FIG. 1

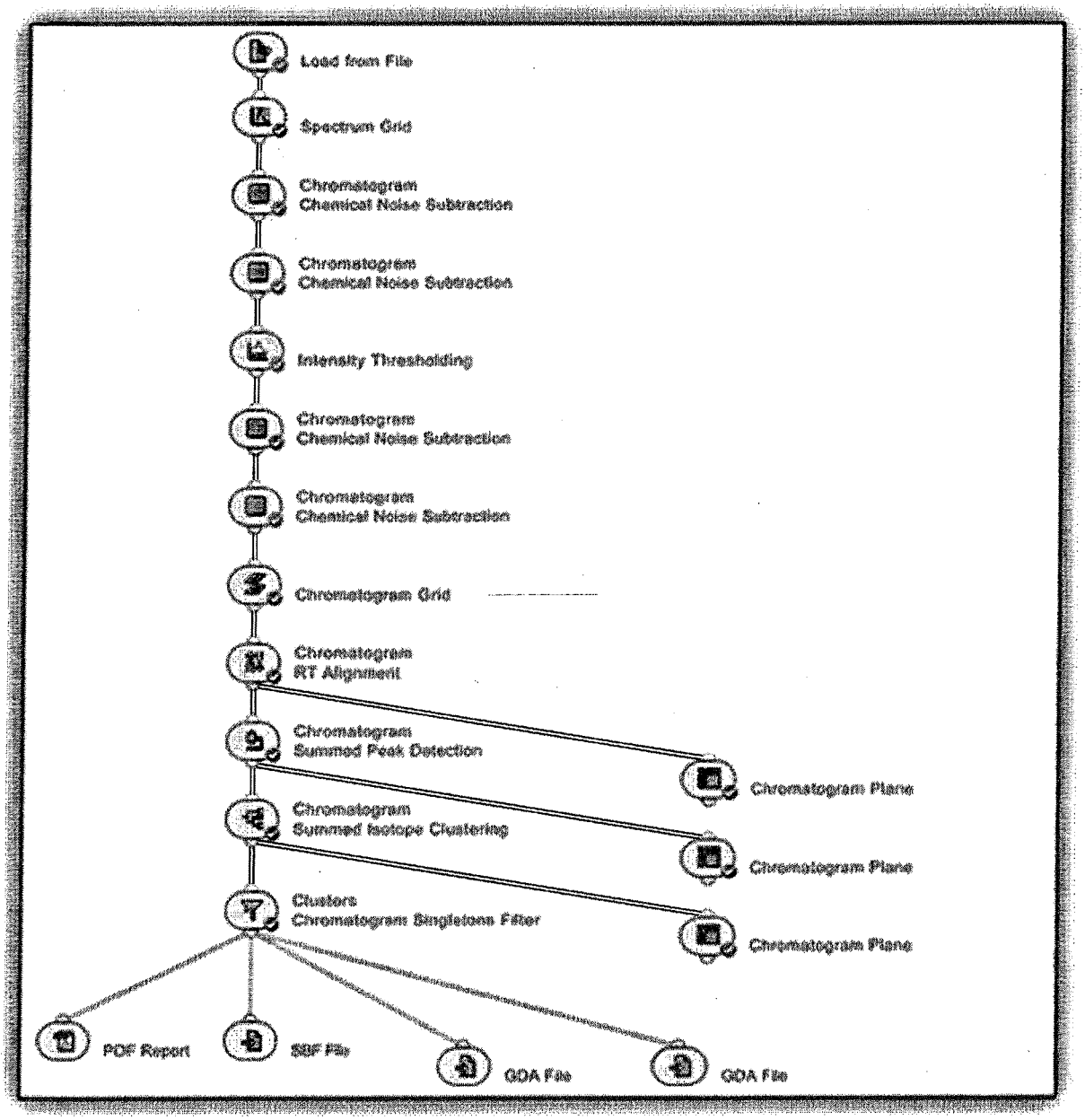

Load from File
Spectrum Grid
Chromatogram
Chemical Noise Subtraction
Chromatogram
Chemical Noise Subtraction
Intensity Thresholding
Chromatogram
Chemical Noise Subtraction
Chromatogram
Chemical Noise Subtraction
Chromatogram Grid
Chromatogram
RT Alignment
Chromatogram
Summed Peak Detection
Chromatogram
Summed Isotope Clustering
Clusters
Chromatogram Singletons Filter
Chromatogram Plane
Chromatogram Plane
Chromatogram Plane
PDF Report
SBF File
GDA File
GDA File

FIG. 2

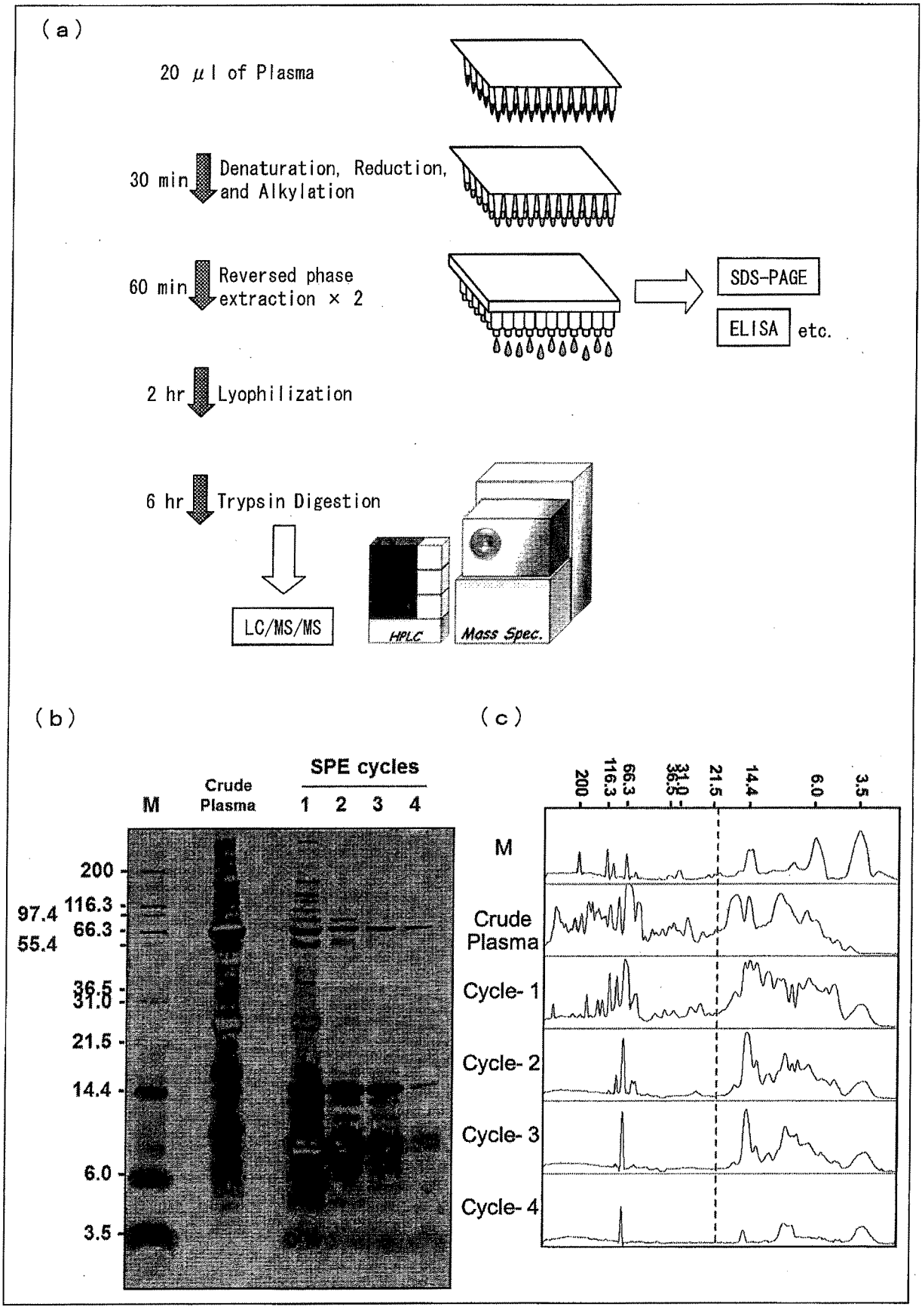
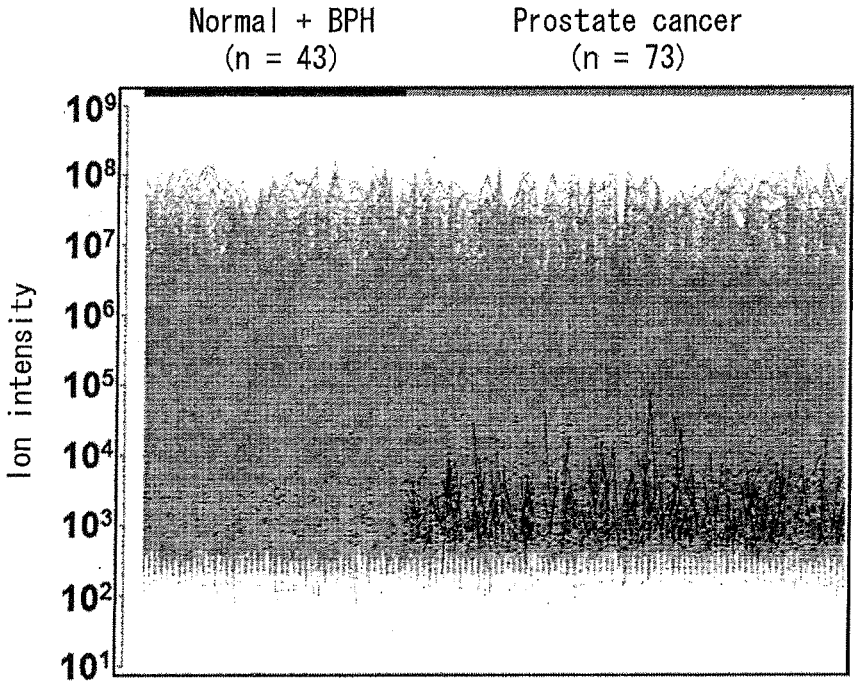

(a)
20 μl of Plasma
30 min
Denaturation, Reduction, and Alkylation
60 min
Reversed phase extraction × 2
SDS-PAGE
ELISA
etc.
2 hr
Lyophilization
6 hr
Trypsin Digestion
LC/MS/MS
HPLC
Mass Spec.
(b)
SPE cycles
M
Crude Plasma
1
2
3
4
200
97.4
116.3
66.3
55.4
36.5
31.0
21.5
14.4
6.0
3.5
(c)
200
116.3
66.3
36.5
31.0
21.5
14.4
6.0
3.5
M
Crude Plasma
Cycle-1
Cycle-2
Cycle-3
Cycle-4

FIG. 3

(a)



(b)

		Prostate cancer								
		19	18	17	16	15	14	13	12	11
Normal + BPH	0	0	0	0	0	1	3	2	11	19
	1	1	2	2	3	8	10	21	44	62

FIG. 4

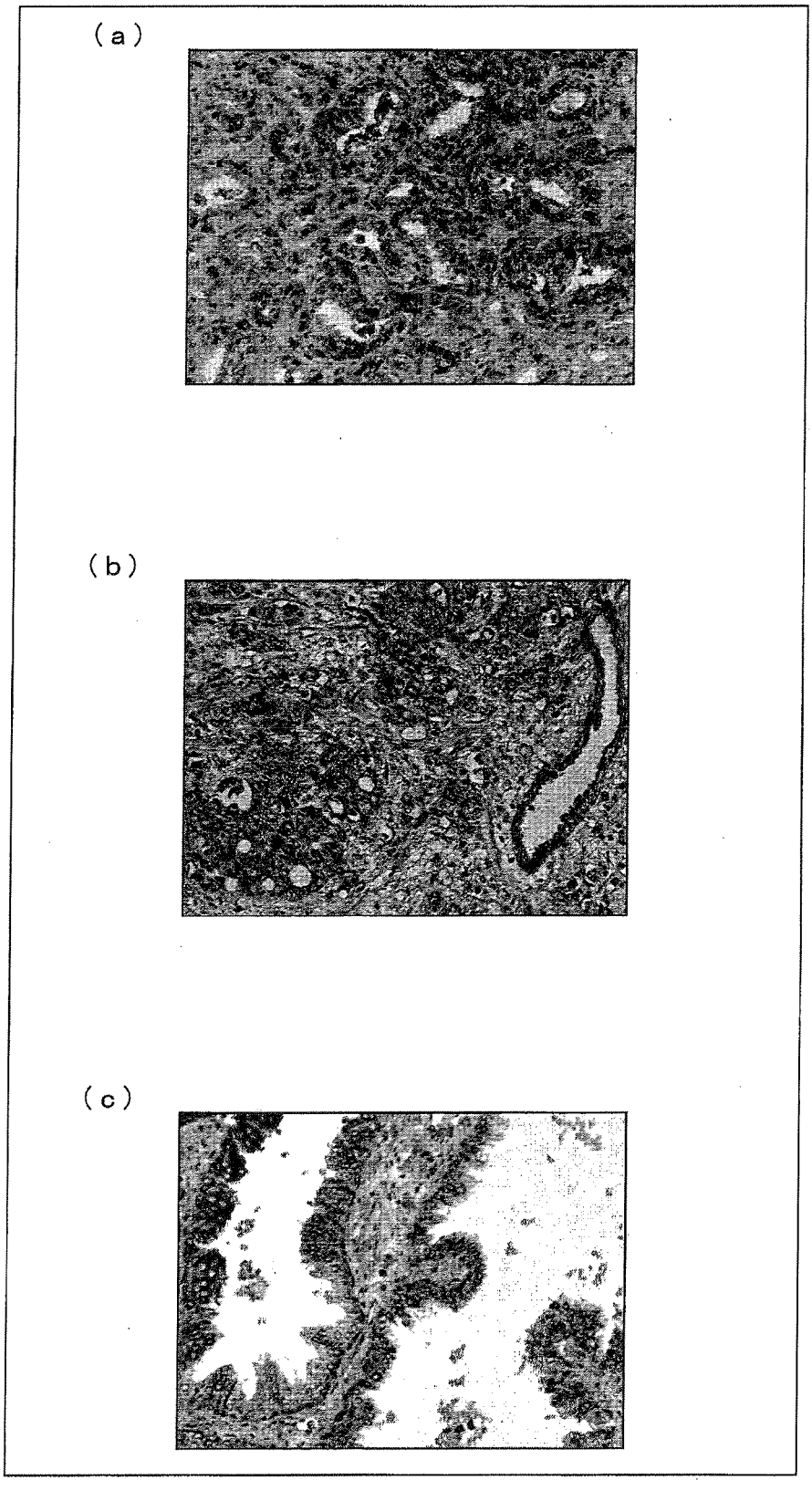


FIG. 5

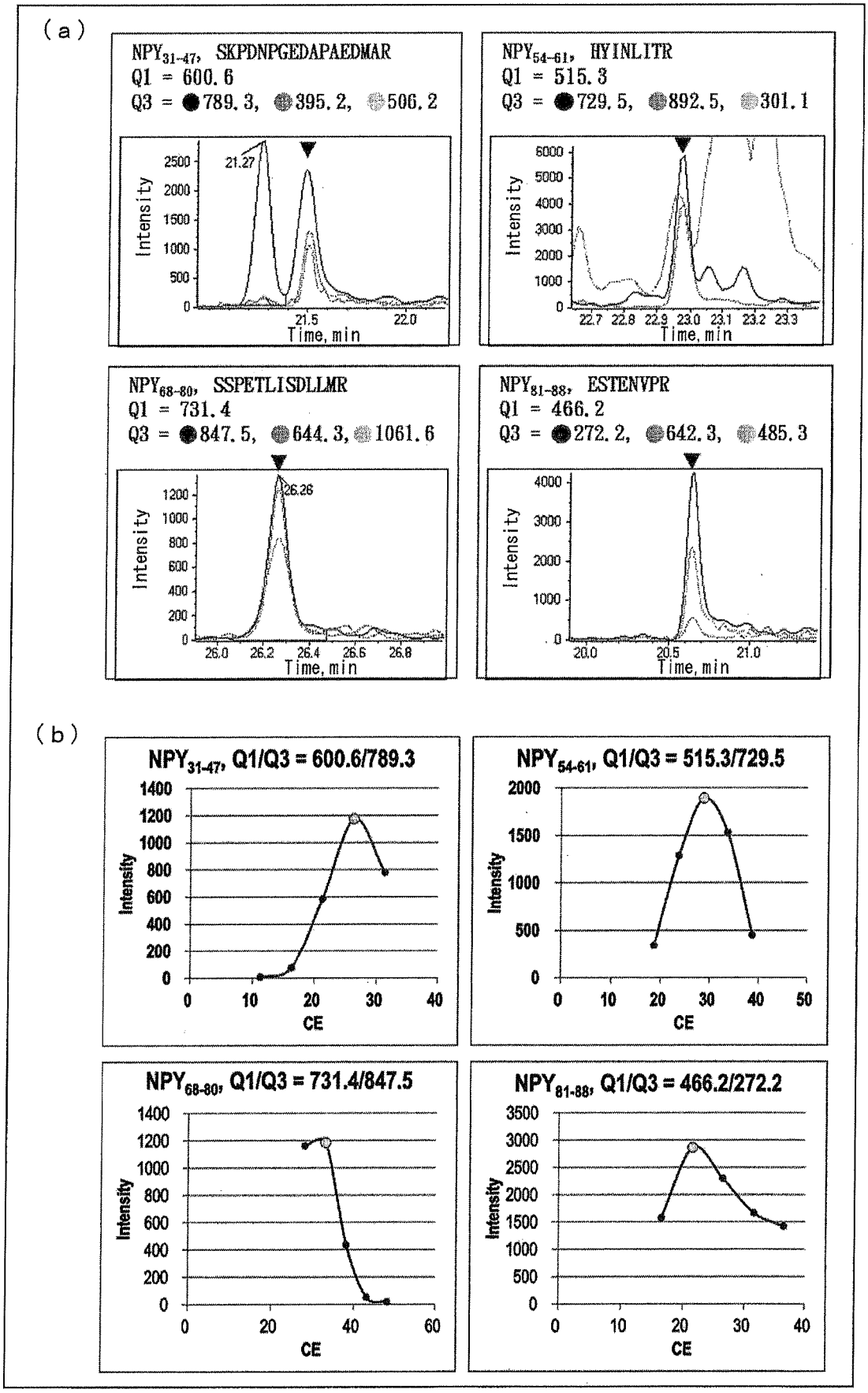

(a)
NPY31-47, SKPDNPGEDAPAEDMAR
Q1 = 600.6
Q3 = 789.3, 395.2, 506.2
21.27
Intensity
Time, min
NPY54-61, HYINLITR
Q1 = 515.3
Q3 = 729.5, 892.5, 301.1
Intensity
Time, min
NPY68-80, SSPETLISDLLMR
Q1 = 731.4
Q3 = 847.5, 644.3, 1061.6
26.26
Intensity
Time, min
NPY81-88, ESTENVPR
Q1 = 466.2
Q3 = 272.2, 642.3, 485.3
Intensity
Time, min
(b)
NPY31-47, Q1/Q3 = 600.6/789.3
Intensity
CE
NPY54-61, Q1/Q3 = 515.3/729.5
Intensity
CE
NPY68-80, Q1/Q3 = 731.4/847.5
Intensity
CE
NPY81-88, Q1/Q3 = 466.2/272.2
Intensity
CE

FIG. 6

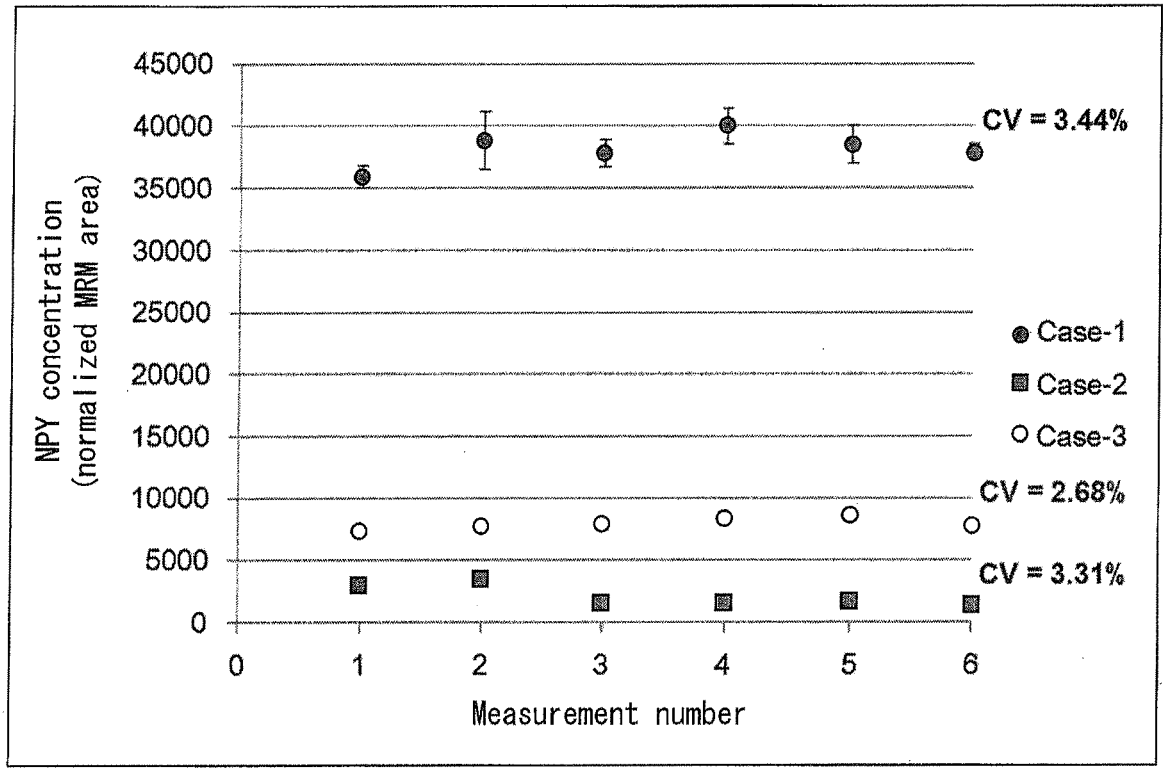

NPY concentration
(normalized MRM area)
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
1
2
3
4
5
6
Measurement number
CV = 3.44%
CV = 2.68%
CV = 3.31%
Case-1
Case-2
Case-3

FIG. 7

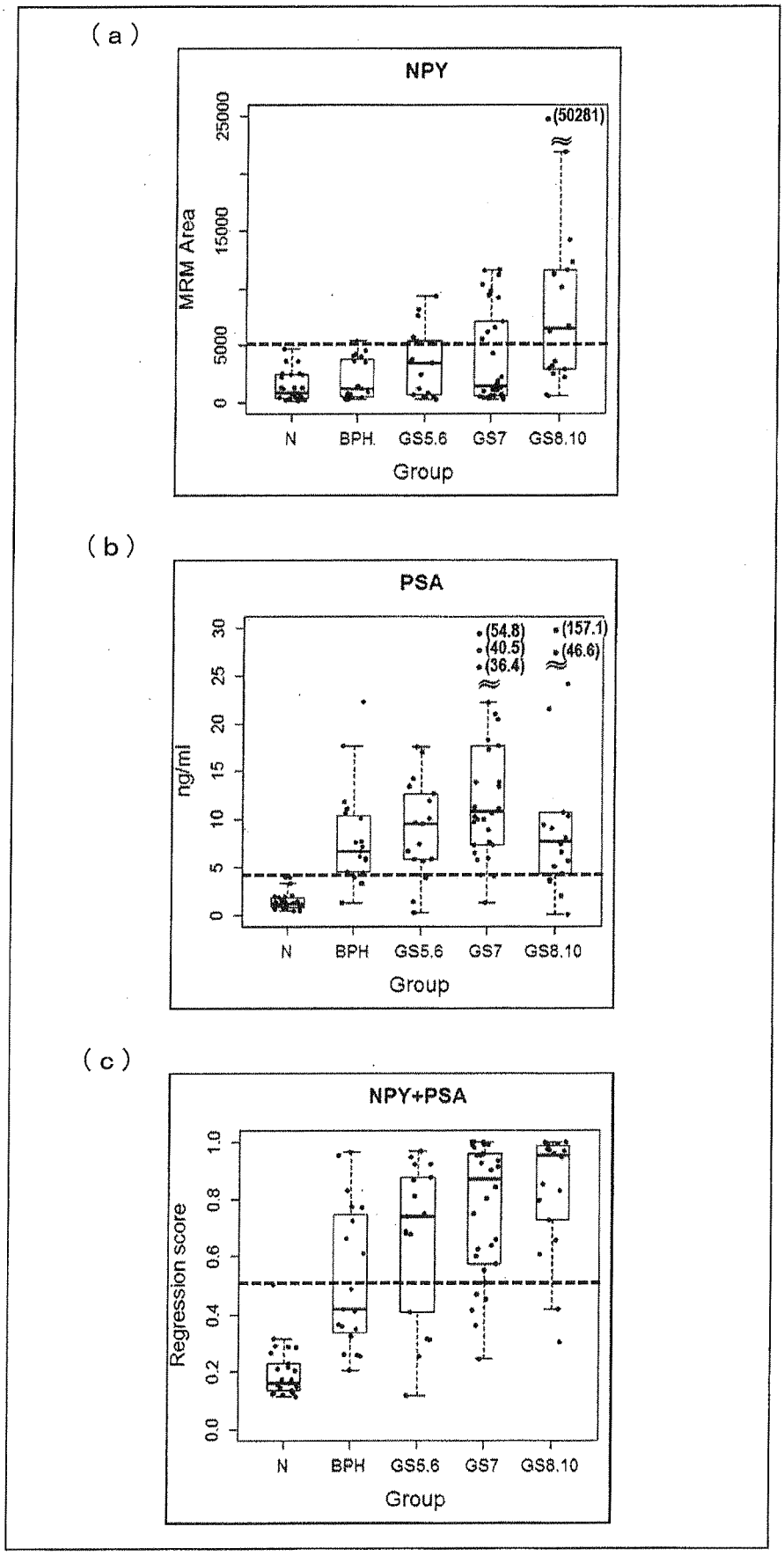

(a)
NPY
MRM Area
0
5000
15000
25000
(50281)
N
BPH
GS5.6
GS7
GS8.10
Group
(b)
PSA
ng/ml
0
5
10
15
20
25
30
(54.8)
(40.5)
(36.4)
(157.1)
(46.6)
N
BPH
GS5.6
GS7
GS8.10
Group
(c)
NPY+PSA
Regression score
0.0
0.2
0.4
0.6
0.8
1.0
N
BPH
GS5.6
GS7
GS8.10
Group

FIG. 8

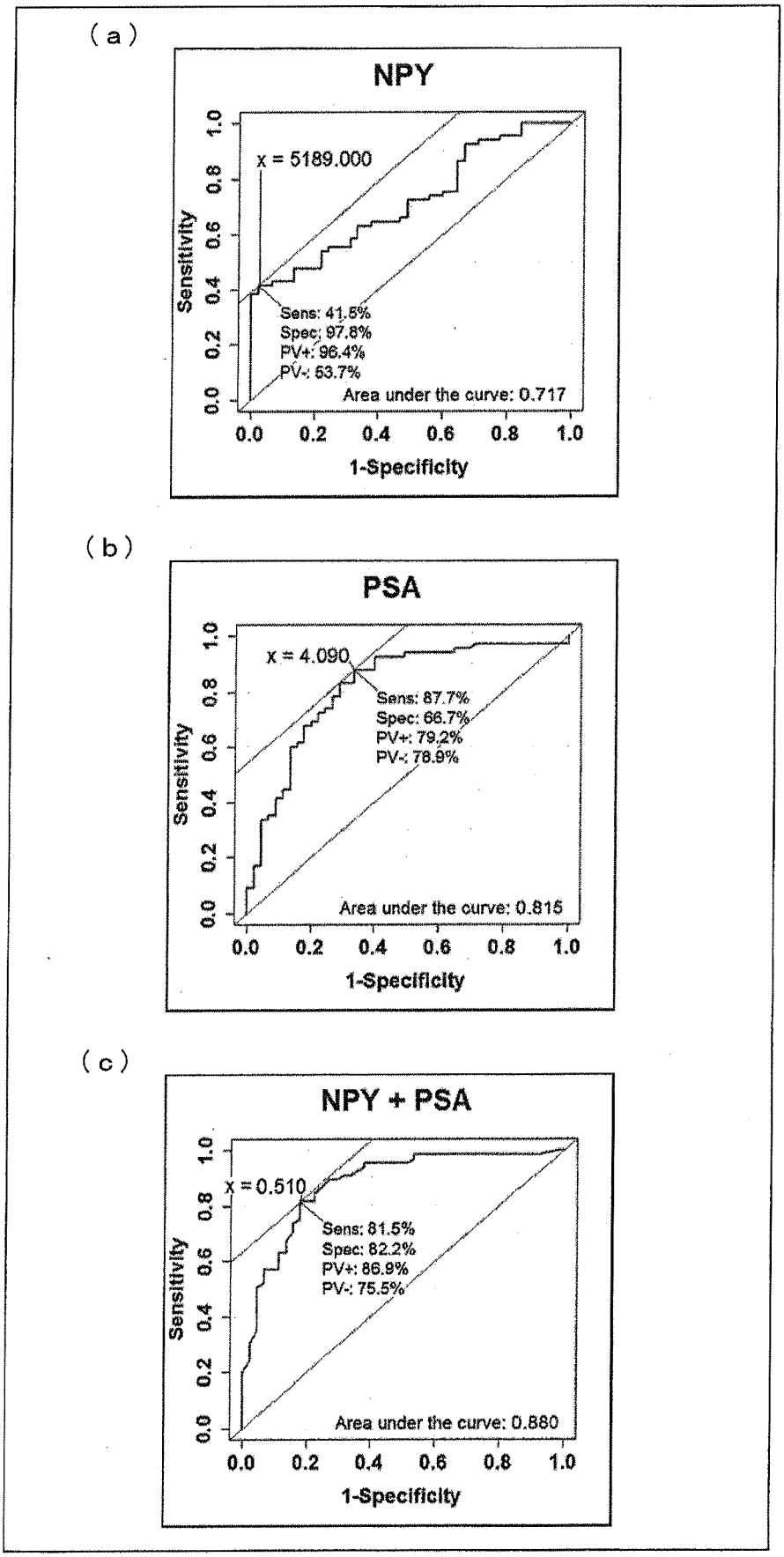
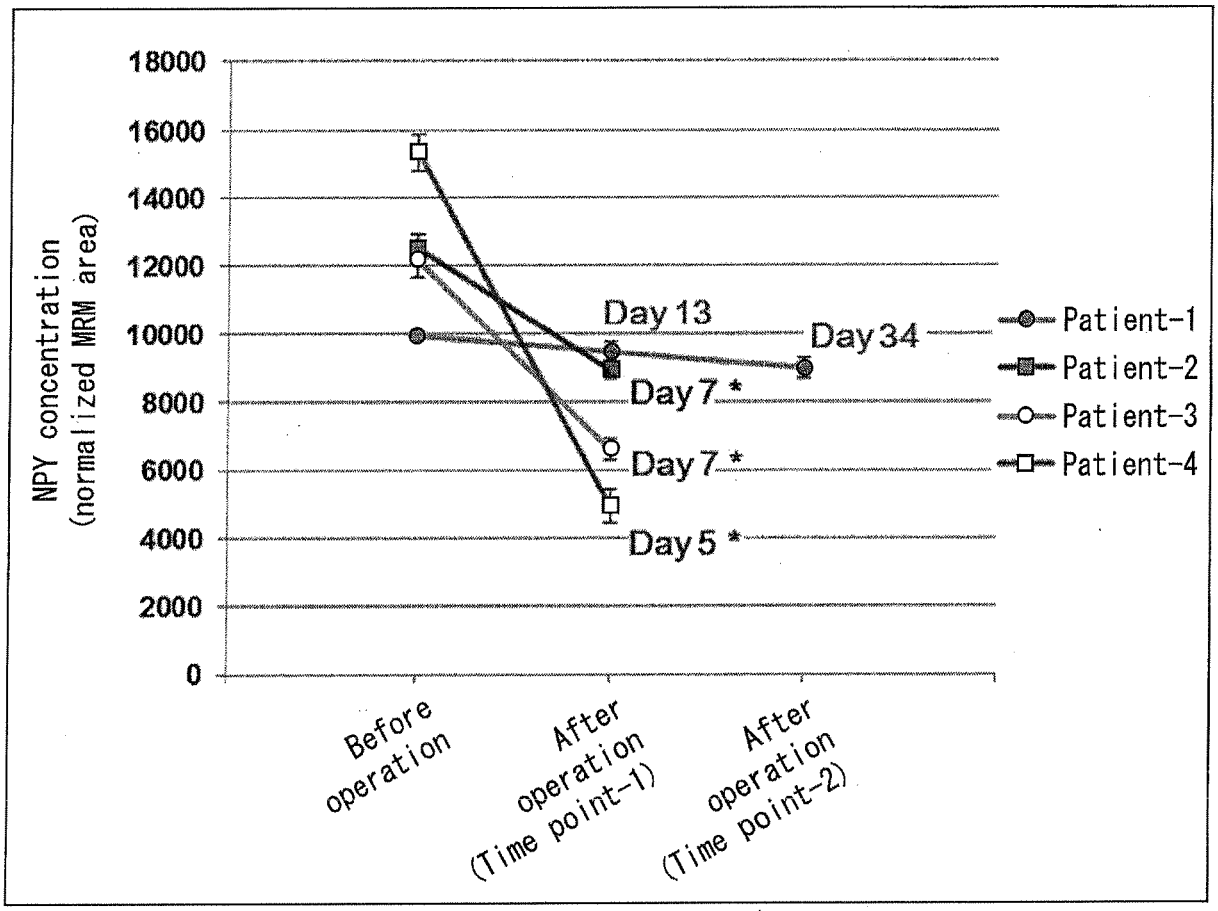

(a)
NPY
x = 5189.000
Sens: 41.5%
Spec: 97.8%
PV+: 96.4%
PV-: 53.7%
Area under the curve: 0.717
Sensitivity
1-Specificity
0.0
0.2
0.4
0.6
0.8
1.0
(b)
PSA
x = 4.090
Sens: 87.7%
Spec: 66.7%
PV+: 79.2%
PV-: 78.9%
Area under the curve: 0.815
Sensitivity
1-Specificity
(c)
NPY + PSA
x = 0.510
Sens: 81.5%
Spec: 82.2%
PV+: 86.9%
PV-: 75.5%
Area under the curve: 0.880
Sensitivity
1-Specificity

FIG. 9


NPY concentration
(normalized MRM area)
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Day 13
Day 34
Day 7 *
Day 7 *
Day 5 *
Patient-1
Patient-2
Patient-3
Patient-4
Before operation
After operation (Time point-1)
After operation (Time point-2)