms expression in tumor tissues
Male
Female
Mean score
p = 0.00001
p = 0.0006

Figure 7


F
BARD1 isoform expression and age
Age<60 (n=10)
Age≥ 60 (n=10)
P = 0.040
P = 0.017
Mean score
1200
1000
800
600
400
200
0
FL
β
γ
φ/δ
ε
η
κ
π


E
Isoforms expression in normal tissues
Male
Female
P = 0.000005
P = 0.00002
Mean score
700
600
500
400
300
200
100
0
FL
β
γ
φ/δ
ε
η
κ
π

A

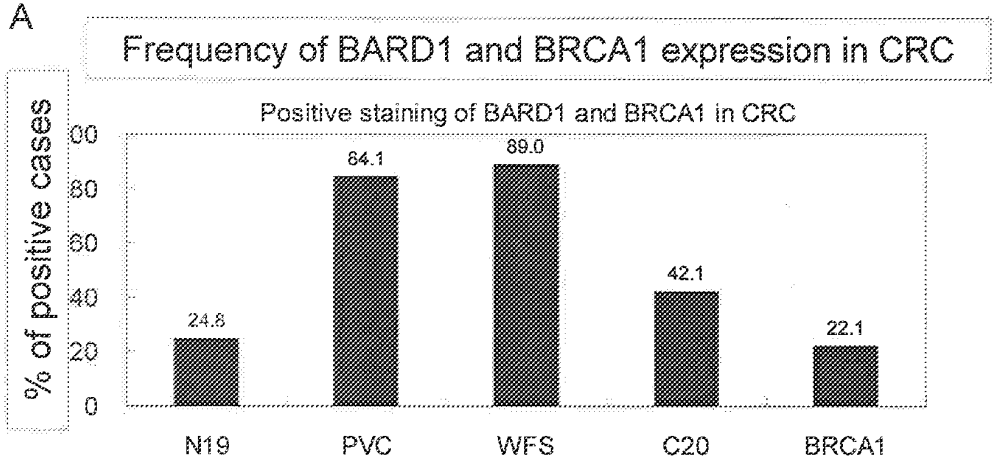


Figure. 8

B

BARD1 Expression pattern in CRC

n=145	N19	PVC	WFS	C20
56	-	+	+	-
27	+	+	+	+
26	-	+	+	+
12	-	-	+	-
6	-	+	-	-
4	-	-	+	+
3	+	+	-	-
2	+	-	+	+
1	-	+	-	+
1	-	+	-	-
1	+	-	-	-
1	+	-	+	-
1	+	+	-	+
1	+	+	+	-
3	-	-	-	-

Figure. 8C

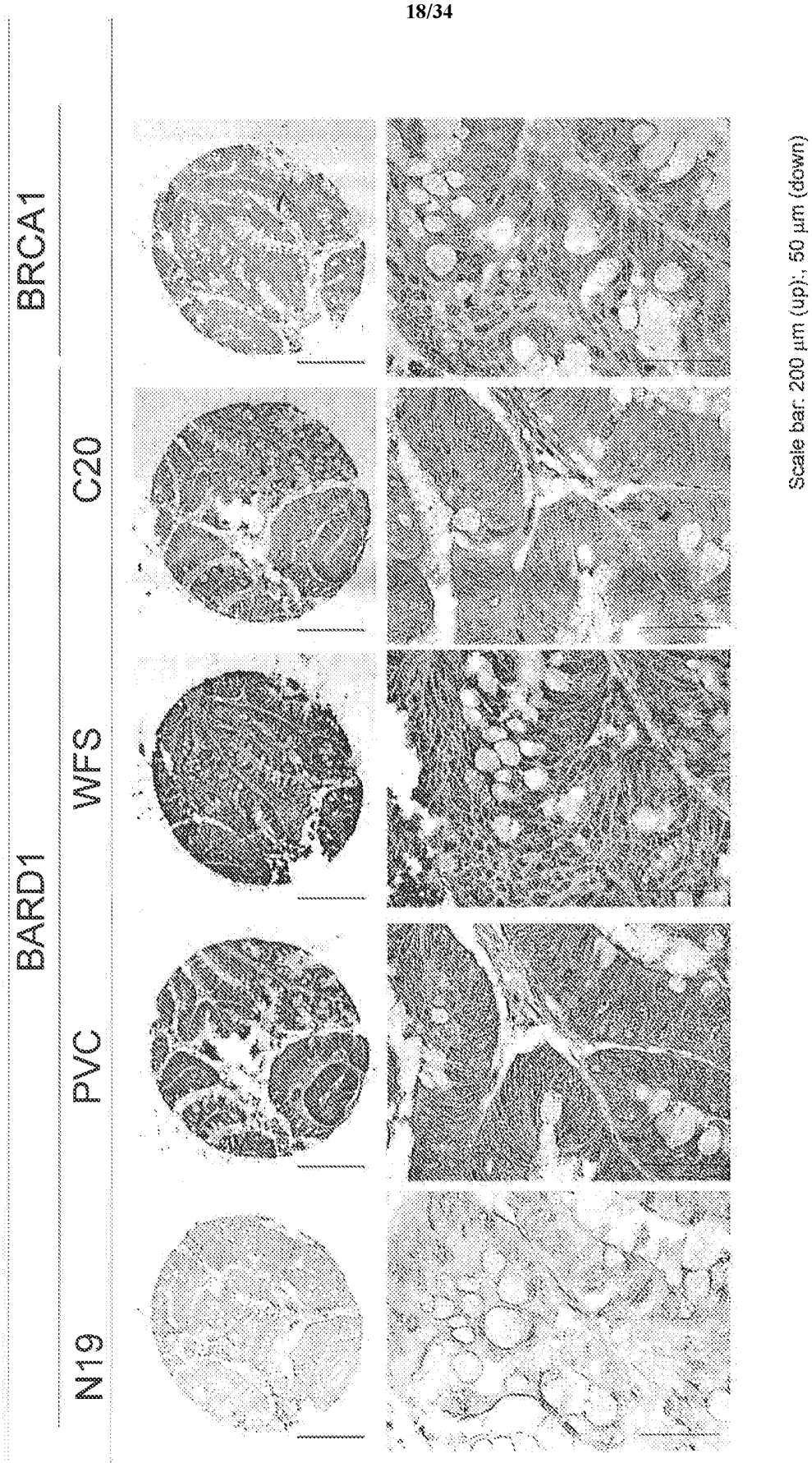


Figure. 8D

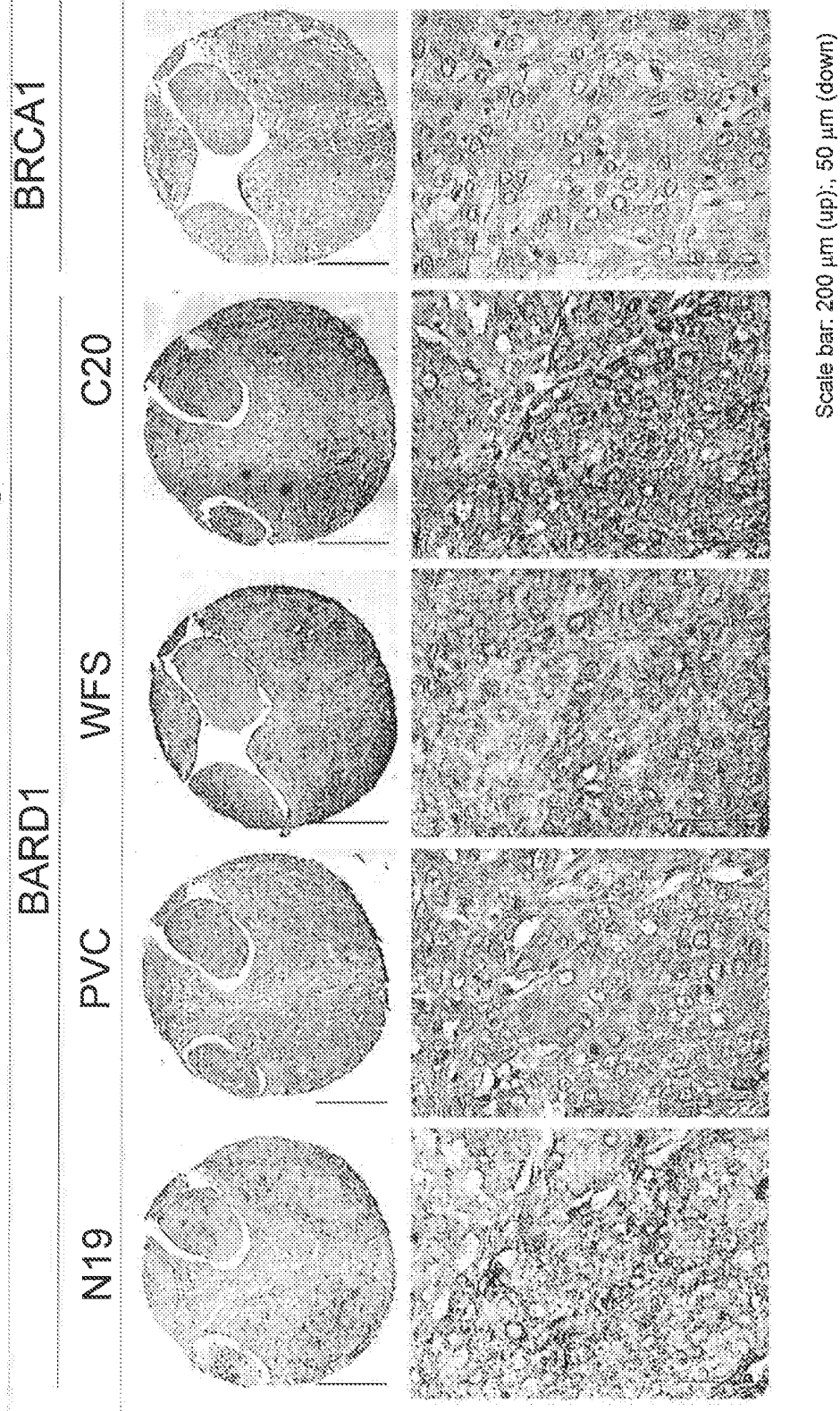


Figure. 8E

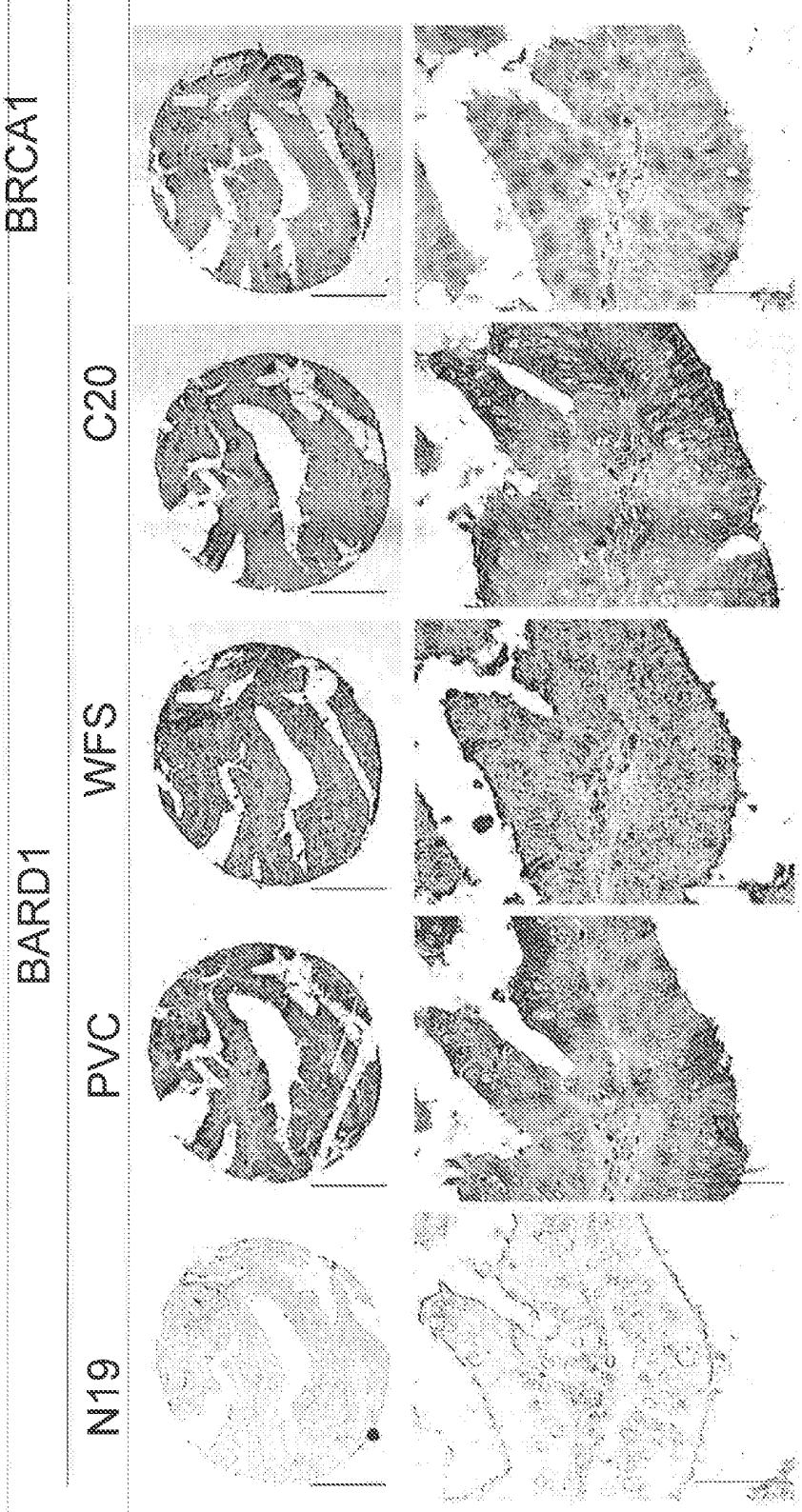


Figure. 8F

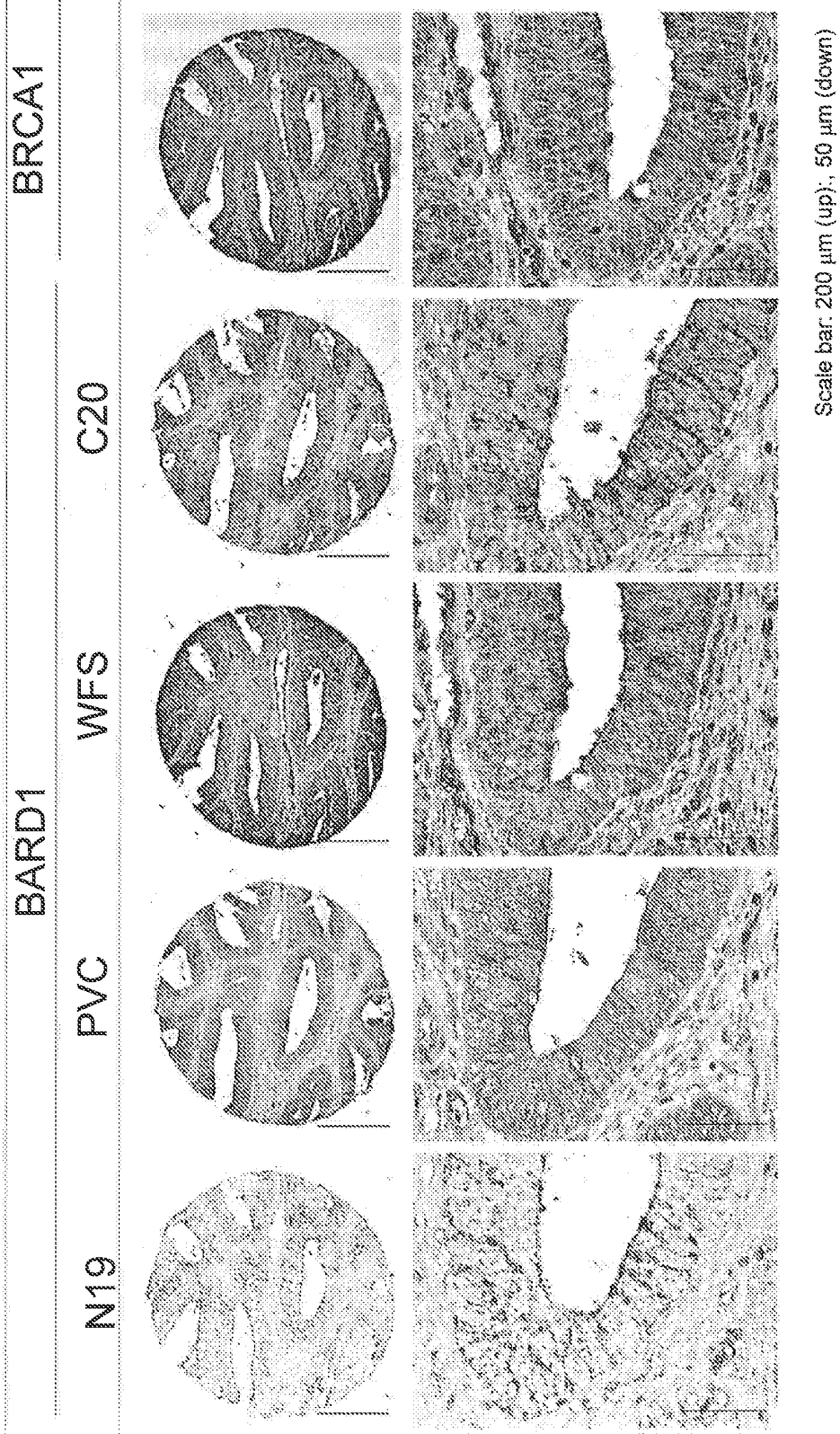


Figure 9A

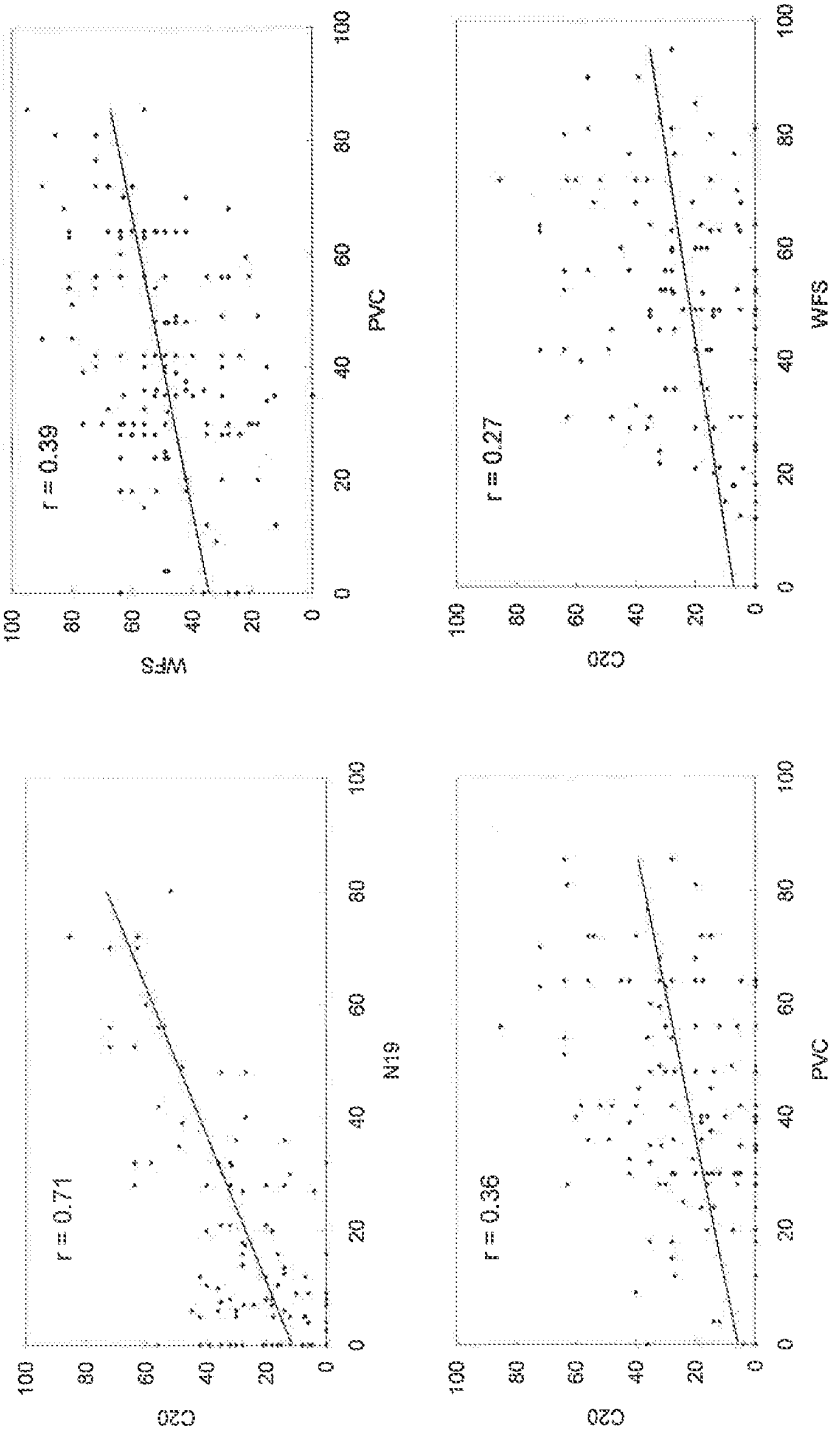

r = 0.39
WFS
PVC
r = 0.27
C20
WFS
r = 0.71
C20
N19
r = 0.36
C20
PVC
0
20
40
60
80
100

Figure 9A

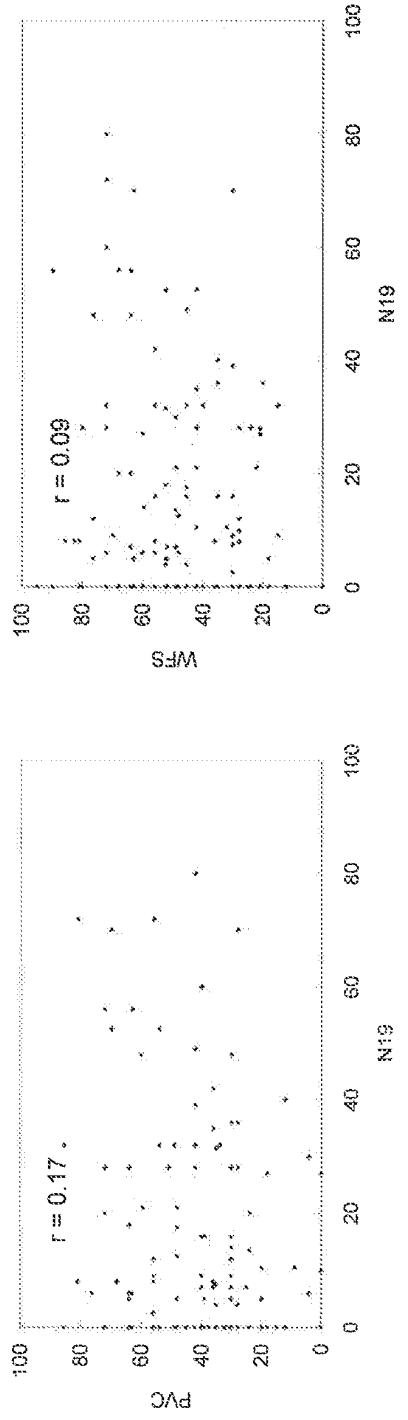


Figure 9B

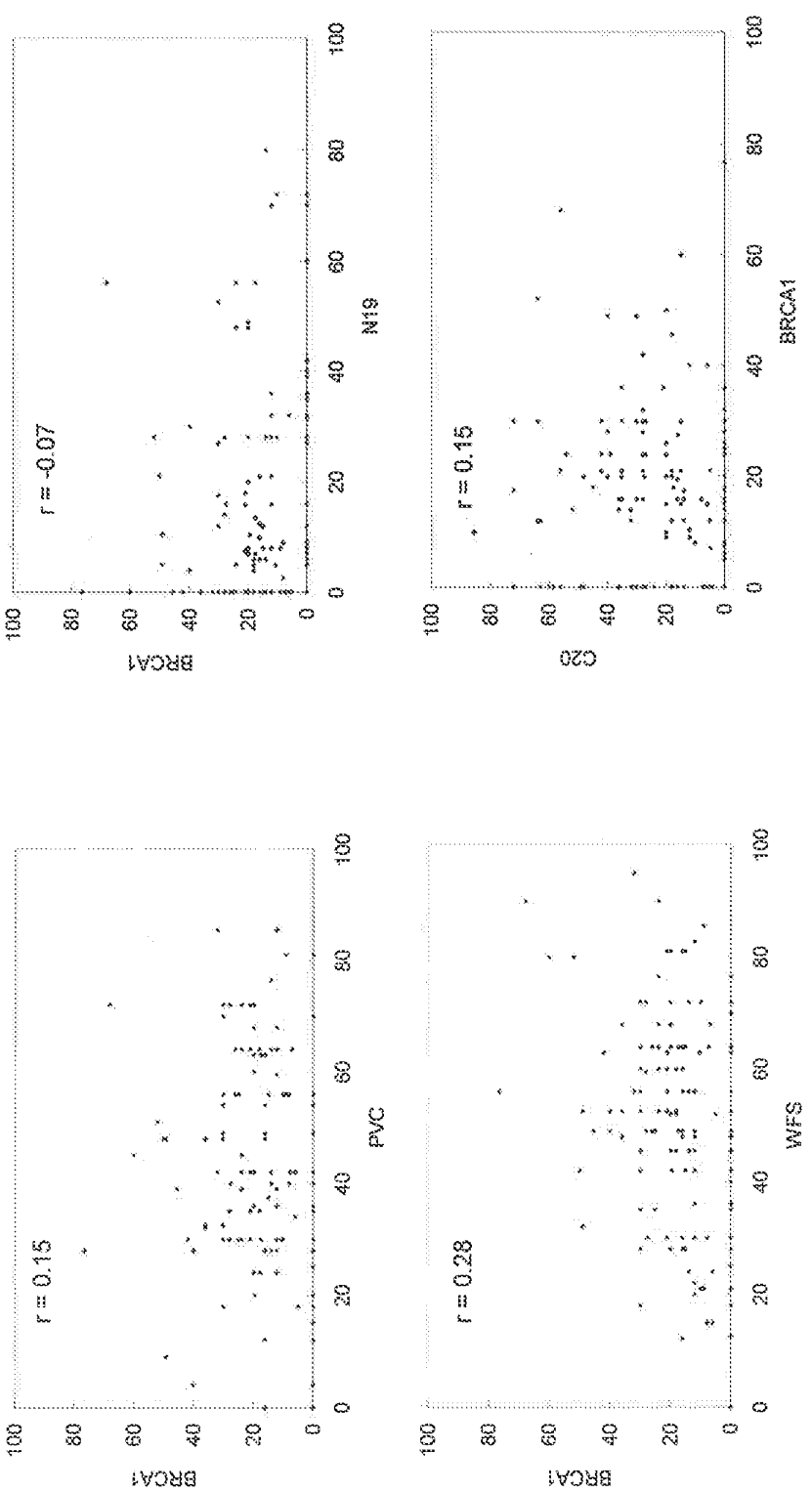


Figure 10

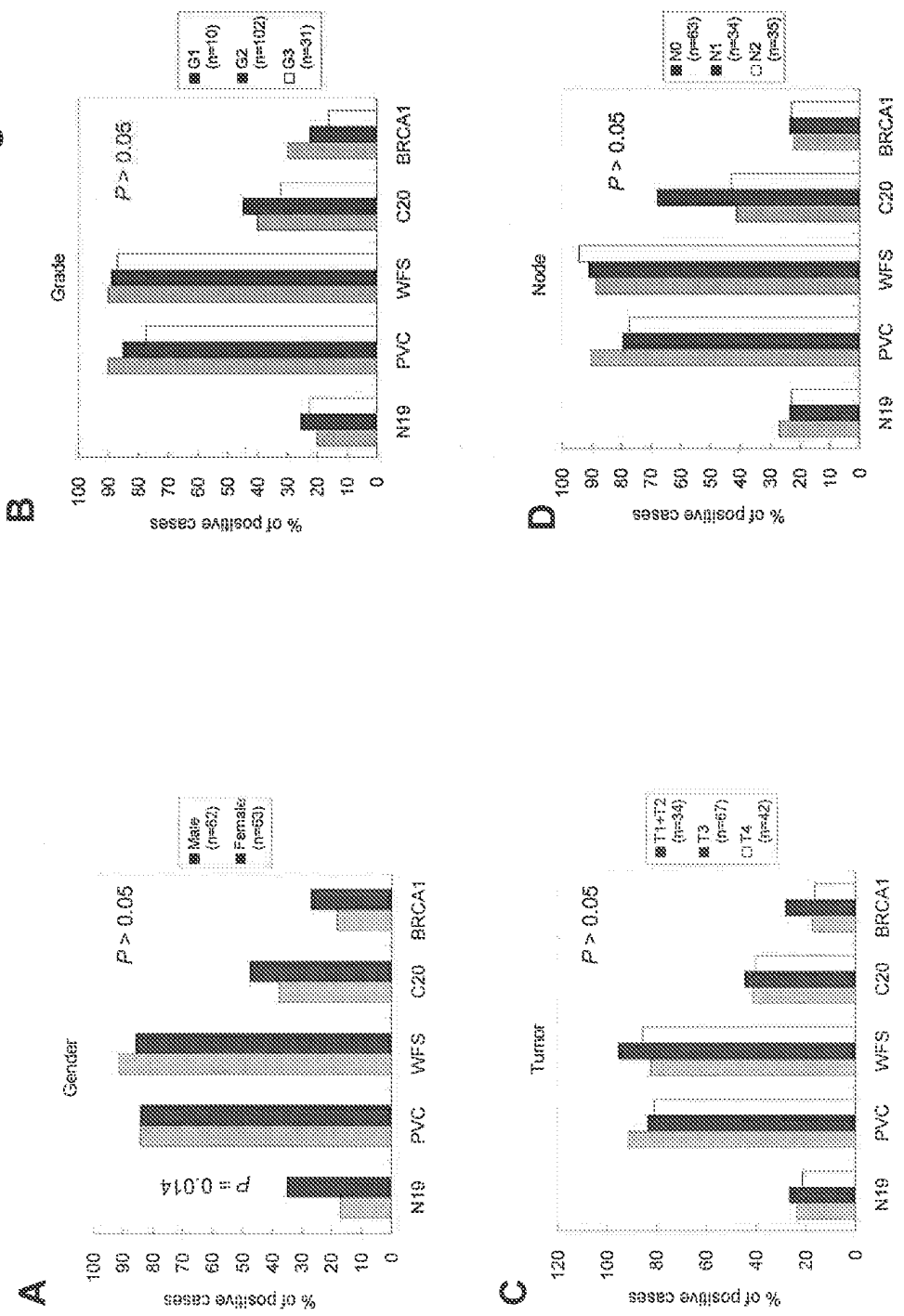

A
Gender
P > 0.05
P = 0.014
Male (n=82)
Female (n=53)
% of positive cases
N19
PVC
WFS
C20
BRCA1
B
Grade
P > 0.05
G1 (n=10)
G2 (n=102)
G3 (n=31)
C
Tumor
P > 0.05
T1+T2 (n=34)
T3 (n=67)
T4 (n=42)
D
Node
P > 0.05
N0 (n=63)
N1 (n=34)
N2 (n=35)

Figure 10

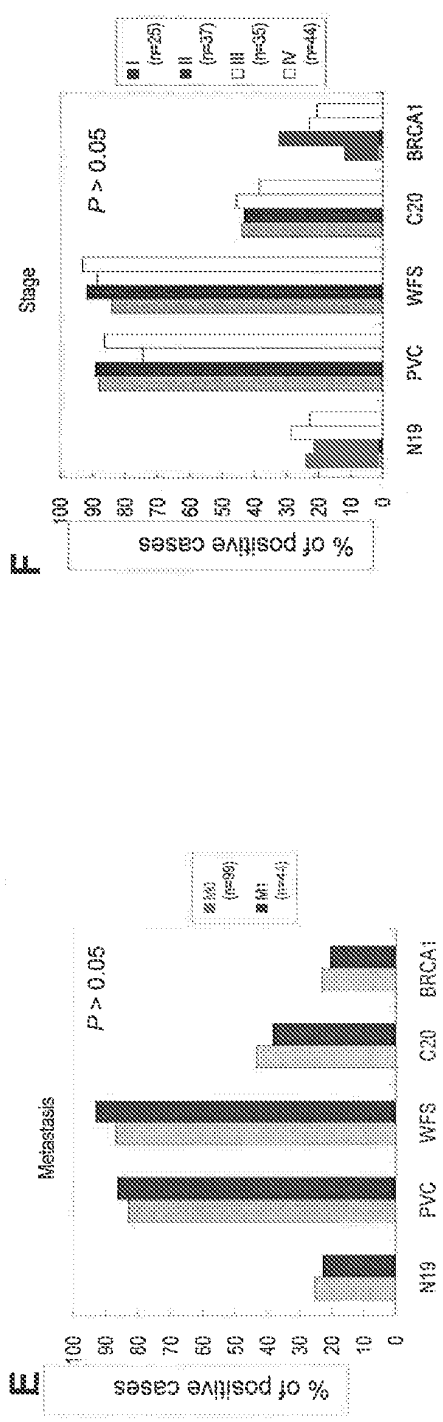

E
% of positive cases
100
90
80
70
60
50
40
30
20
10
0
Metastasis
P > 0.05
N19
PVC
WFS
C20
BRCA1
F
% of positive cases
Stage
P > 0.05
I (n=25)
II (n=37)
III (n=35)
IV (n=44)
N19
PVC
WFS
C20
BRCA1

Figure 11

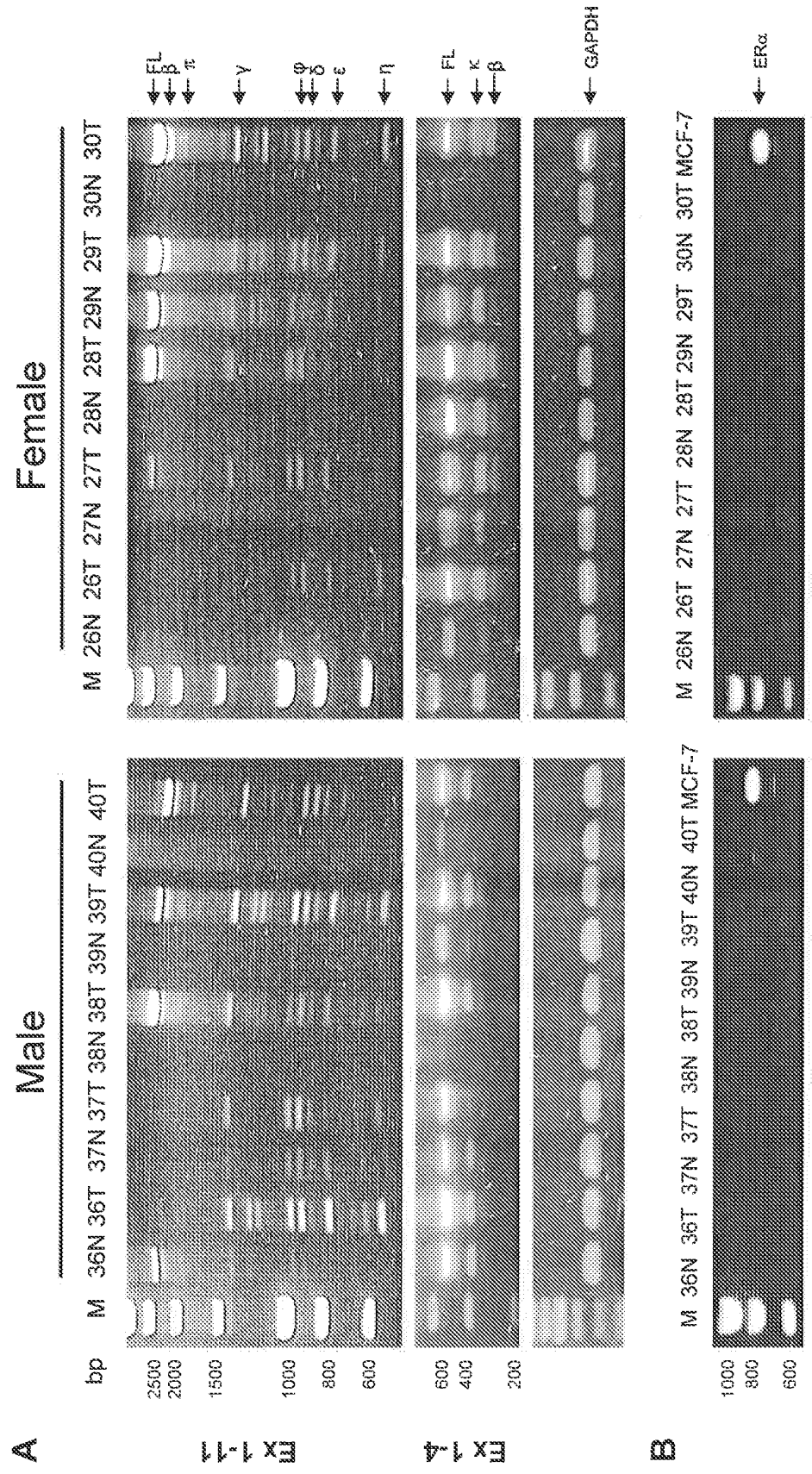

A
Male
bp
M 36N 36T 37N 37T 38N 38T 39N 39T 40N 40T
2500
2000
1500
1000
800
600
Ex 1-11
600
400
200
Ex 1-4
B
M 36N 36T 37N 37T 38N 38T 39N 39T 40N 40T MCF-7
1000
800
600
Female
M 26N 26T 27N 27T 28N 28T 29N 29T 30N 30T
FL
β
π
γ
φ
δ
ε
η
FL
κ
β
GAPDH
M 26N 26T 27N 27T 28N 28T 29N 29T 30N 30T MCF-7
ERα

Figure 12

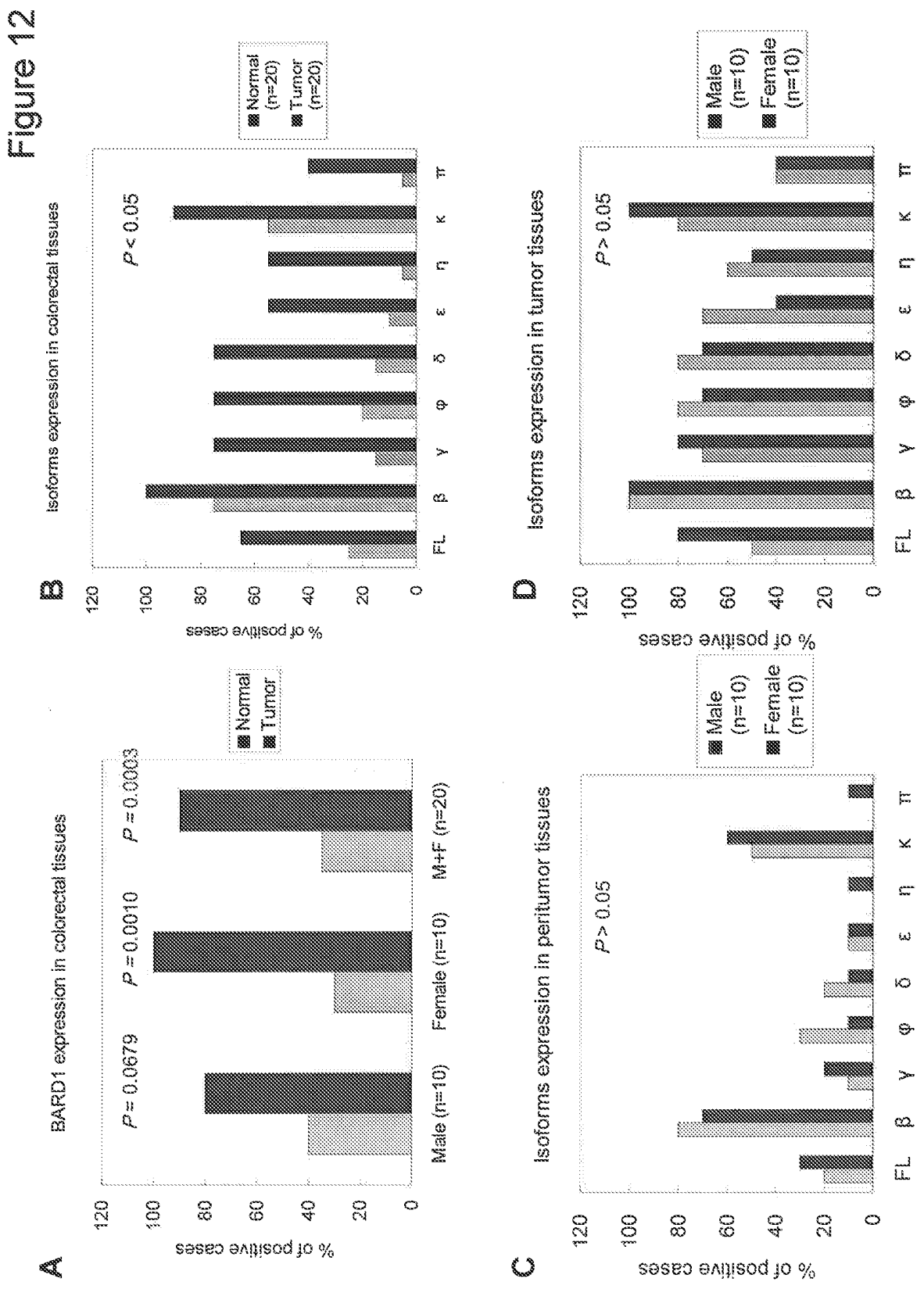

A
BARD1 expression in colorectal tissues
P = 0.0679
P = 0.0010
P = 0.0003
Normal
Tumor
% of positive cases
Male (n=10)
Female (n=10)
M+F (n=20)
B
Isoforms expression in colorectal tissues
P < 0.05
Normal (n=20)
Tumor (n=20)
% of positive cases
FL β γ φ δ ε η κ π
C
Isoforms expression in peritumor tissues
P > 0.05
Male (n=10)
Female (n=10)
% of positive cases
FL β γ φ δ ε η κ π
D
Isoforms expression in tumor tissues
P > 0.05
Male (n=10)
Female (n=10)
% of positive cases
FL β γ φ δ ε η κ π

Figure 13

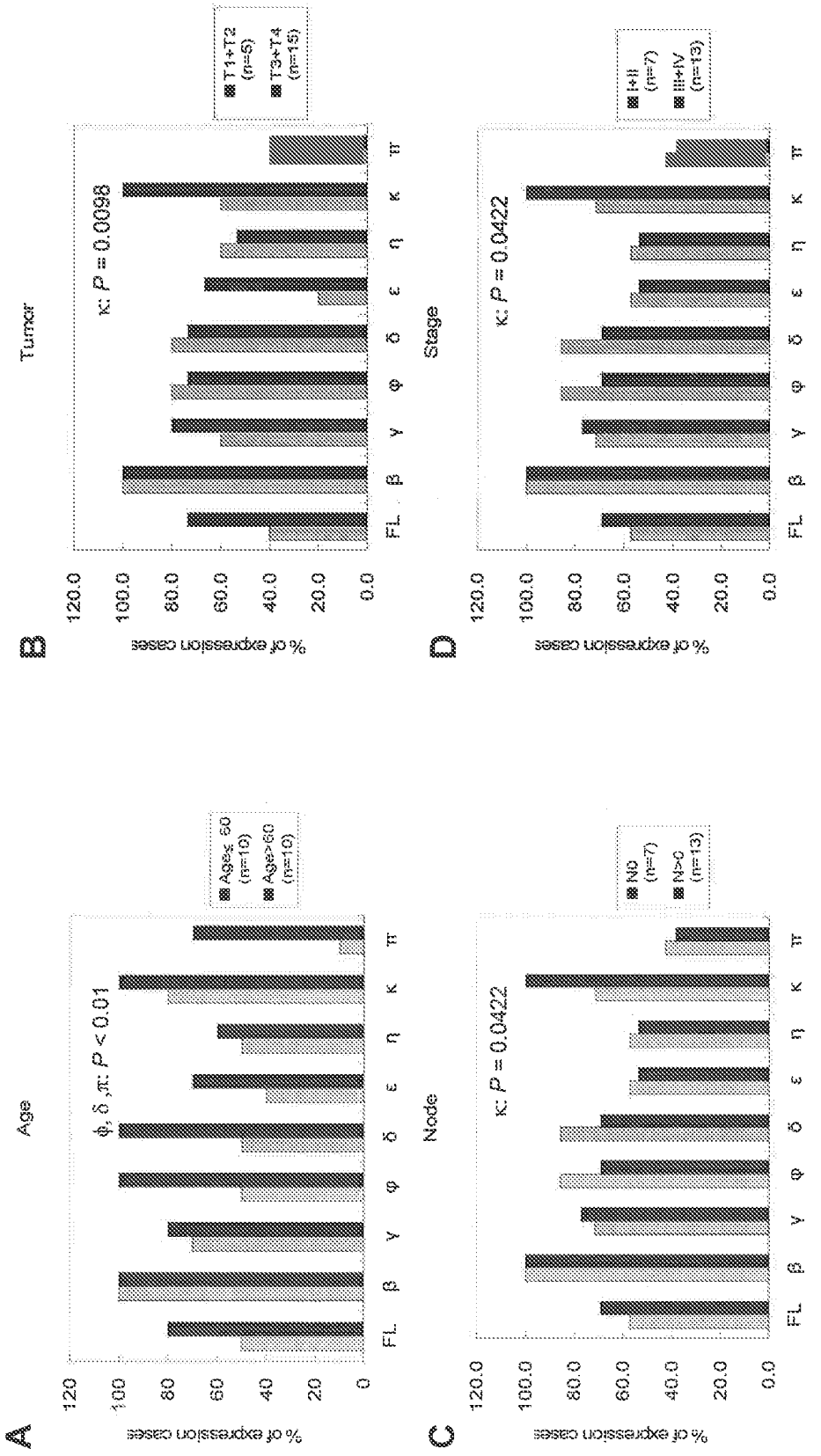

A
Age
ϕ, δ ,π: P < 0.01
Age≤ 60 (n=10)
Age>60 (n=10)
% of expression cases
B
Tumor
κ: P = 0.0098
T1+T2 (n=5)
T3+T4 (n=15)
% of expression cases
C
Node
κ: P = 0.0422
N0 (n=7)
N>0 (n=13)
% of expression cases
D
Stage
κ: P = 0.0422
I+II (n=7)
III+IV (n=13)
% of expression cases
FL β γ φ δ ε η κ π

Figure 13E

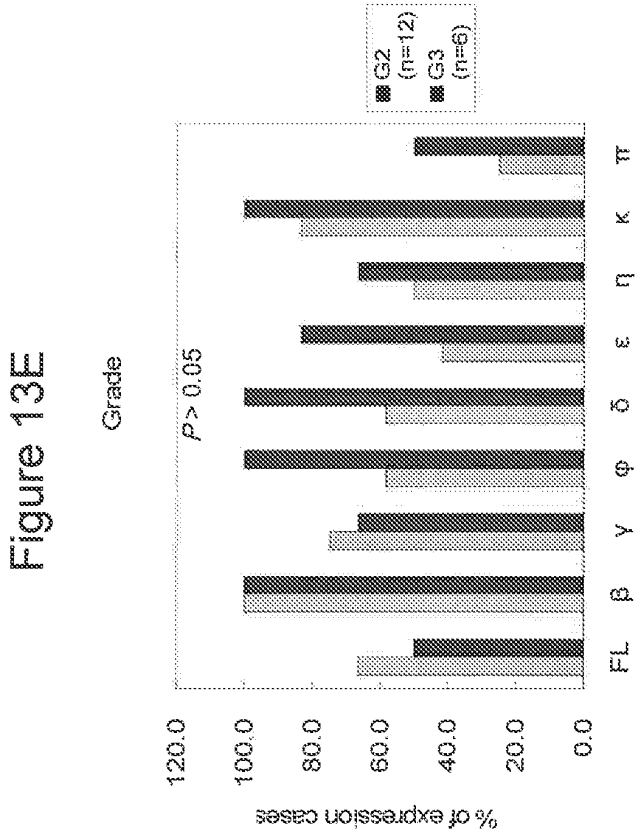

Grade
P > 0.05
G2 (n=12)
G3 (n=6)
% of expression cases
120.0
100.0
80.0
60.0
40.0
20.0
0.0
FL
β
γ
φ
δ
ε
η
κ
π

Figure 14

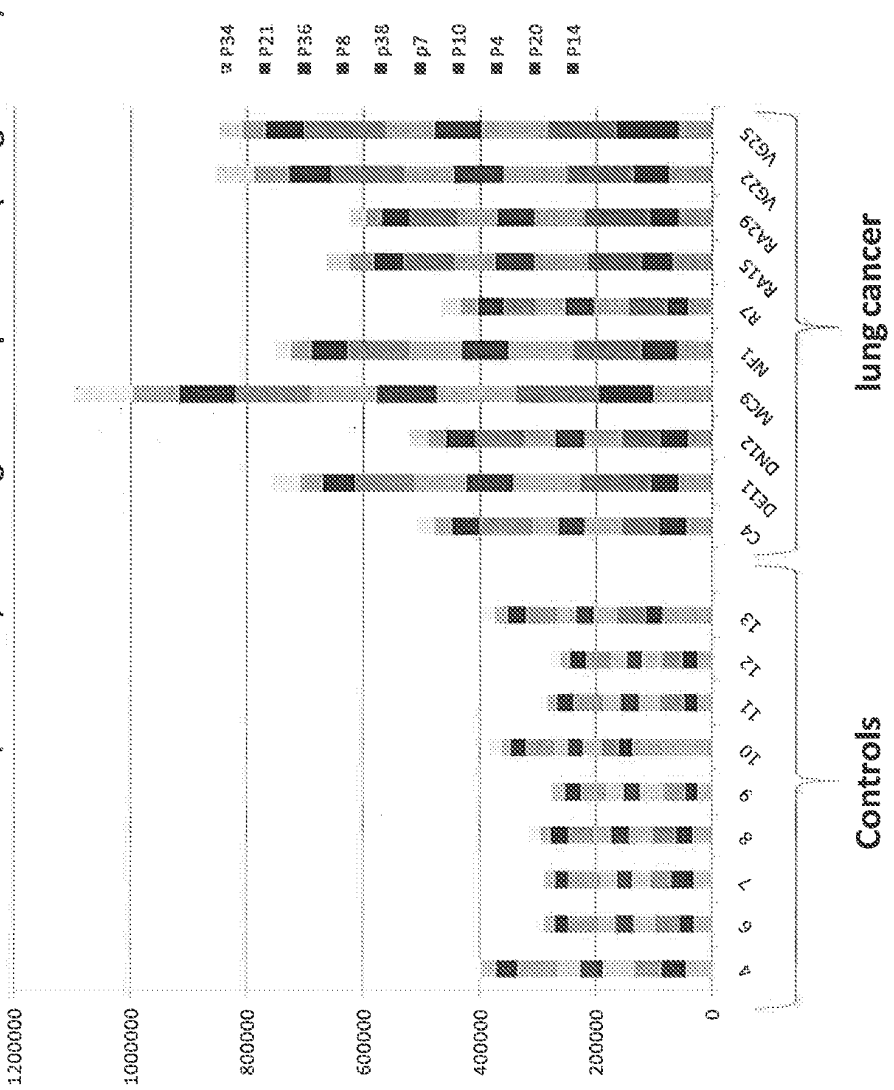

Example of test performed with serum from blood donors (controls) and lung cancer patients (lung cancer)
1200000
1000000
800000
600000
400000
200000
0
P34
P21
P36
P8
p38
p7
P10
P4
P20
P14
4
6
7
8
9
10
11
12
13
C4
DE11
DN12
MC9
N°1
R7
RA15
RA29
V622
V625
Controls
lung cancer

Figure 15

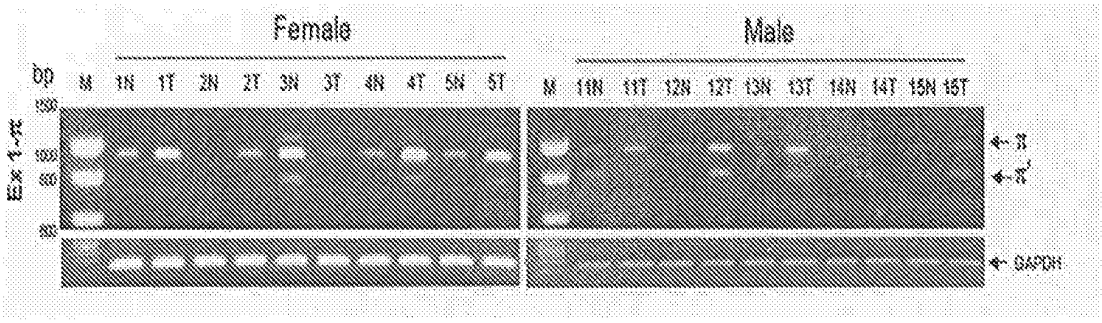


Figure 16

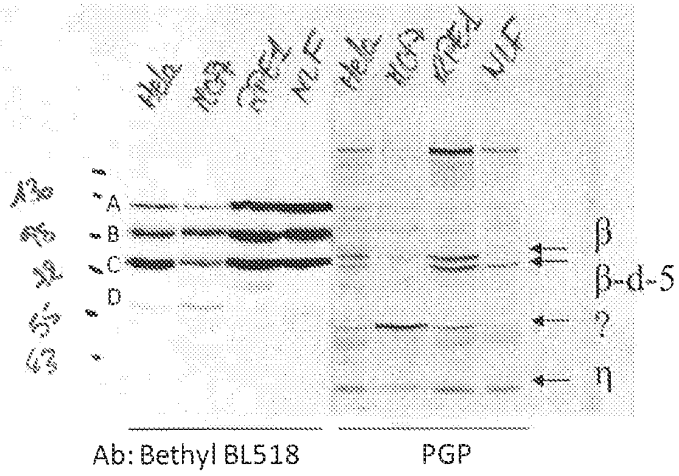


Figure 17

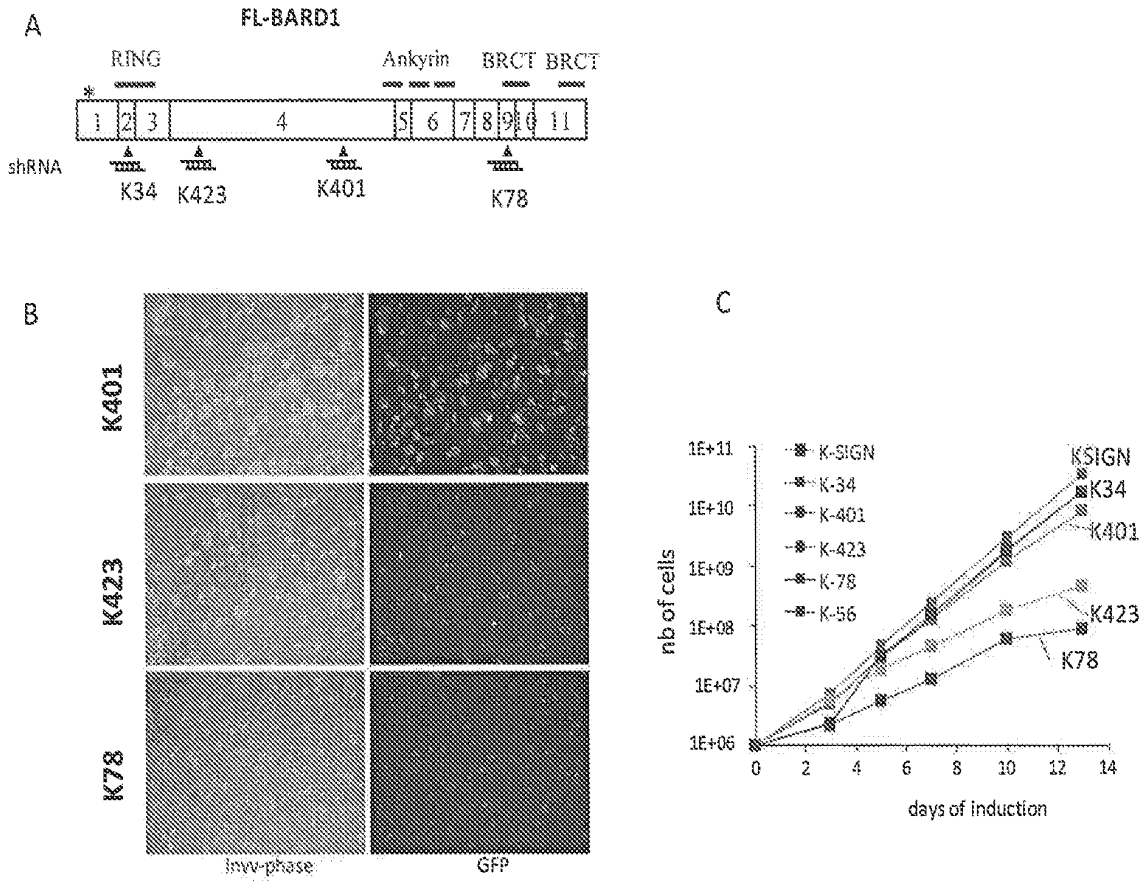
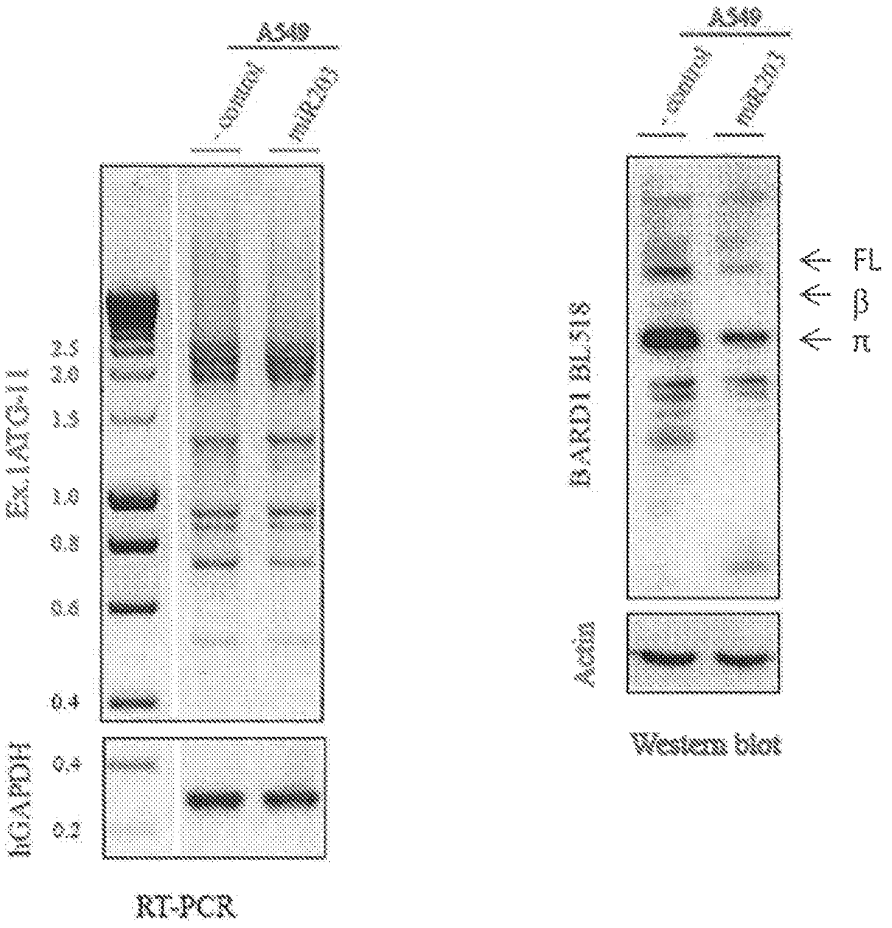

A
FL-BARD1
RING
Ankyrin
BRCT
BRCT
1
2
3
4
5
6
7
8
9
10
11
shRNA
K34
K423
K401
K78
B
K401
K423
K78
Invv-phase
GFP
C
K-SIGN
K-34
K-401
K-423
K-78
K-56
1E+11
1E+10
1E+09
1E+08
1E+07
1E+06
nb of cells
0
2
4
6
8
10
12
14
days of induction
KSIGN
K34
K401
K423
K78

Figure 18


A549
control
miR203
Ex.IATG-11
2.5
2.0
1.5
1.0
0.8
0.6
0.4
hGAPDH
0.4
0.2
RT-PCR
A549
control
miR203
BARD1 BL518
Actin
FL
β
α
Western blot