FIG. 1A

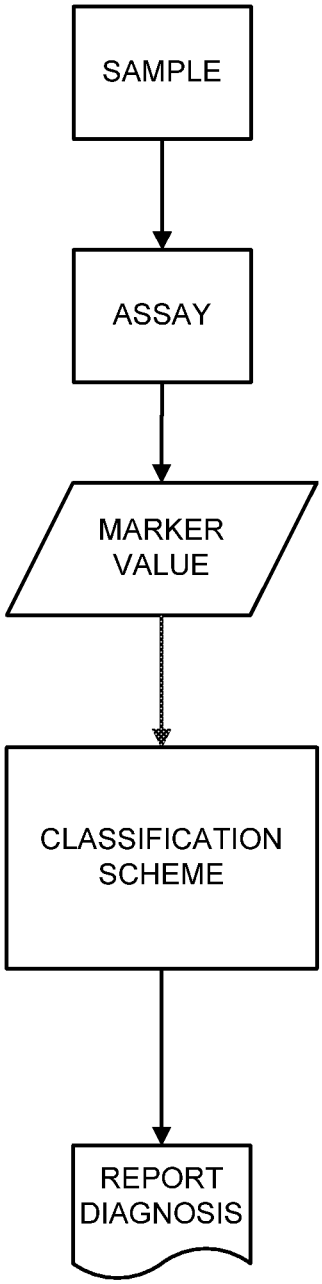

SAMPLE
ASSAY
MARKER VALUE
CLASSIFICATION SCHEME
REPORT DIAGNOSIS

FIG. 1B

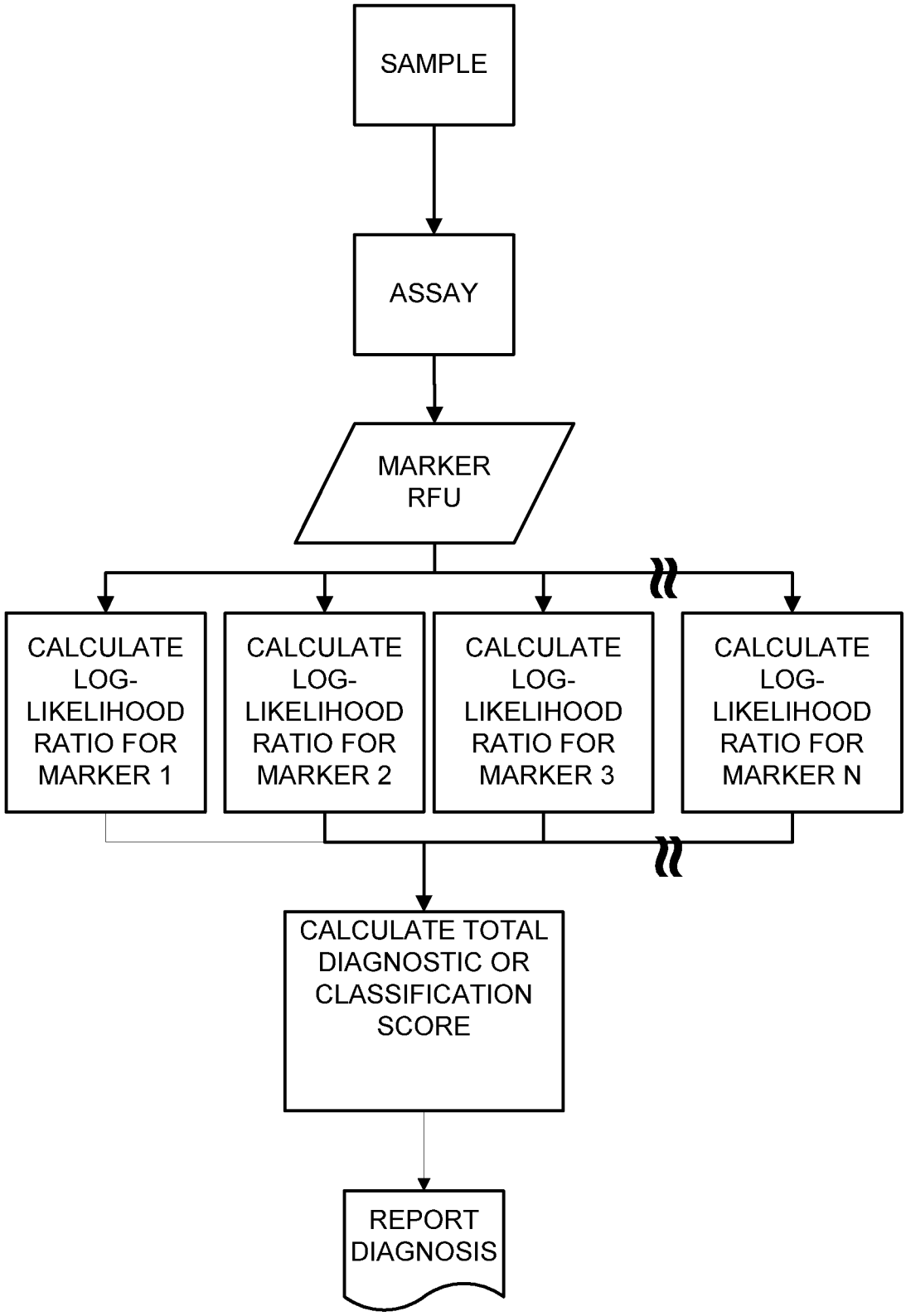

SAMPLE
ASSAY
MARKER RFU
CALCULATE LOG-LIKELIHOOD RATIO FOR MARKER 1
CALCULATE LOG-LIKELIHOOD RATIO FOR MARKER 2
CALCULATE LOG-LIKELIHOOD RATIO FOR MARKER 3
CALCULATE LOG-LIKELIHOOD RATIO FOR MARKER N
CALCULATE TOTAL DIAGNOSTIC OR CLASSIFICATION SCORE
REPORT DIAGNOSIS

FIG. 2

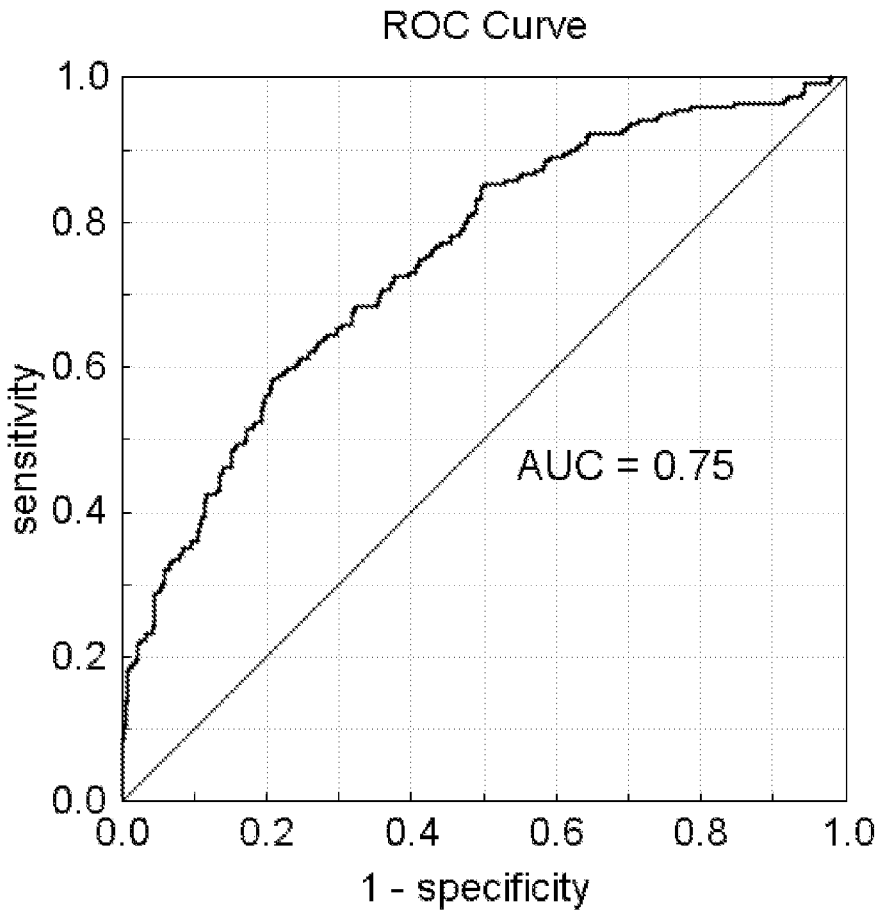

ROC Curve
1.0
0.8
0.6
0.4
0.2
0.0
sensitivity
AUC = 0.75
0.0
0.2
0.4
0.6
0.8
1.0
1 - specificity

FIG. 3

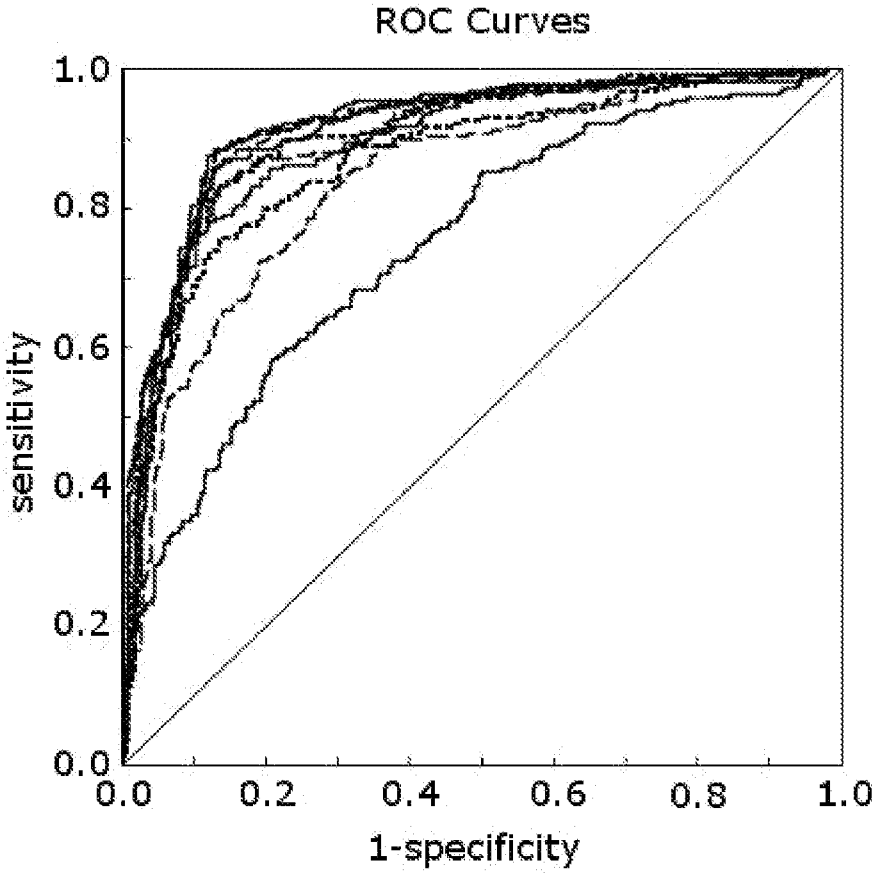


FIG. 4

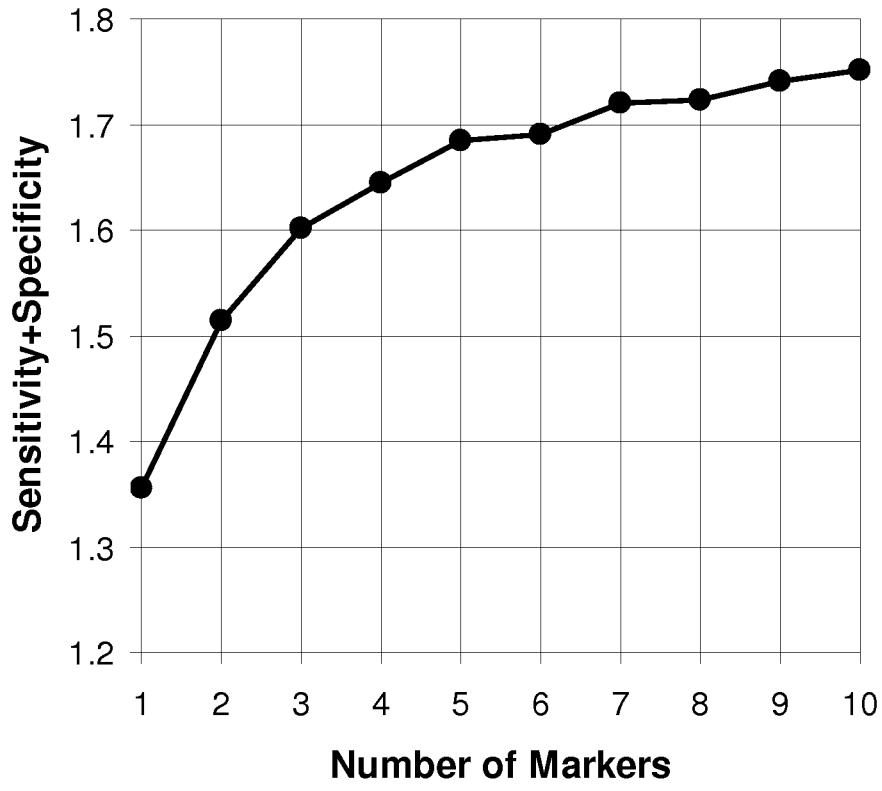

Sensitivity+Specificity
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1
2
3
4
5
6
7
8
9
10
Number of Markers

FIG. 5

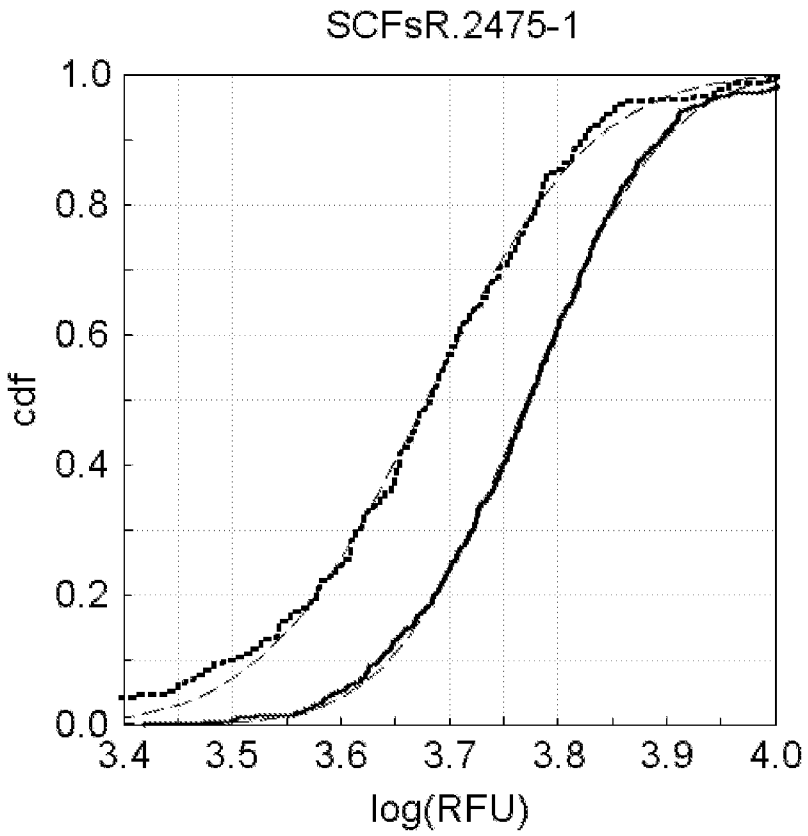


FIG. 6

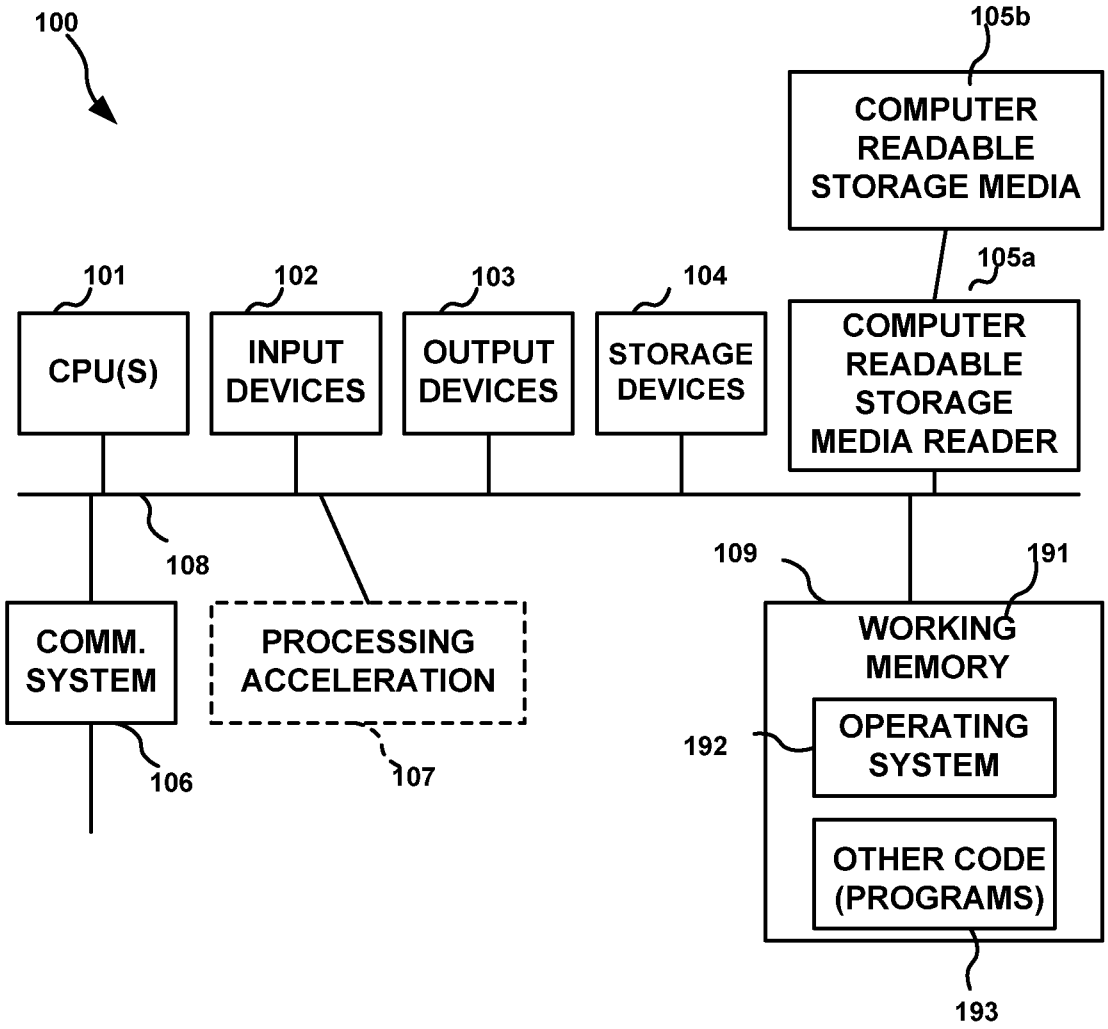

100
105b
COMPUTER READABLE STORAGE MEDIA
105a
101
102
103
104
CPU(S)
INPUT DEVICES
OUTPUT DEVICES
STORAGE DEVICES
COMPUTER READABLE STORAGE MEDIA READER
108
109
191
COMM. SYSTEM
PROCESSING ACCELERATION
WORKING MEMORY
192
OPERATING SYSTEM
OTHER CODE (PROGRAMS)
106
107
193

FIG. 7

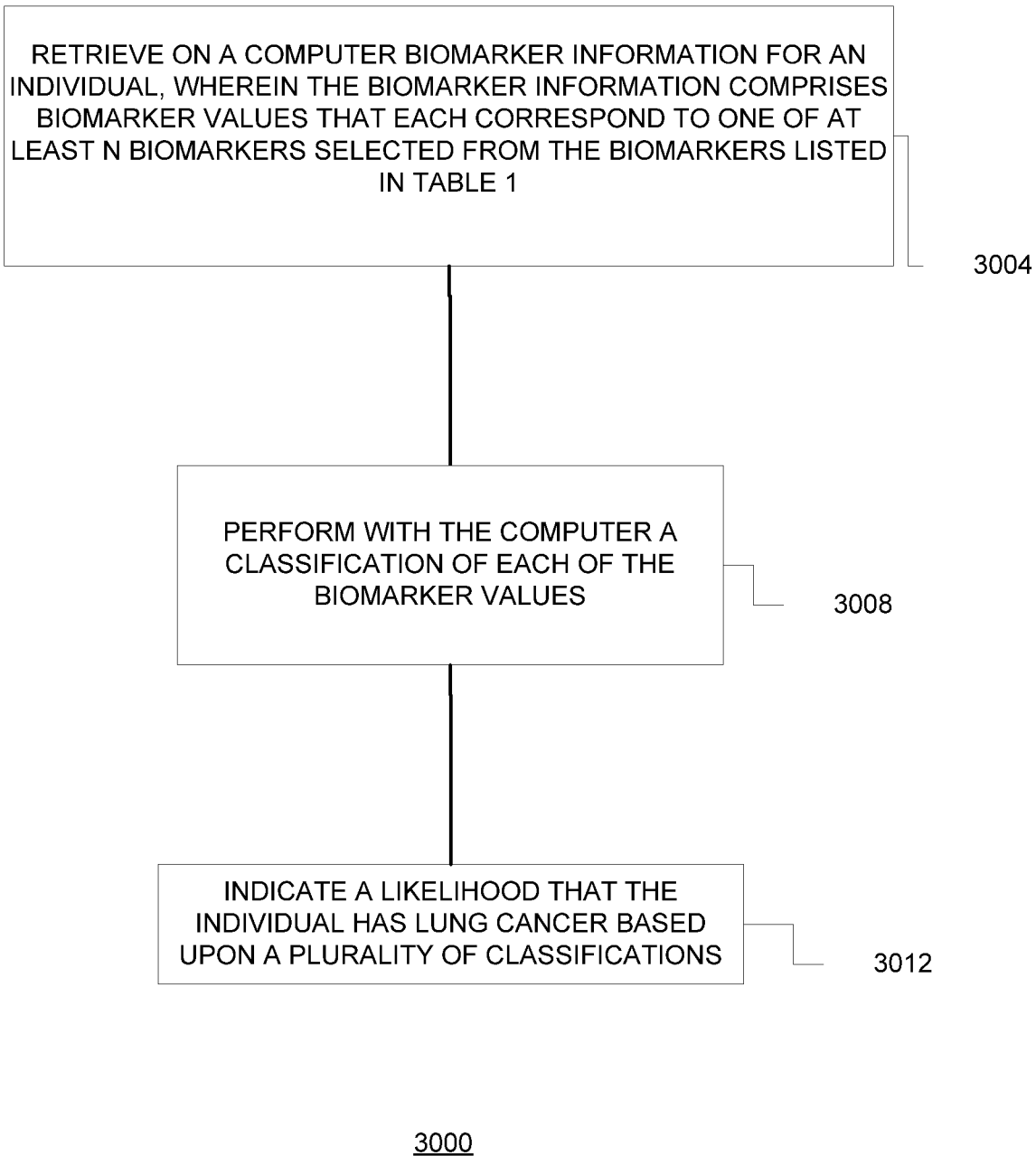

RETRIEVE ON A COMPUTER BIOMARKER INFORMATION FOR AN INDIVIDUAL, WHEREIN THE BIOMARKER INFORMATION COMPRISES BIOMARKER VALUES THAT EACH CORRESPOND TO ONE OF AT LEAST N BIOMARKERS SELECTED FROM THE BIOMARKERS LISTED IN TABLE 1
3004
PERFORM WITH THE COMPUTER A CLASSIFICATION OF EACH OF THE BIOMARKER VALUES
3008
INDICATE A LIKELIHOOD THAT THE INDIVIDUAL HAS LUNG CANCER BASED UPON A PLURALITY OF CLASSIFICATIONS
3012
3000

FIG. 8

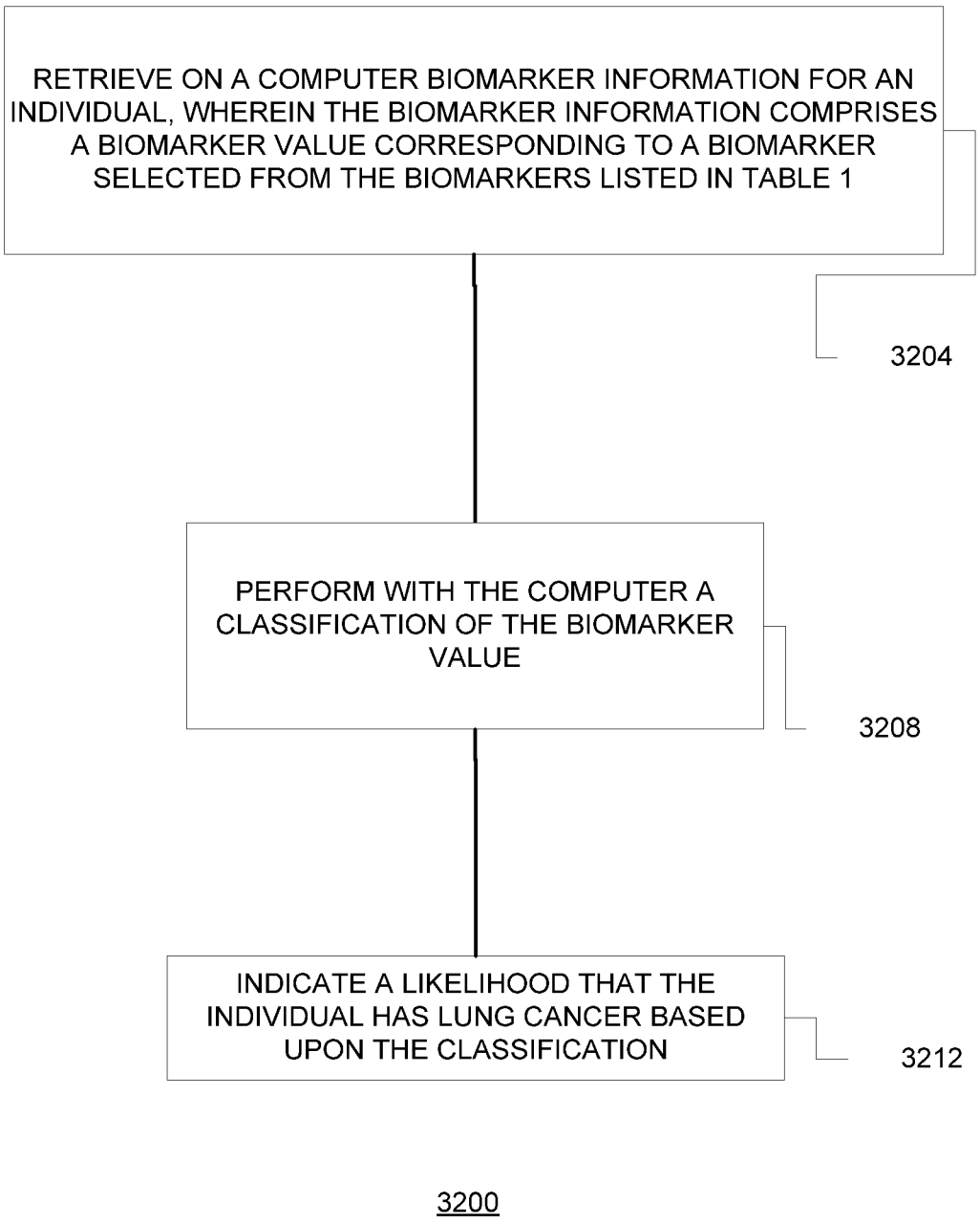

RETRIEVE ON A COMPUTER BIOMARKER INFORMATION FOR AN INDIVIDUAL, WHEREIN THE BIOMARKER INFORMATION COMPRISES A BIOMARKER VALUE CORRESPONDING TO A BIOMARKER SELECTED FROM THE BIOMARKERS LISTED IN TABLE 1
3204
PERFORM WITH THE COMPUTER A CLASSIFICATION OF THE BIOMARKER VALUE
3208
INDICATE A LIKELIHOOD THAT THE INDIVIDUAL HAS LUNG CANCER BASED UPON THE CLASSIFICATION
3212
3200

FIG. 9

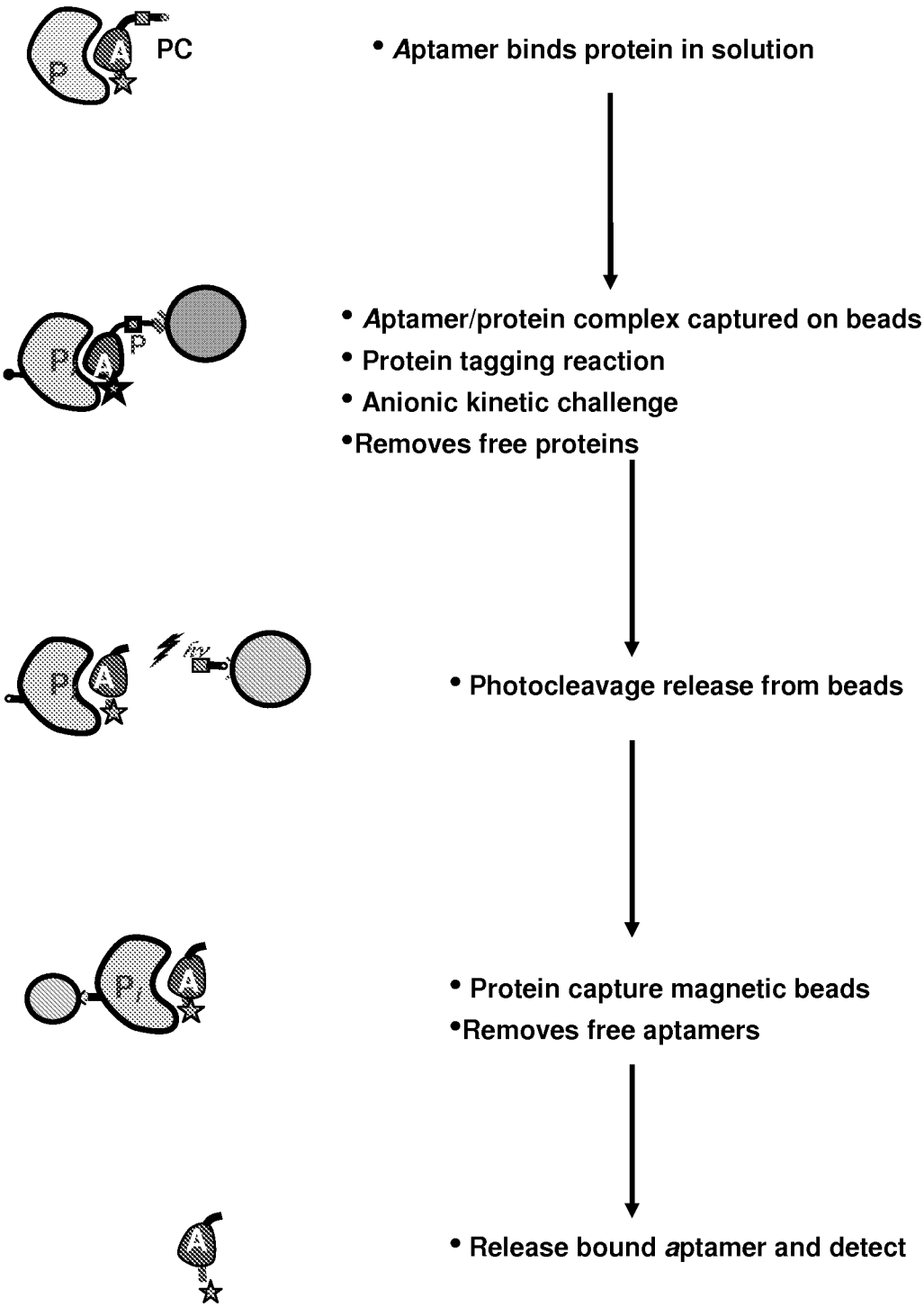

P
A
PC
• Aptamer binds protein in solution
P
P
A
• Aptamer/protein complex captured on beads
• Protein tagging reaction
• Anionic kinetic challenge
•Removes free proteins
P
A
hν
• Photocleavage release from beads
P
A
• Protein capture magnetic beads
•Removes free aptamers
A
• Release bound aptamer and detect

FIG. 10

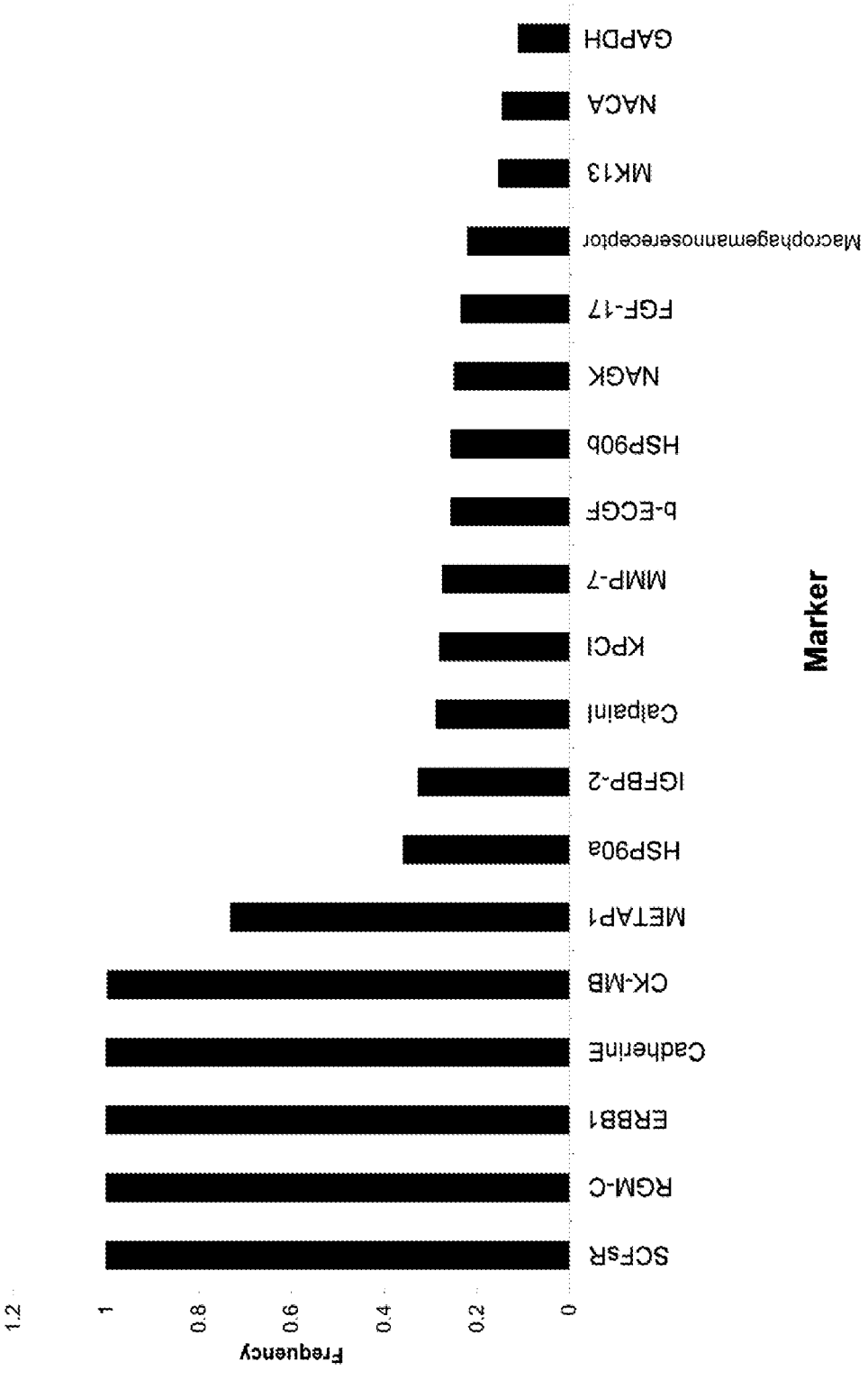

Frequency
1.2
1
0.8
0.6
0.4
0.2
0
Marker
SCFsR
RGM-C
ERBB1
Cadherin E
CK-MB
METAP1
HSP90a
IGFBP-2
Calpain I
KPCI
MMP-7
b-ECGF
HSP90b
NAGK
FGF-17
Macrophagemannosereceptor
MK13
NACA
GAPDH

FIG. 11

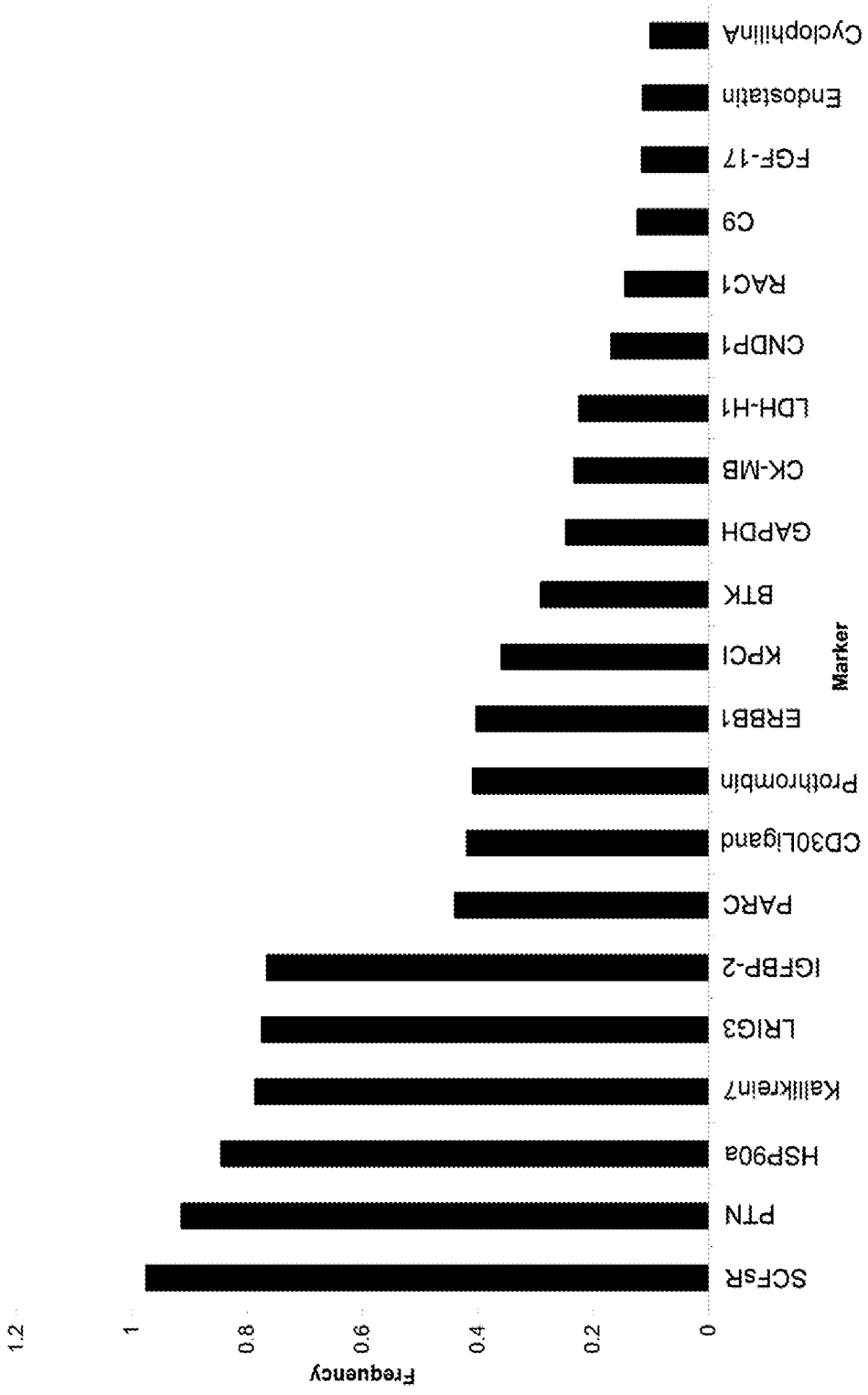

SCFsR
PTN
HSP90a
Kallikrein7
LRIG3
IGFBP-2
PARC
CD30Ligand
Prothrombin
ERBB1
KPCI
BTK
GAPDH
CK-MB
LDH-H1
CNDP1
RAC1
C9
FGF-17
Endostatin
CyclophilinA
Marker
Frequency
0
0.2
0.4
0.6
0.8
1
1.2

FIG. 12

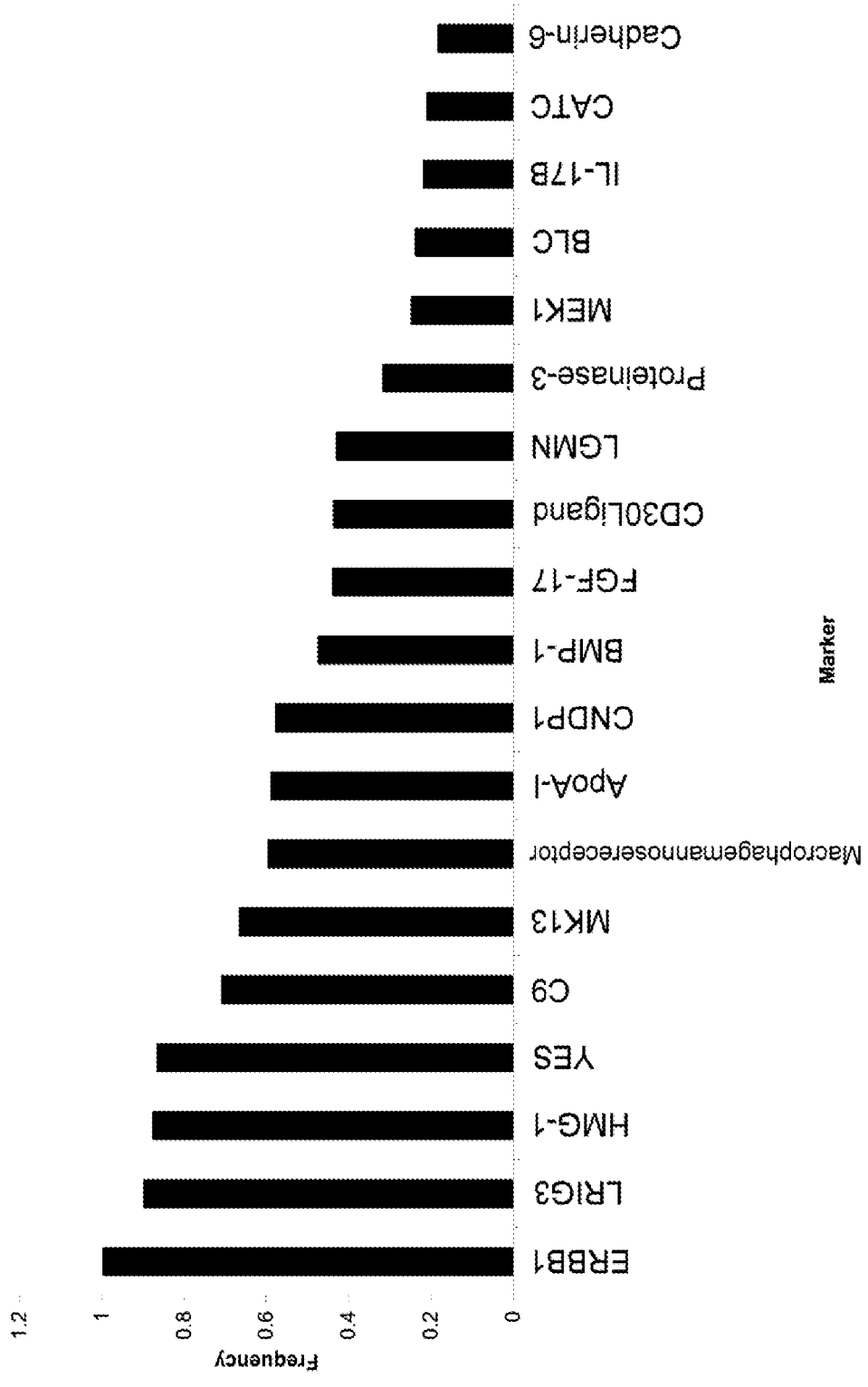

ERBB1
LRIG3
HMG-1
YES
C9
MK13
Macrophagemannosereceptor
ApoA-I
CNDP1
BMP-1
FGF-17
CD30Ligand
LGMN
Proteinase-3
MEK1
BLC
IL-17B
CATC
Cadherin-6
Marker
Frequency
0
0.2
0.4
0.6
0.8
1
1.2

FIG. 13

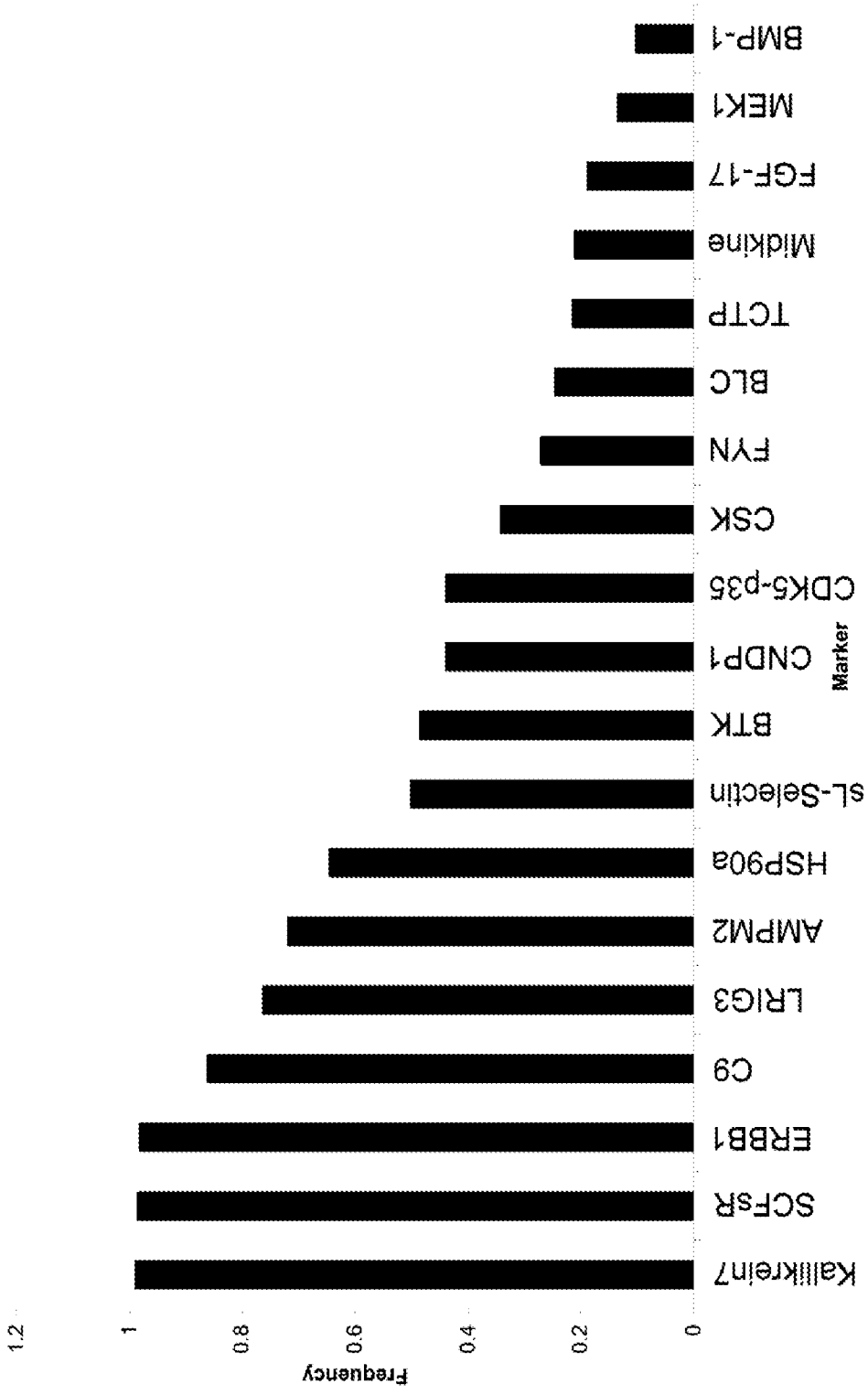

Kallikrein7
SCFsR
ERBB1
C9
LRIG3
AMPM2
HSP90a
sL-Selectin
BTK
CNDP1
CDK5-p35
CSK
FYN
BLC
TCTP
Midkine
FGF-17
MEK1
BMP-1
Marker
Frequency
0
0.2
0.4
0.6
0.8
1
1.2

FIG. 14

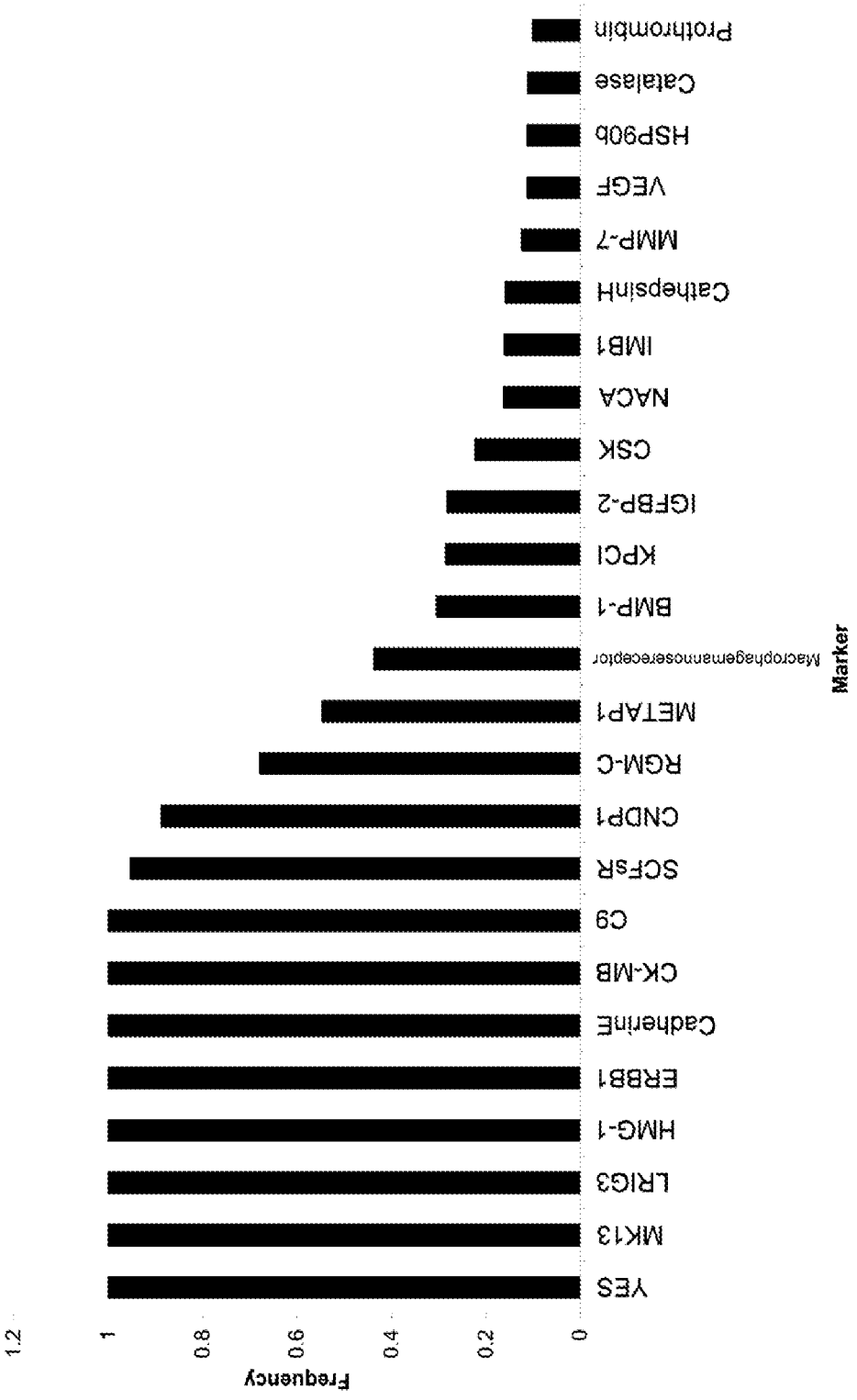

YES
MK13
LRIG3
HMG-1
ERBB1
Cadherine
CK-MB
C9
SCFsR
CNDP1
RGM-C
METAP1
Macrophagemannosereceptor
BMP-1
KPCI
IGFBP-2
CSK
NACA
IMB1
Cathepsin H
MMP-7
VEGF
HSP90b
Catalase
Prothrombin
Marker
Frequency
0
0.2
0.4
0.6
0.8
1
1.2

FIG. 15

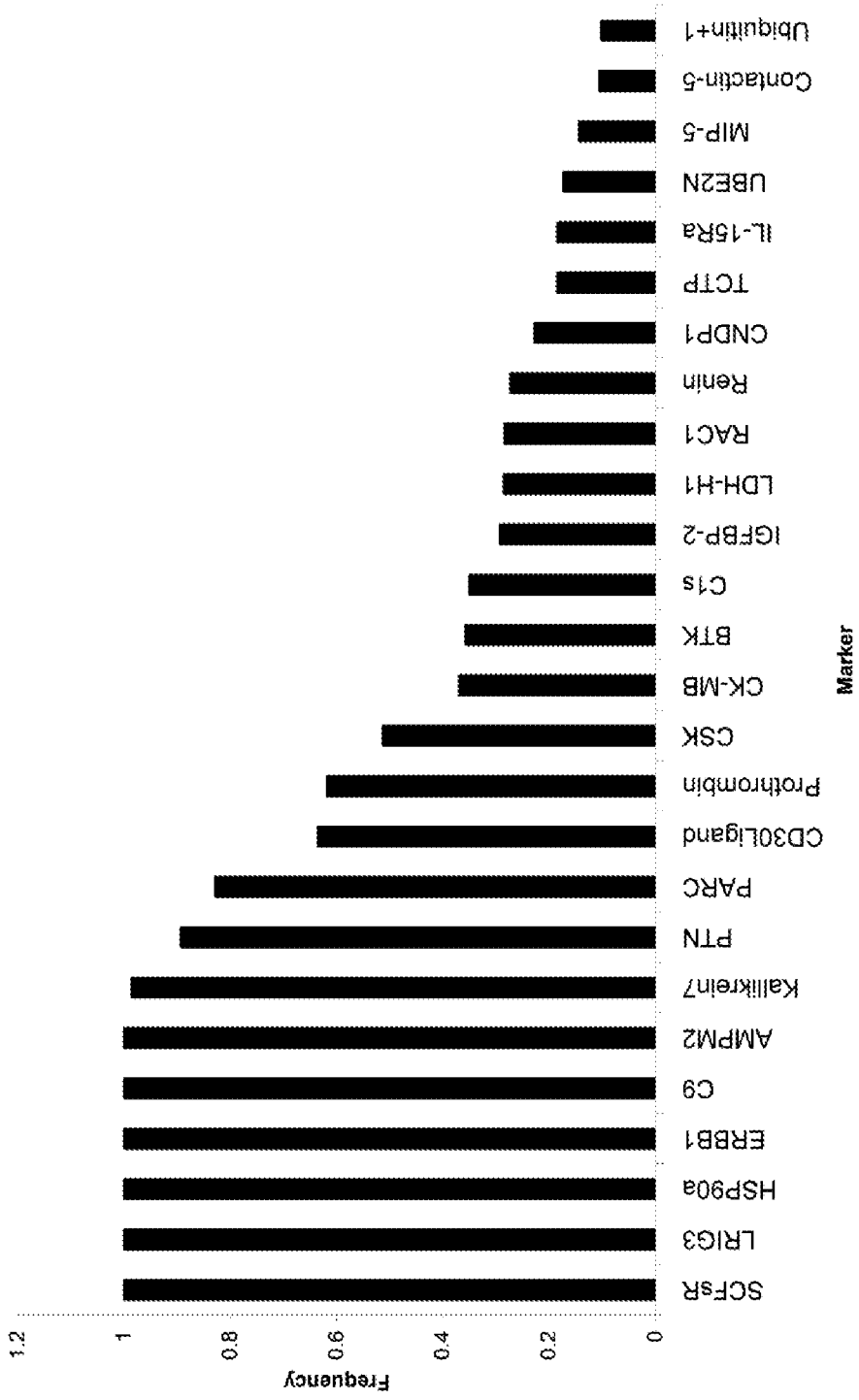

SCFsR
LRIG3
HSP90a
ERBB1
C9
AMPM2
Kallikrein7
PTN
PARC
CD30Ligand
Prothrombin
CSK
CK-MB
BTK
C1s
IGFBP-2
LDH-H1
RAC1
Renin
CNDP1
TCTP
IL-15Ra
UBE2N
MIP-5
Contactin-5
Ubiquitin+1
Marker
Frequency
0
0.2
0.4
0.6
0.8
1
1.2

FIG. 16

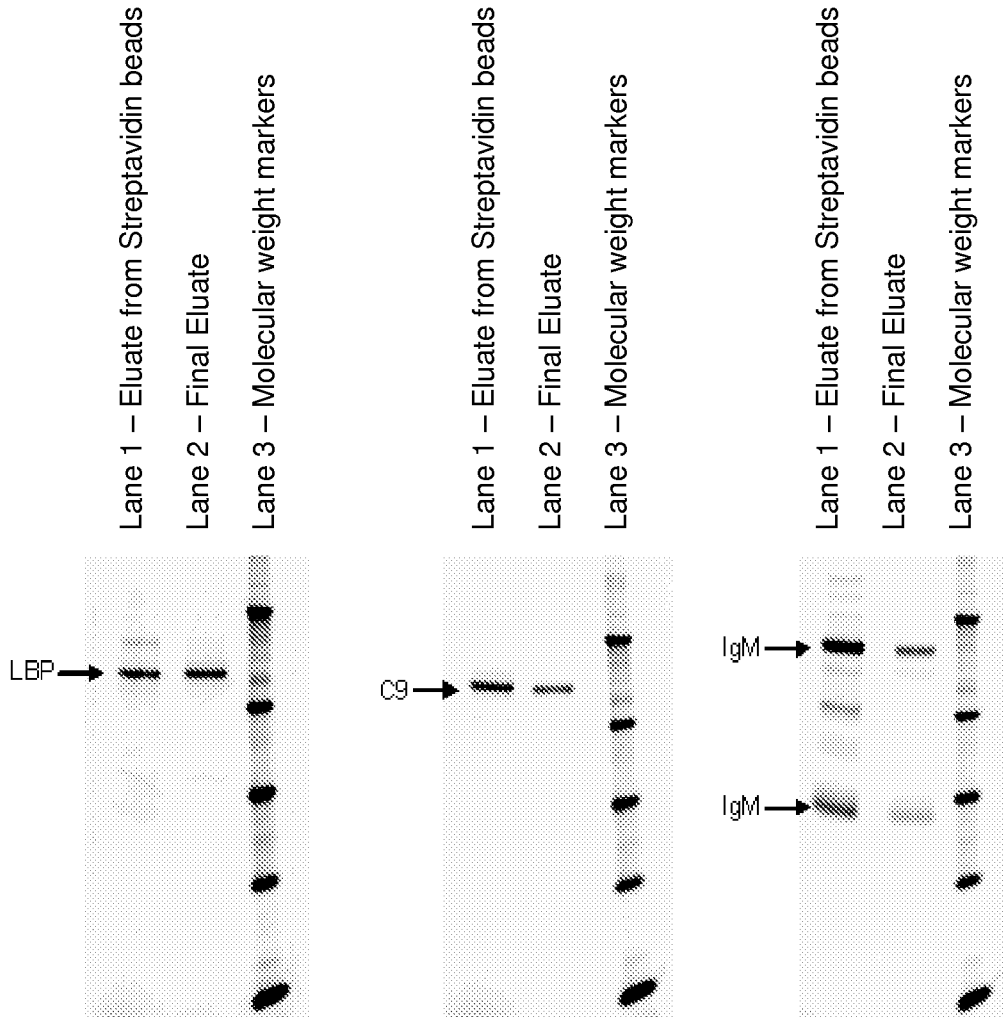

Lane 1 – Eluate from Streptavidin beads
Lane 2 – Final Eluate
Lane 3 – Molecular weight markers
LBP
Lane 1 – Eluate from Streptavidin beads
Lane 2 – Final Eluate
Lane 3 – Molecular weight markers
C9
Lane 1 – Eluate from Streptavidin beads
Lane 2 – Final Eluate
Lane 3 – Molecular weight markers
IgM
IgM

FIG. 17A

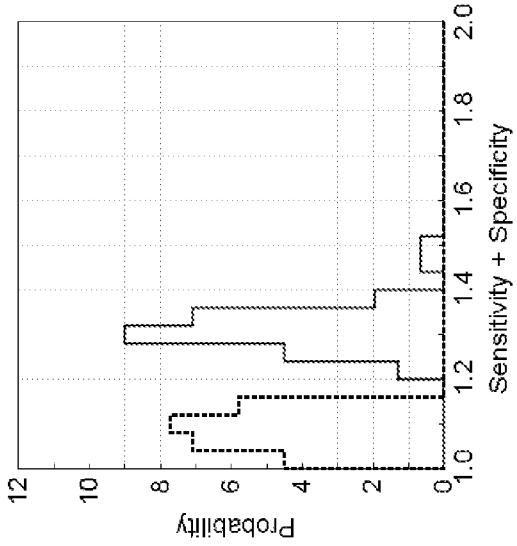


FIG. 17B

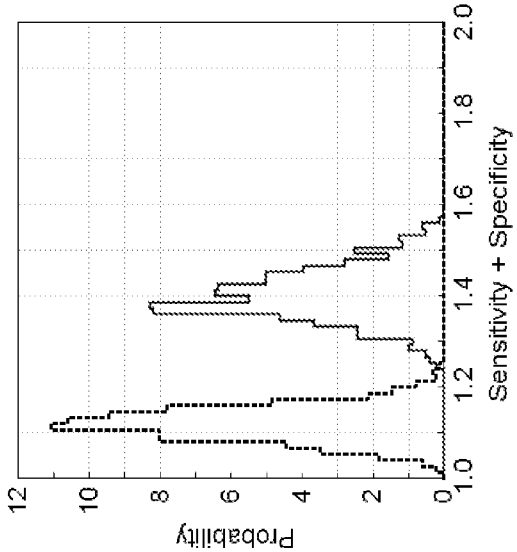


FIG. 17C

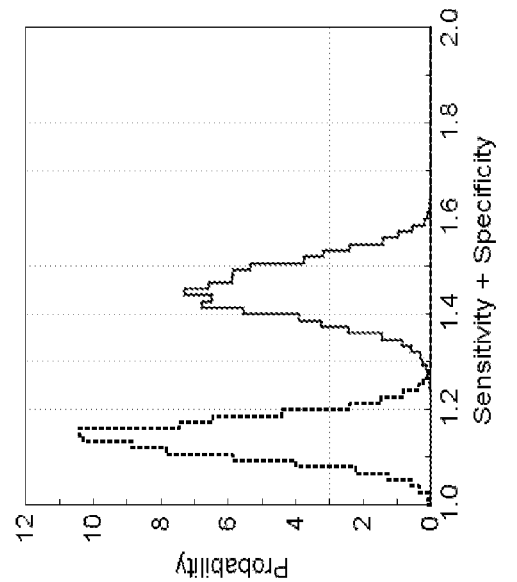


FIG. 18A

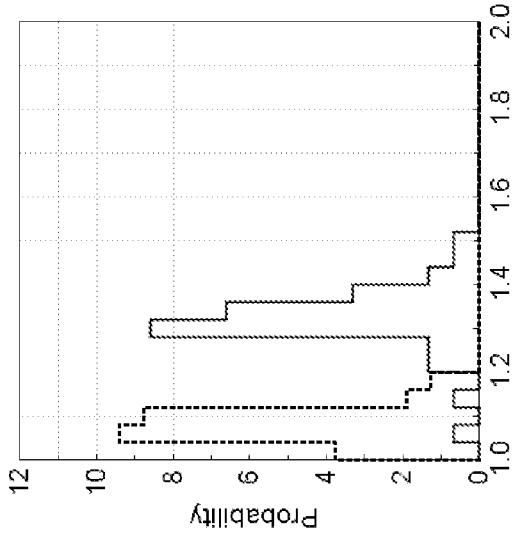


FIG. 18B

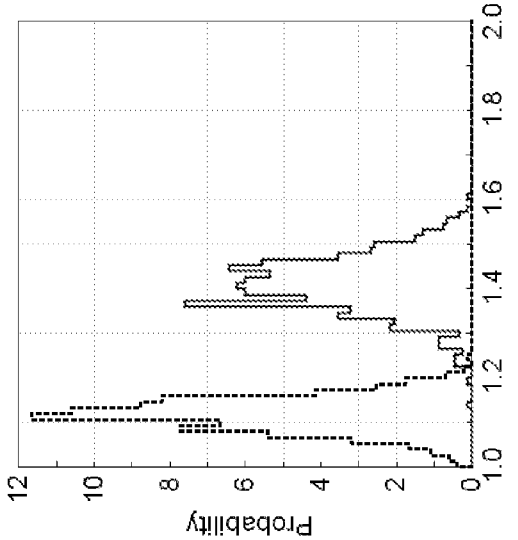


FIG. 18C

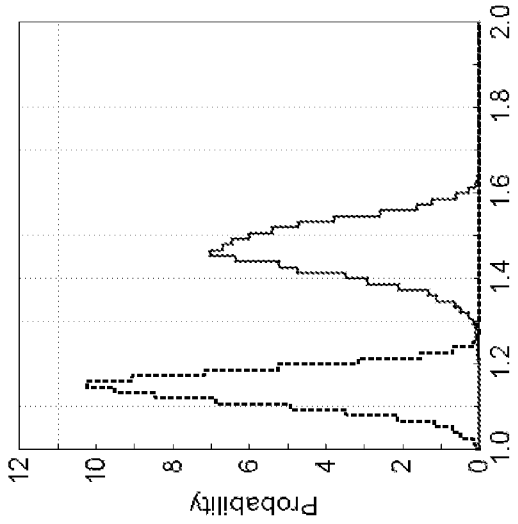


FIG. 19A

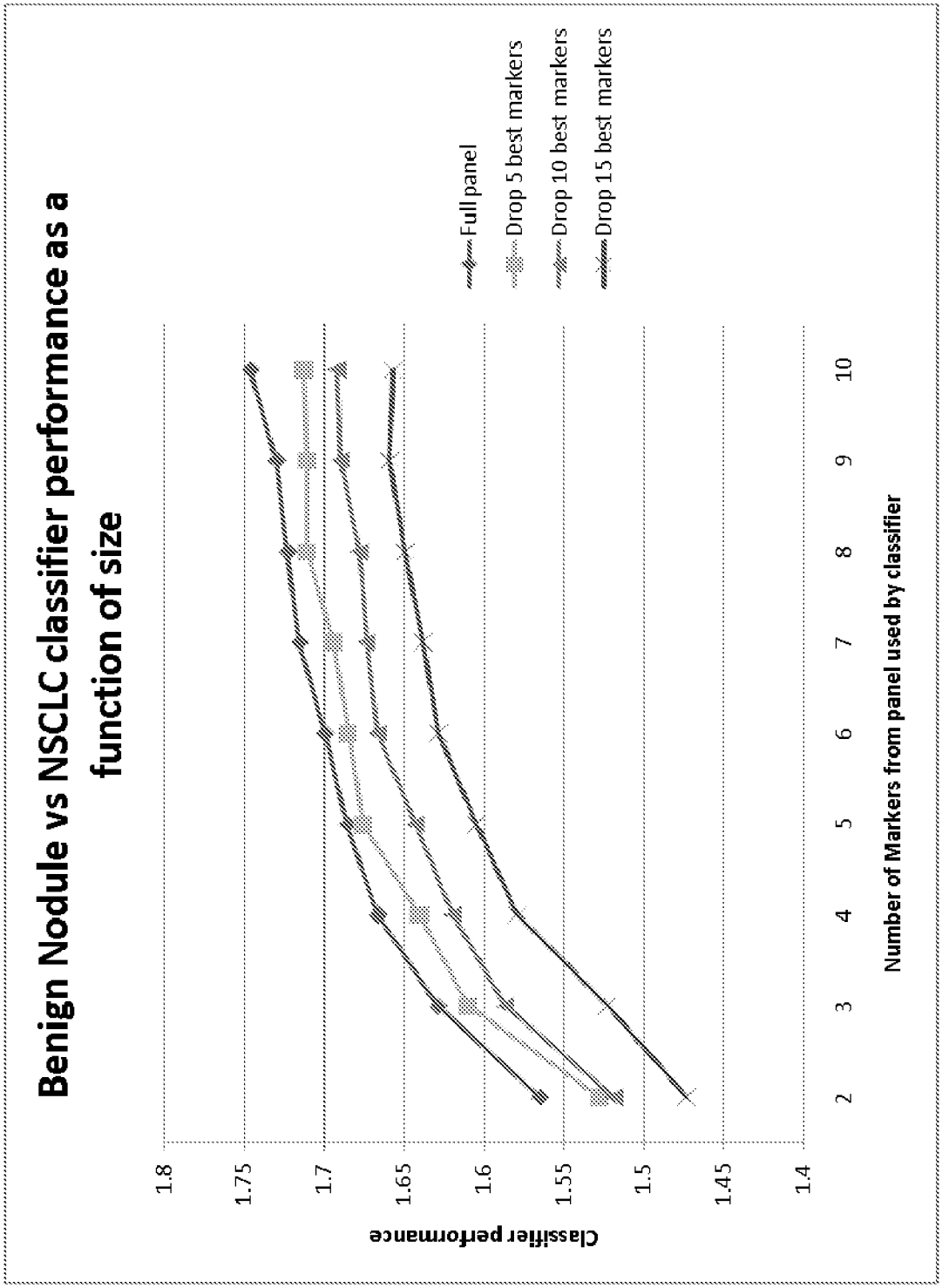

Benign Nodule vs NSCLC classifier performance as a function of size
Classifier performance
1.8
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.4
2
3
4
5
6
7
8
9
10
Number of Markers from panel used by classifier
Full panel
Drop 5 best markers
Drop 10 best markers
Drop 15 best markers

FIG. 19B

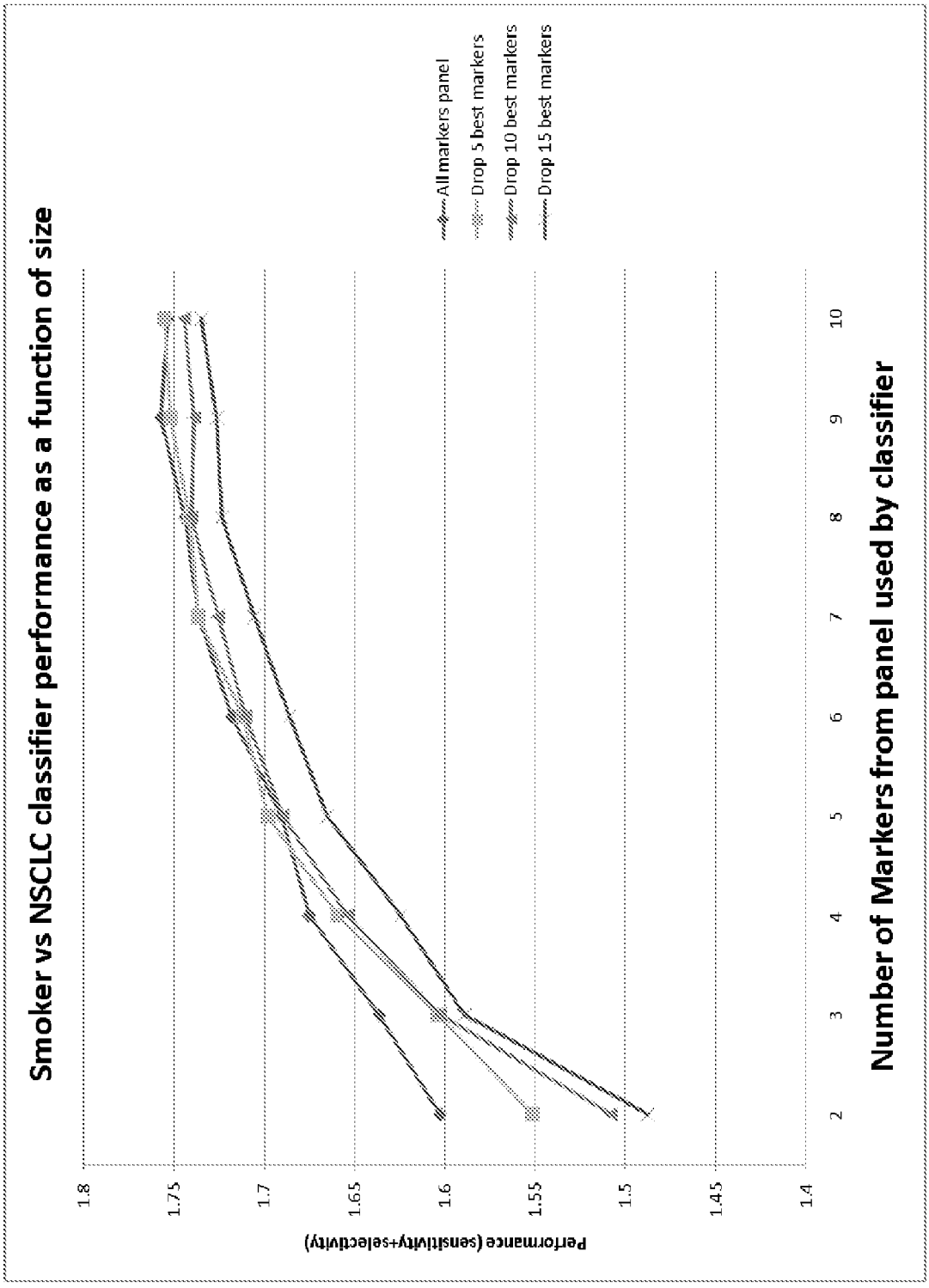

Smoker vs NSCLC classifier performance as a function of size
All markers panel
Drop 5 best markers
Drop 10 best markers
Drop 15 best markers
Performance (sensitivity+selectivity)
1.8
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.4
2
3
4
5
6
7
8
9
10
Number of Markers from panel used by classifier

FIG. 20A

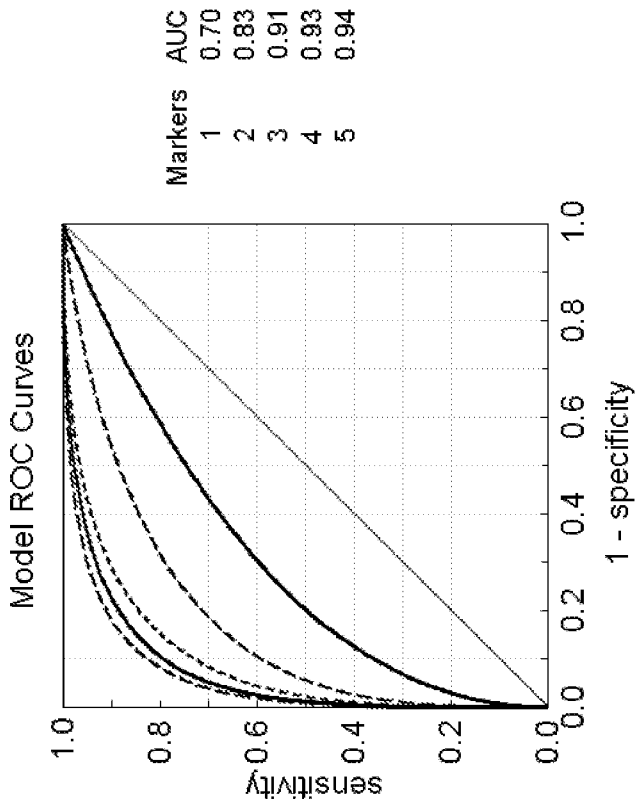


FIG. 20B

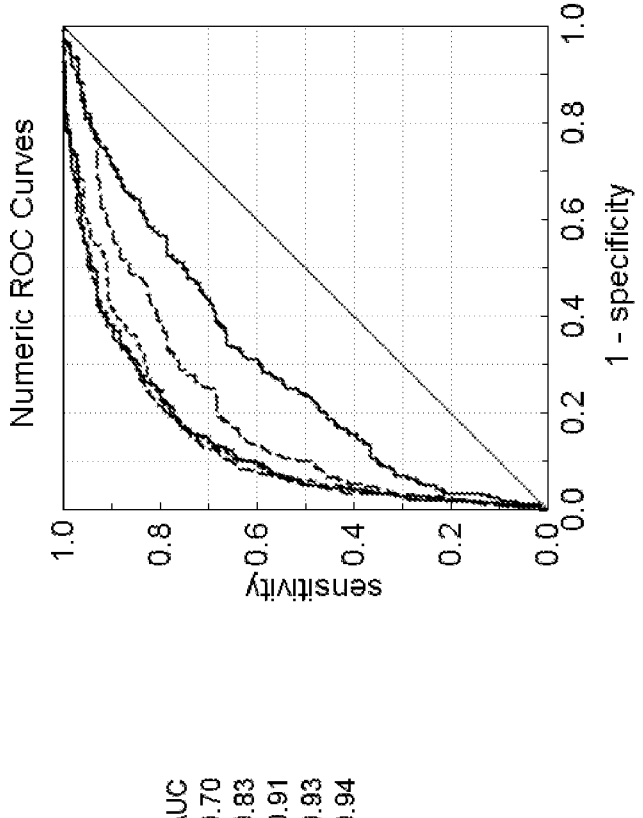
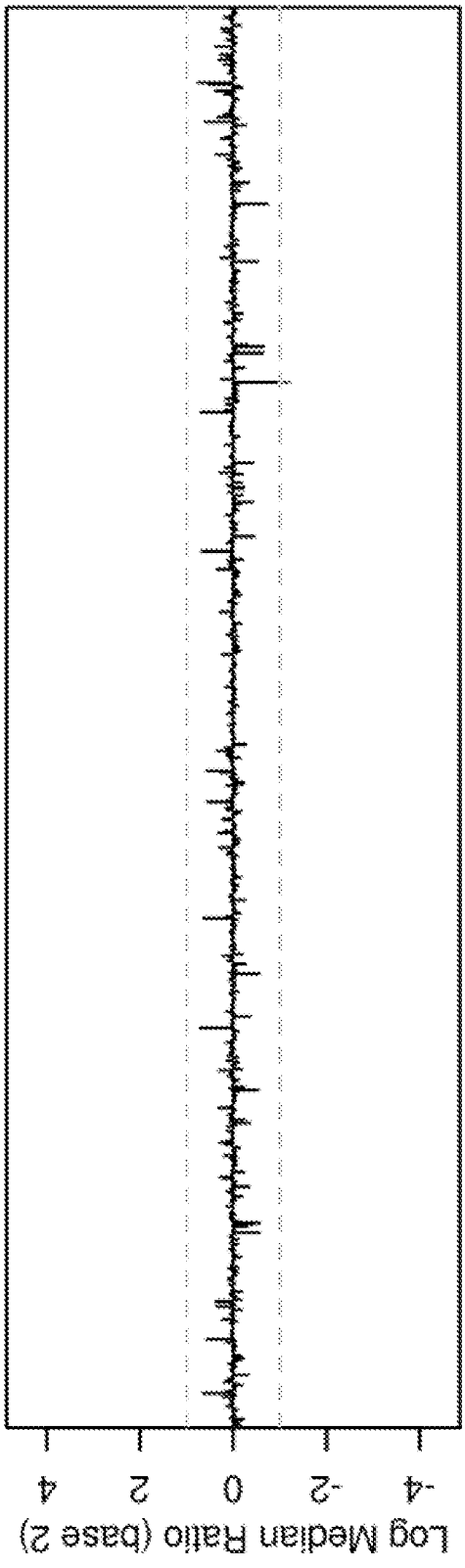


FIG. 21A



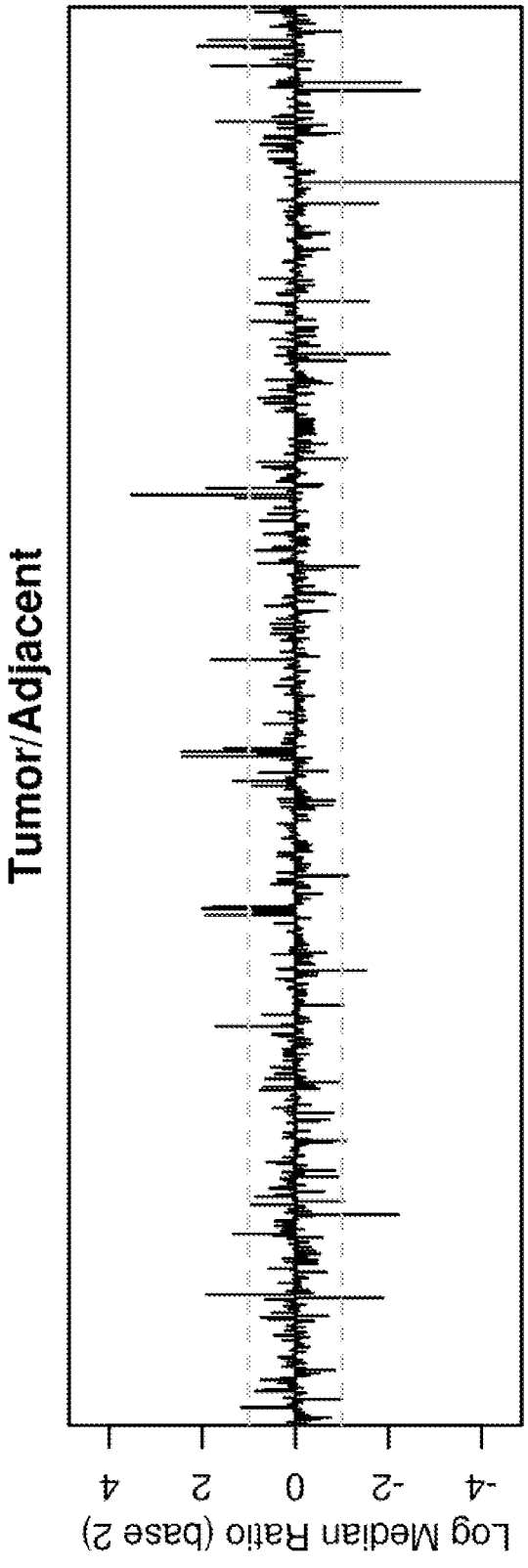


FIG. 21B

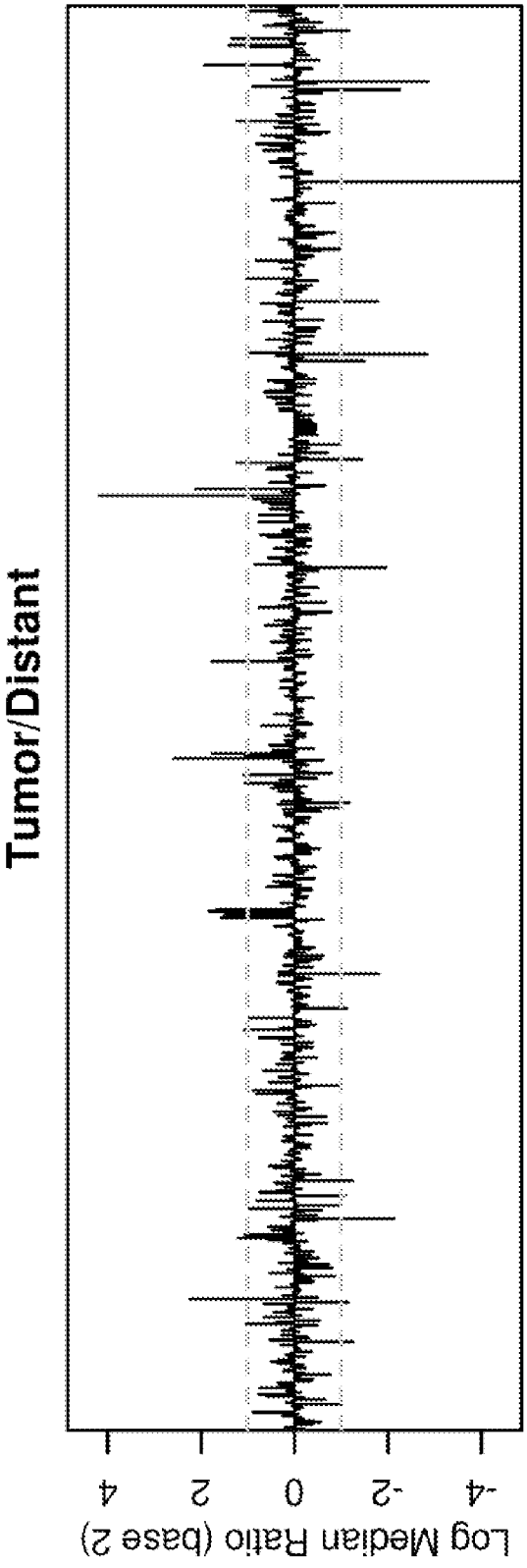


FIG. 21C

FIG. 22

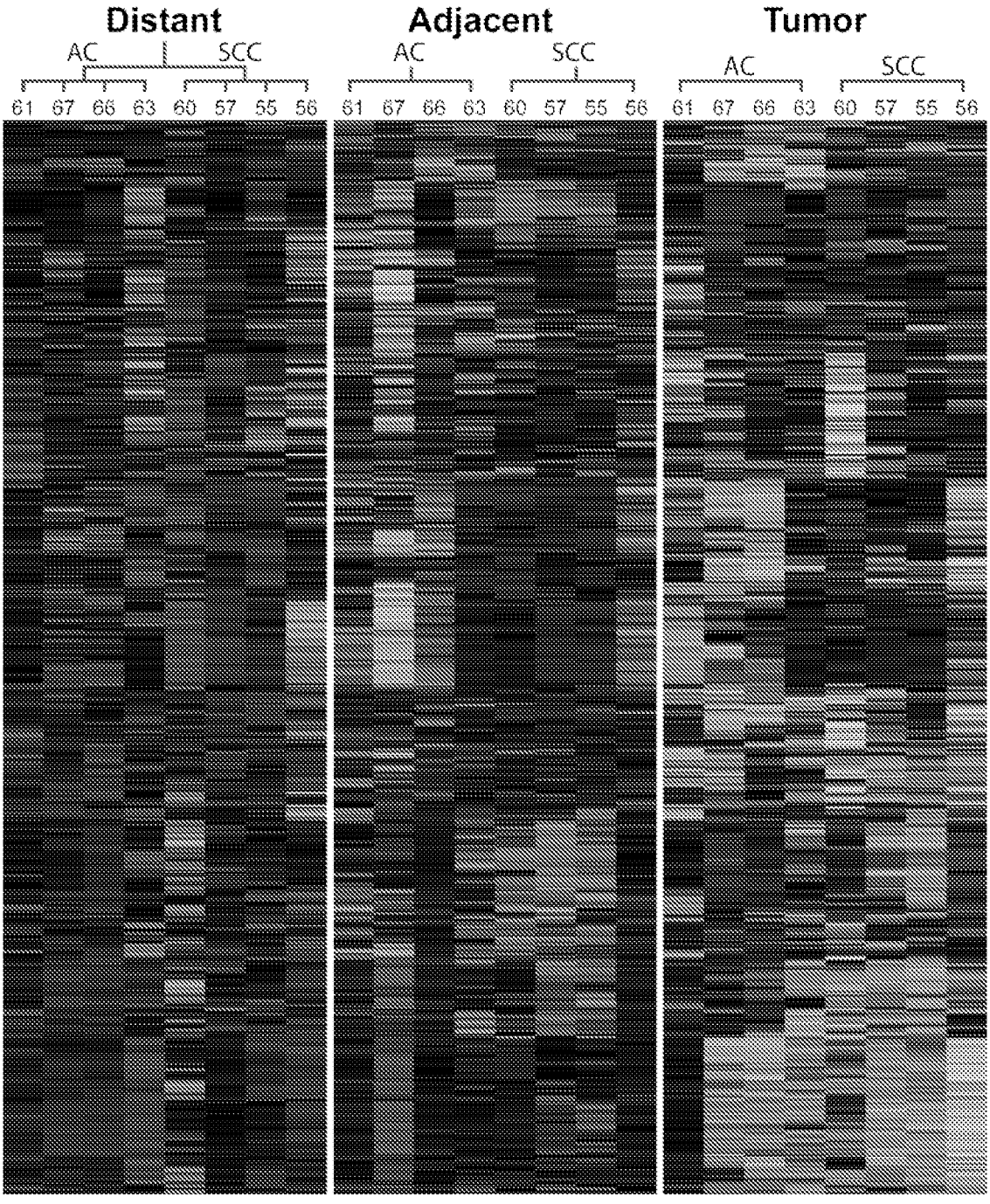

Distant
AC
SCC
61 67 66 63 60 57 55 56
Adjacent
AC
SCC
61 67 66 63 60 57 55 56
Tumor
AC
SCC
61 67 66 63 60 57 55 56

FIG. 23A

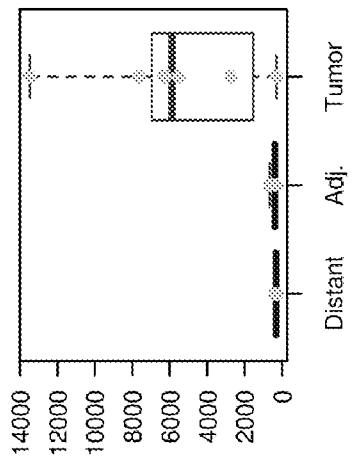


FIG. 23B

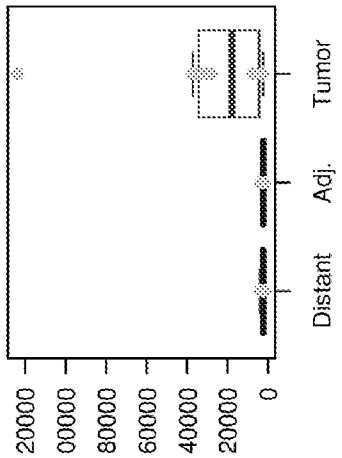


FIG. 23C

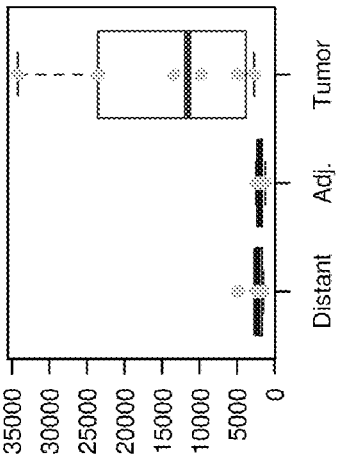


FIG. 23D

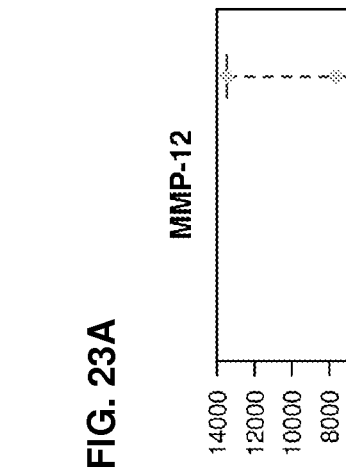


FIG. 23E

FIG. 23F

FIG. 23G

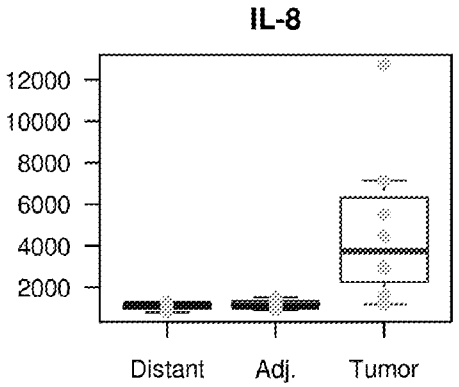


FIG. 23H

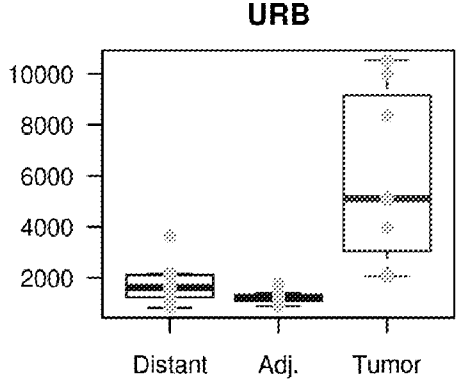


FIG. 23I

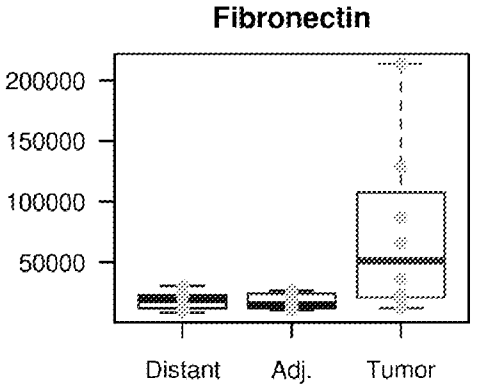


FIG. 23J

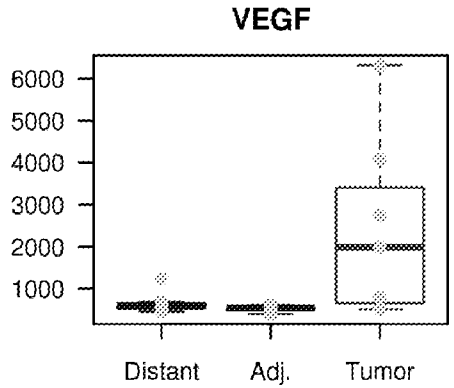


FIG. 23K

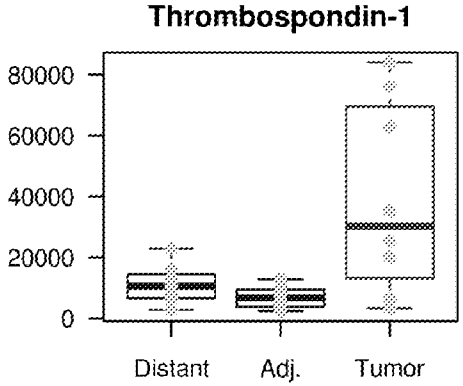


FIG. 23L

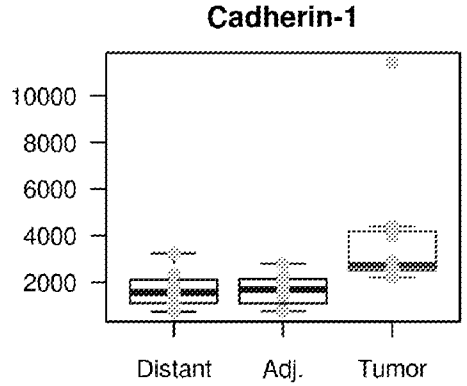


FIG. 23M

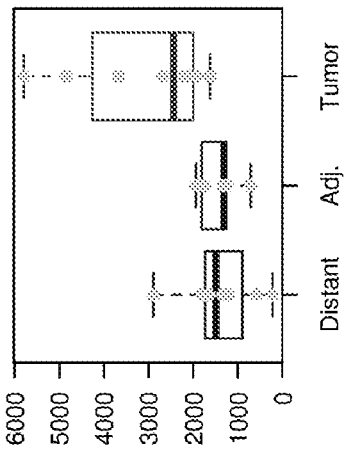


FIG. 23N

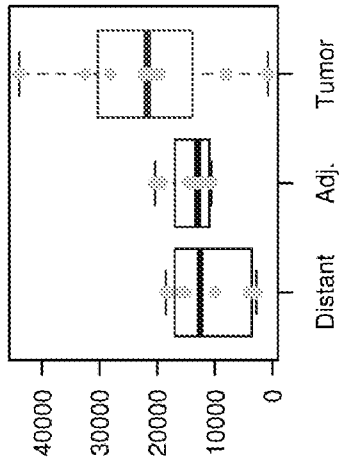


FIG. 23O

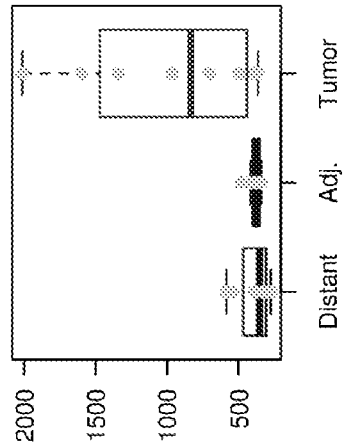


FIG. 23P

FIG. 23Q

FIG. 23R

FIG. 23S

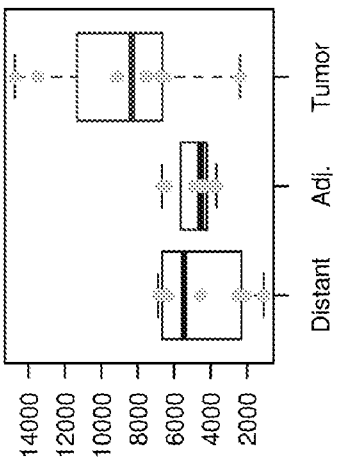


FIG. 23T

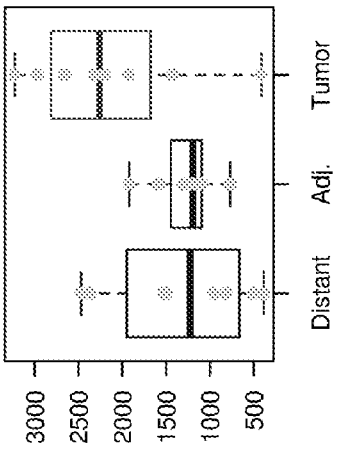


FIG. 24A

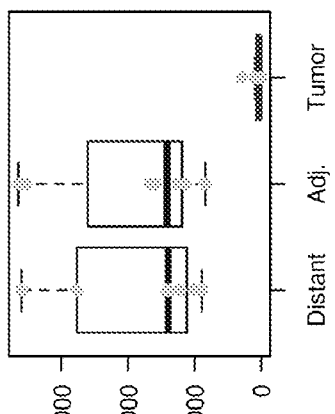


FIG. 24B

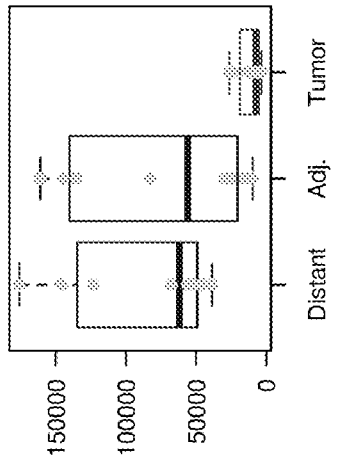


FIG. 24C

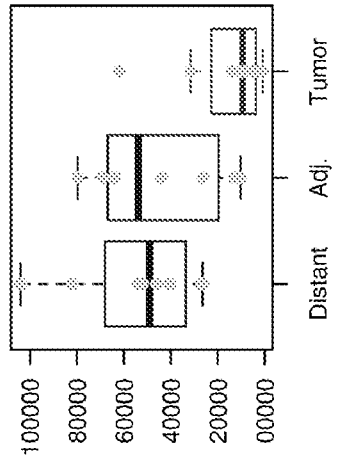


FIG. 24D

FIG. 24E

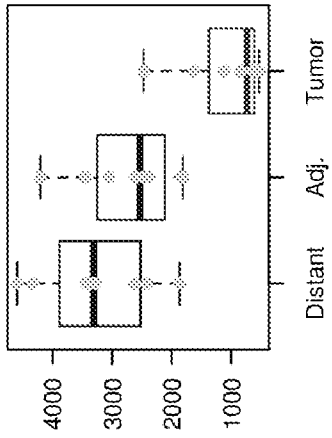


FIG. 24F

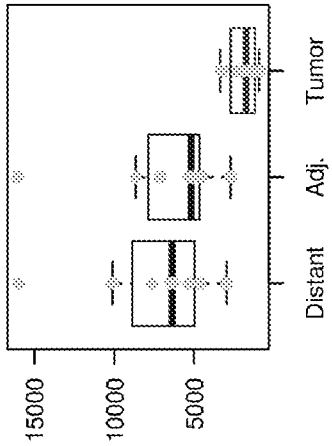


FIG. 24G

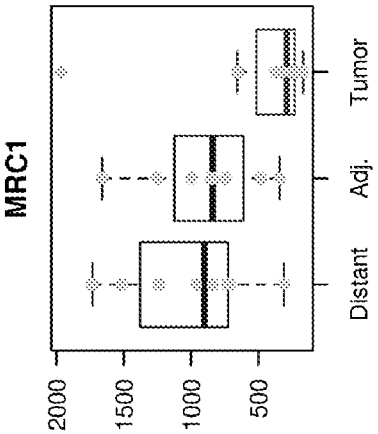


FIG. 24H

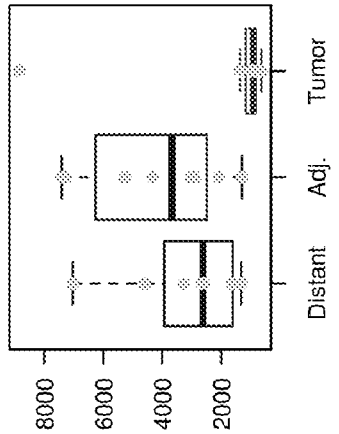


FIG. 24I

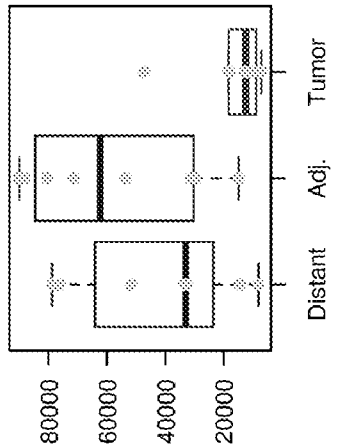


FIG. 24J

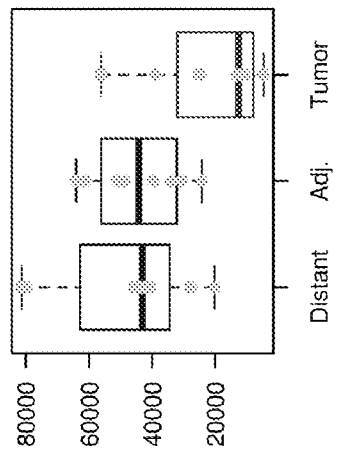


FIG. 24K

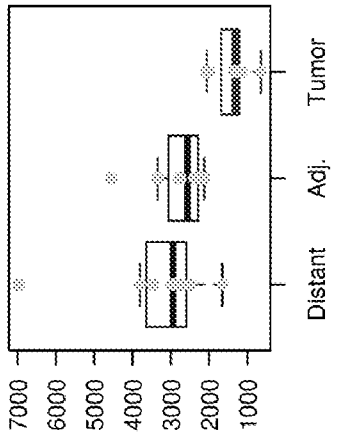


FIG. 24L

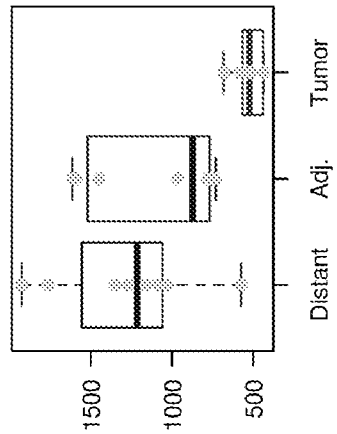


FIG. 24M

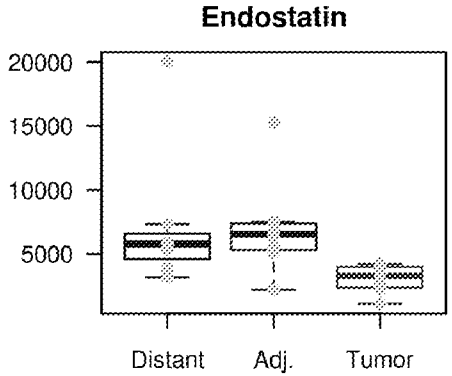


FIG. 24N

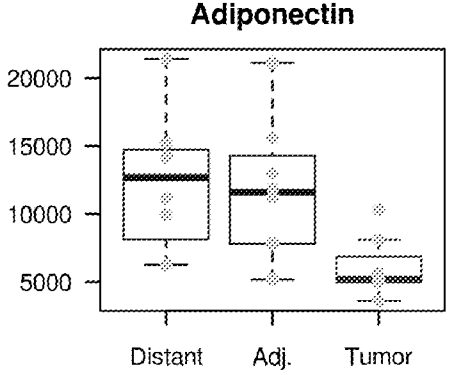


FIG. 24O

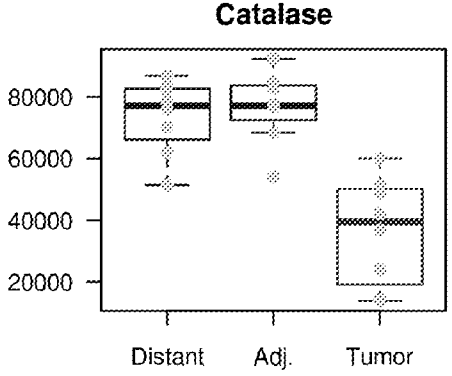


FIG. 24P

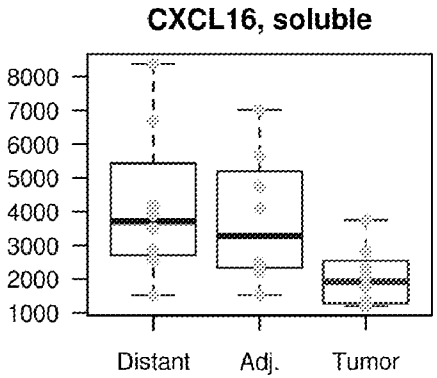


FIG. 25

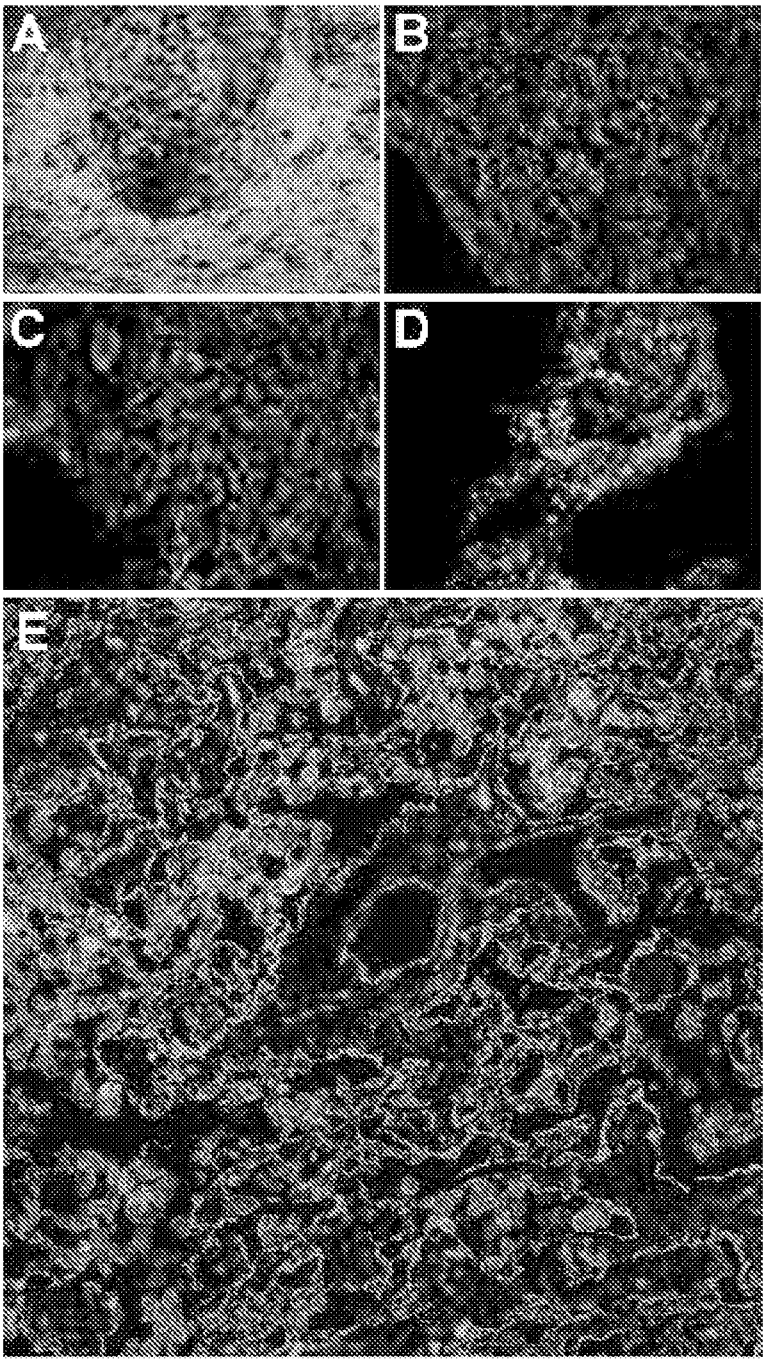


FIG. 26A

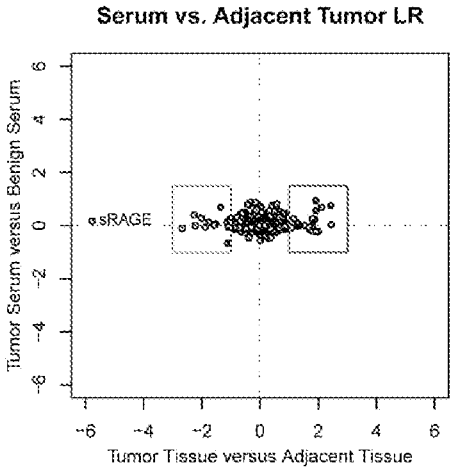


FIG. 26D

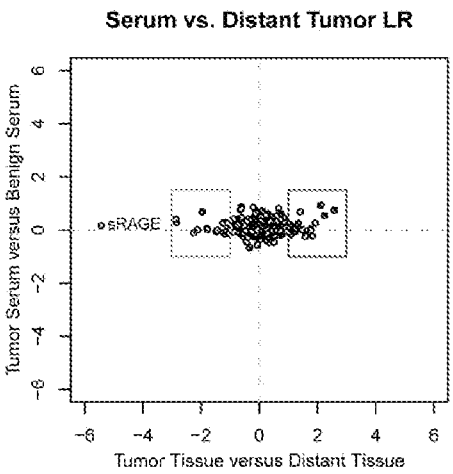


FIG. 26B

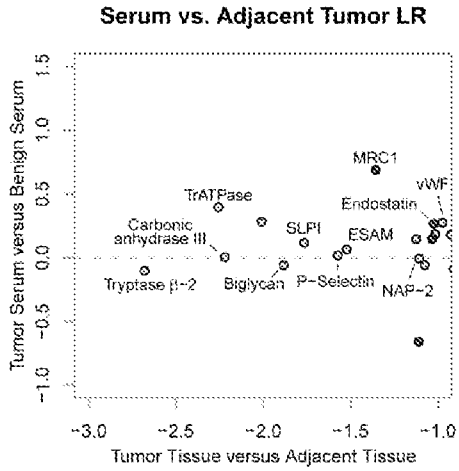


FIG. 26E

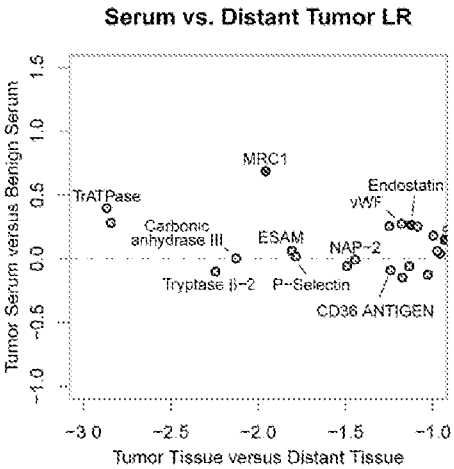


FIG. 26C

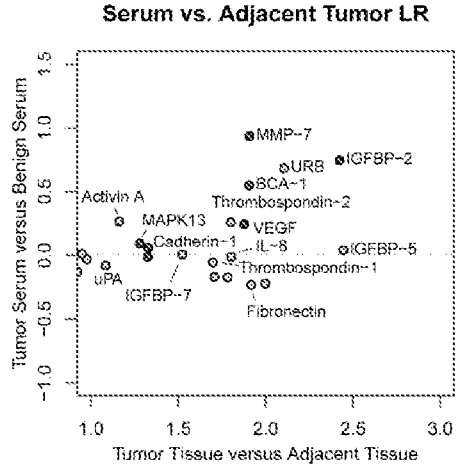


FIG. 26F

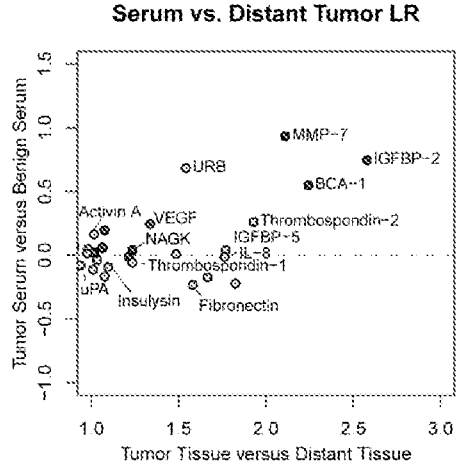


FIG. 27

