Fig.1A



Fig.1B

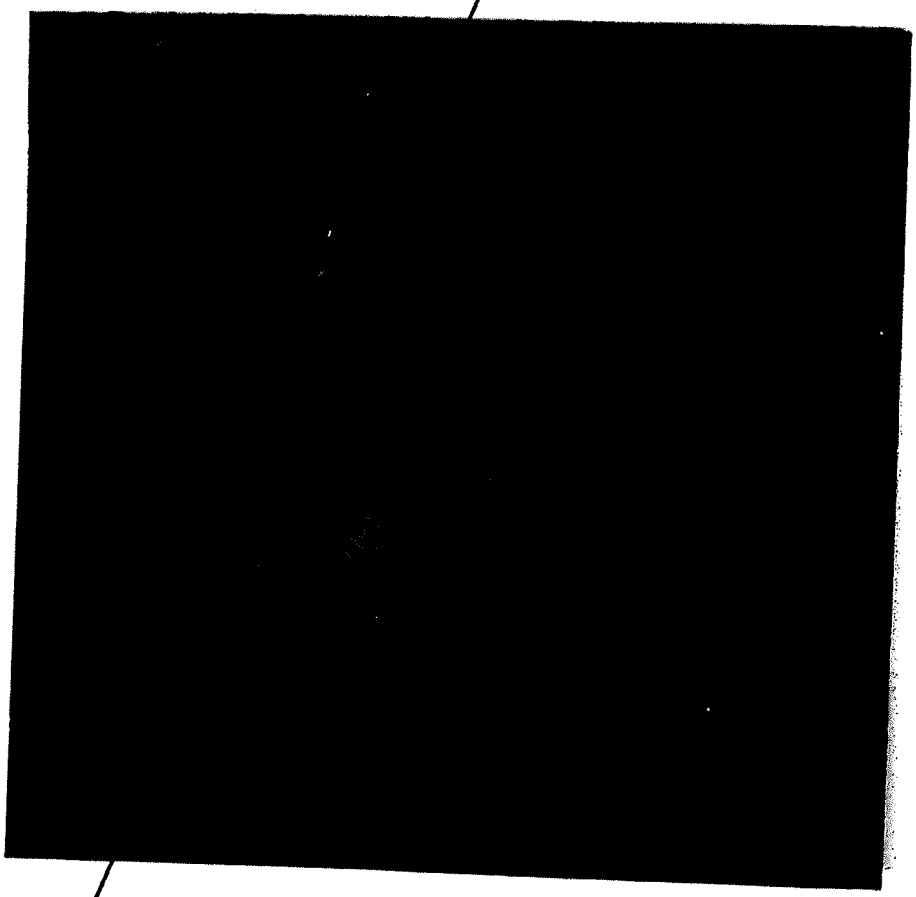


Fig.1C

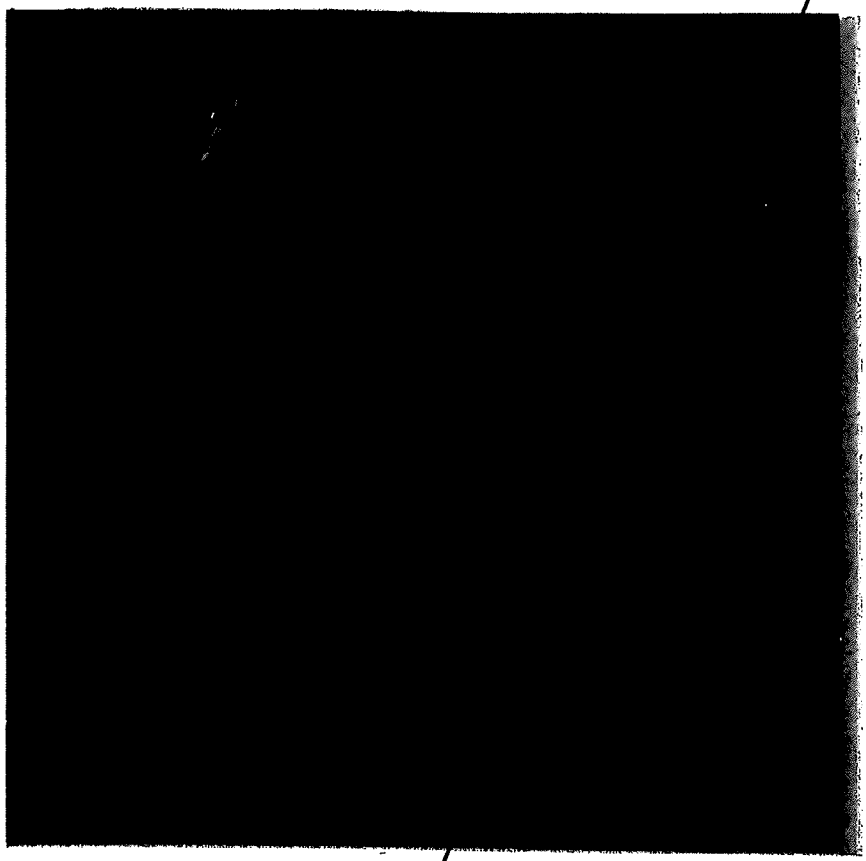


Fig.2A

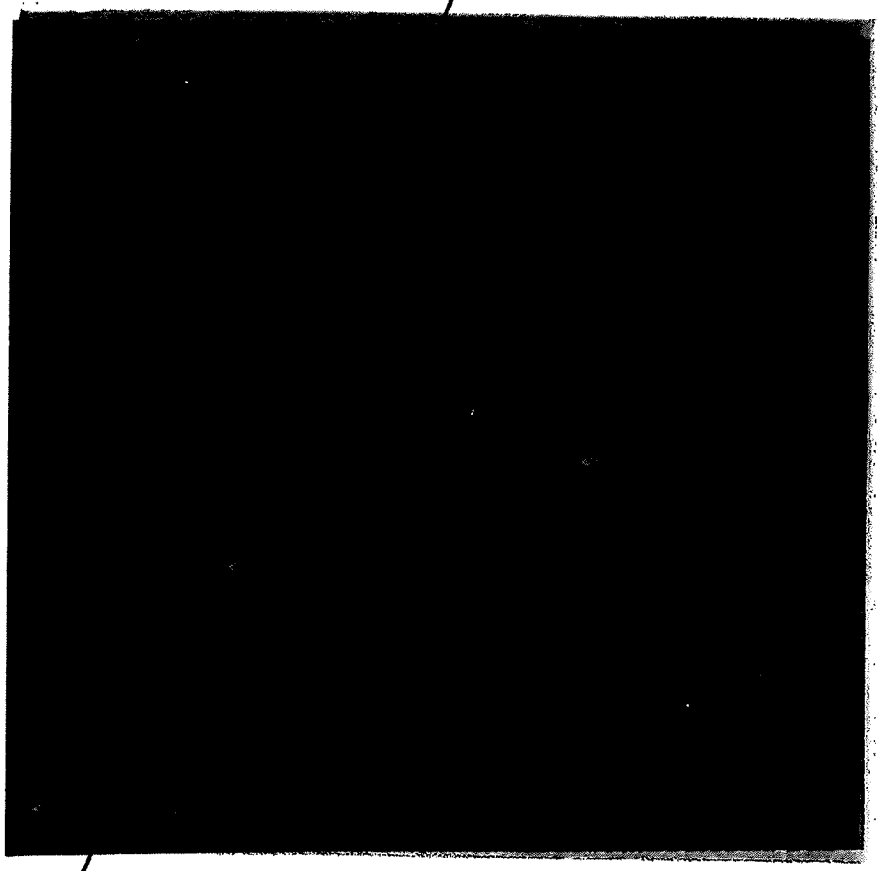


Fig.2B

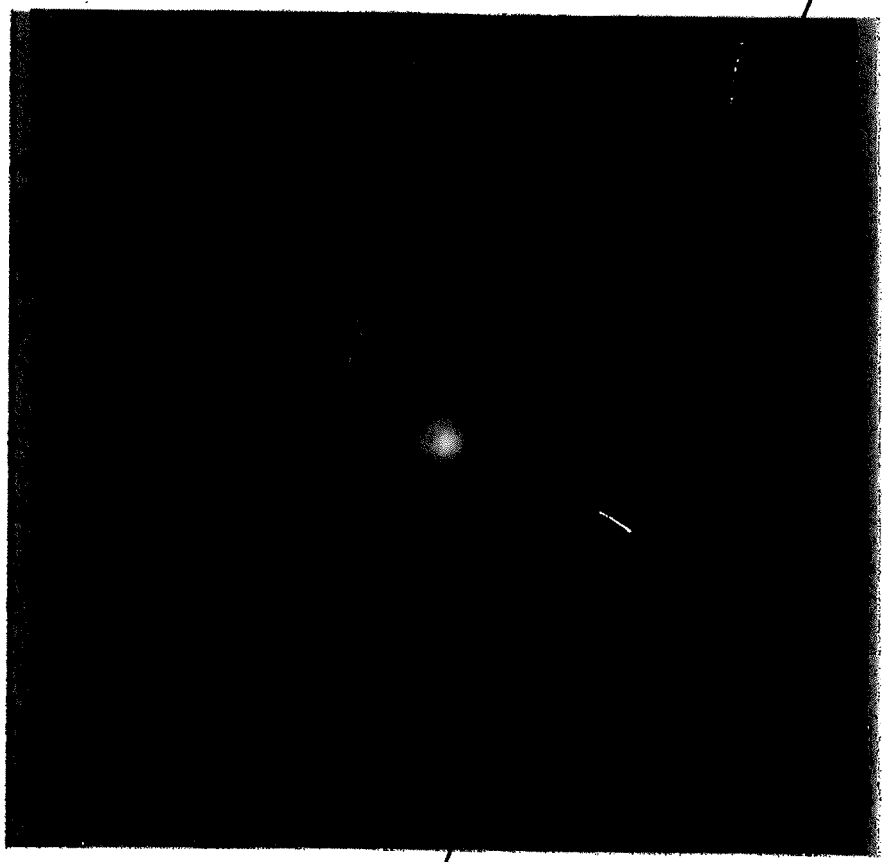


Fig.2C

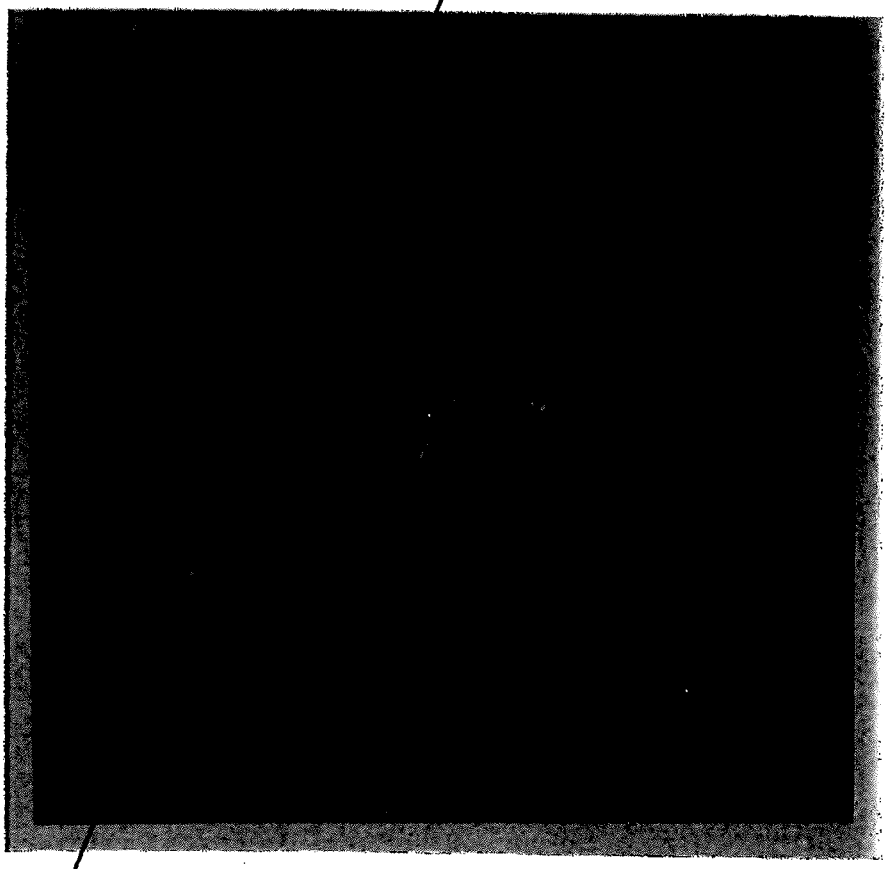


Fig.13

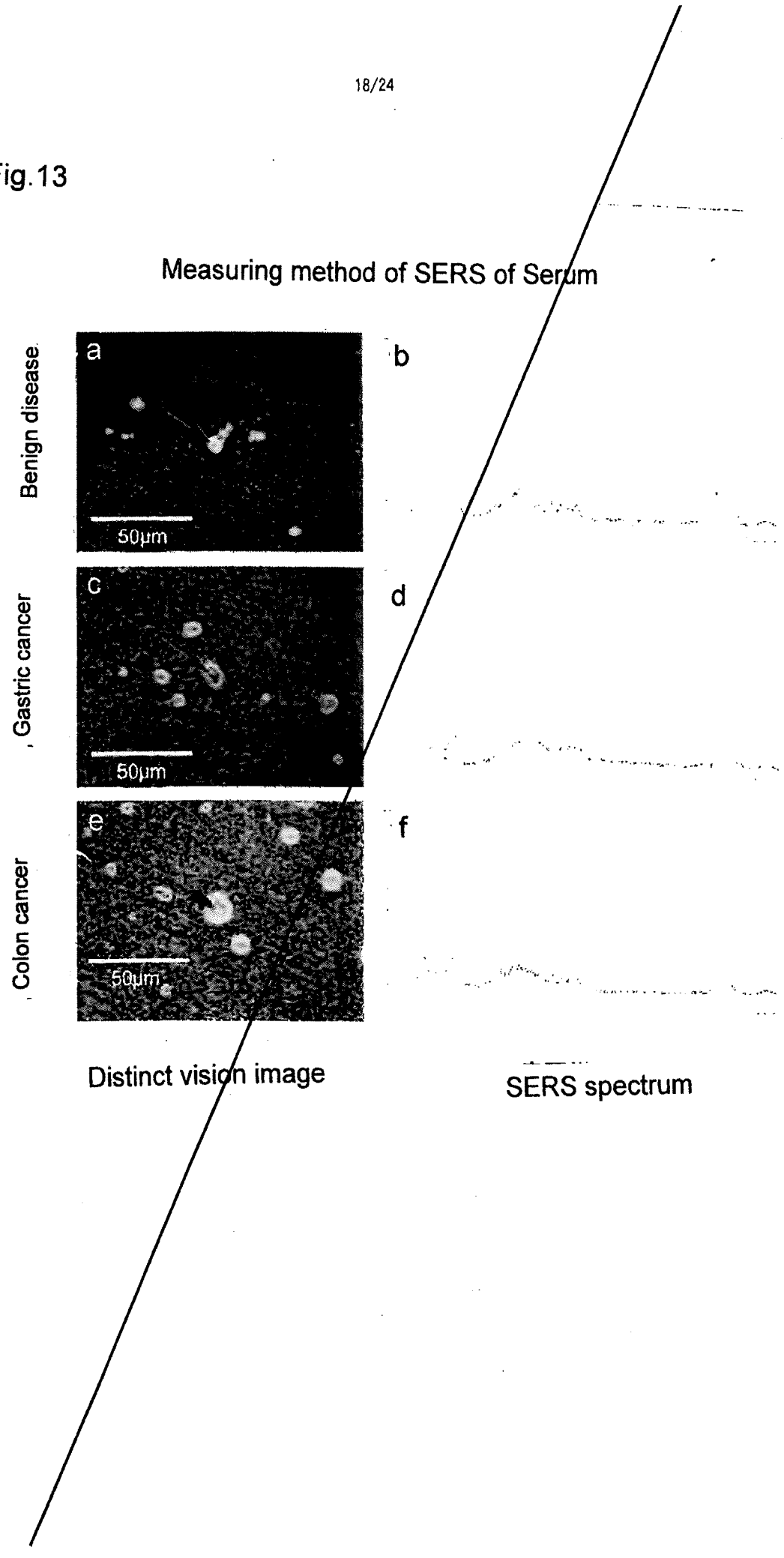

Measuring method of SERS of Serum
Benign disease
Gastric cancer
Colon cancer
a
b
c
d
e
f
50μm
50μm
50μm
Distinct vision image
SERS spectrum

Fig.14

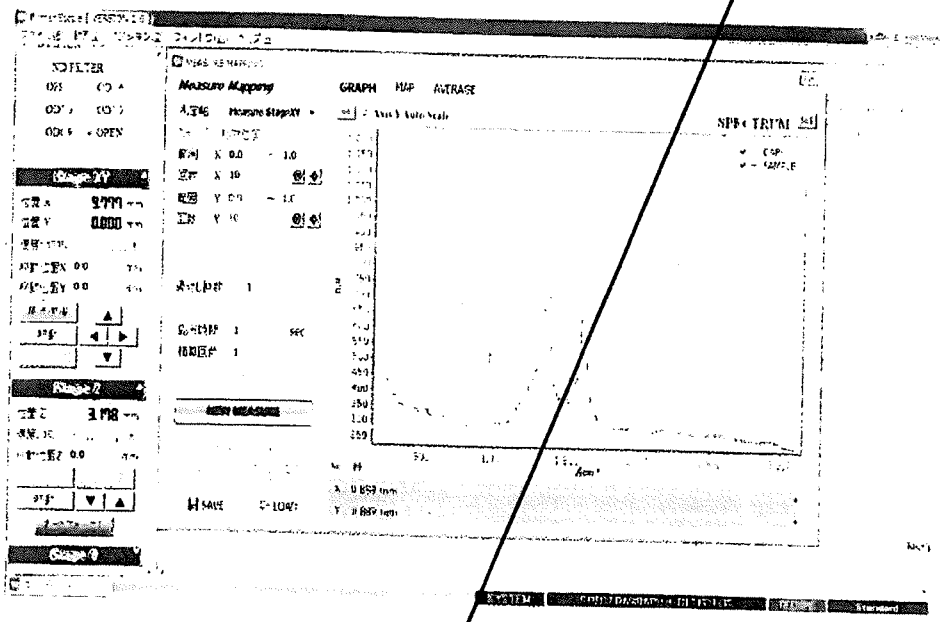


Fig.15

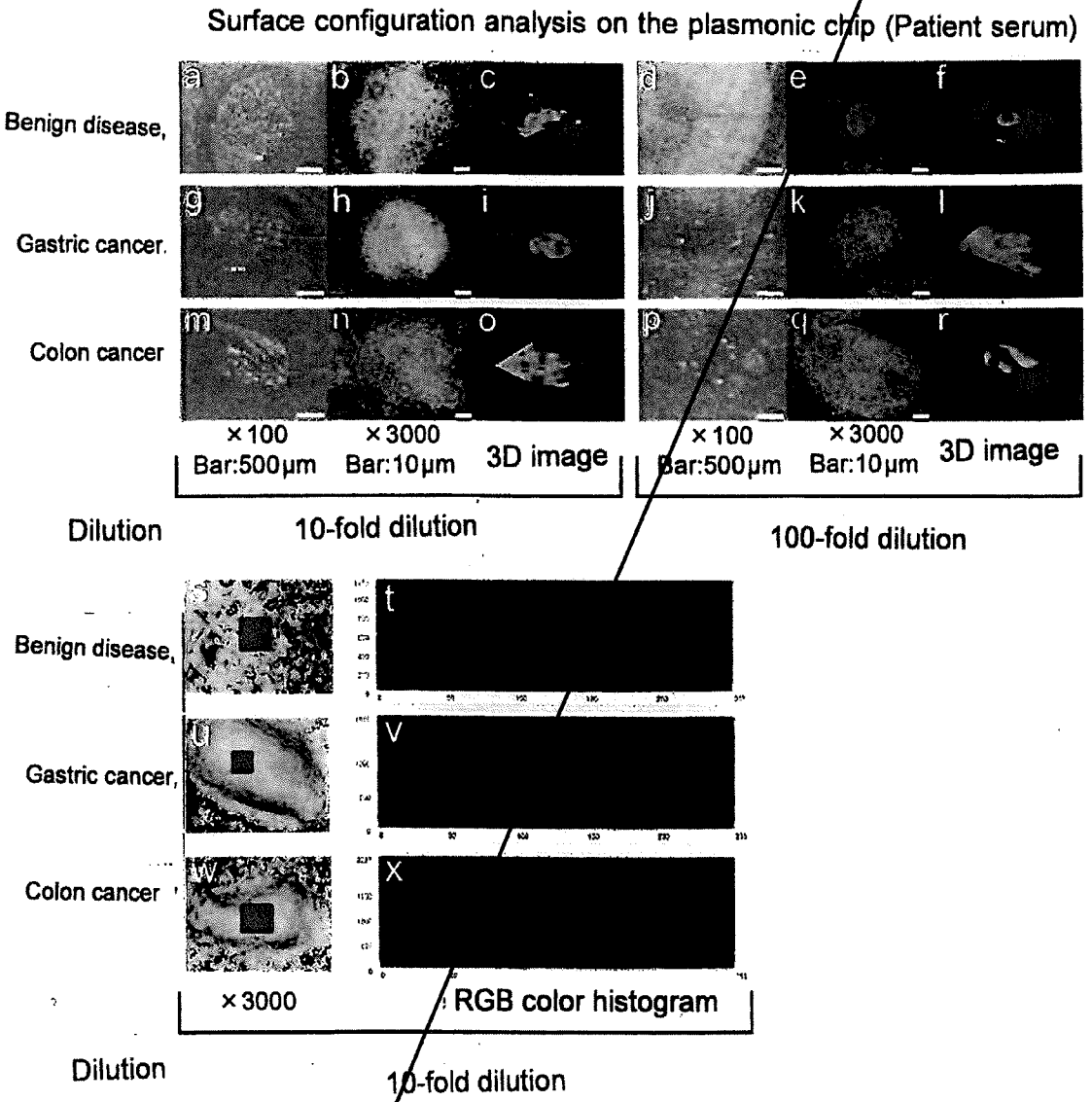

Surface configuration analysis on the plasmonic chip (Patient serum)
Benign disease,
Gastric cancer,
Colon cancer
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
×100
Bar:500μm
×3000
Bar:10μm
3D image
×100
Bar:500μm
×3000
Bar:10μm
3D image
Dilution
10-fold dilution
100-fold dilution
Benign disease,
Gastric cancer,
Colon cancer
t
V
X
×3000
RGB color histogram
Dilution
10-fold dilution

Fig.16

Surface configulation analysis of cultured cancer cell on the plasmonic chip

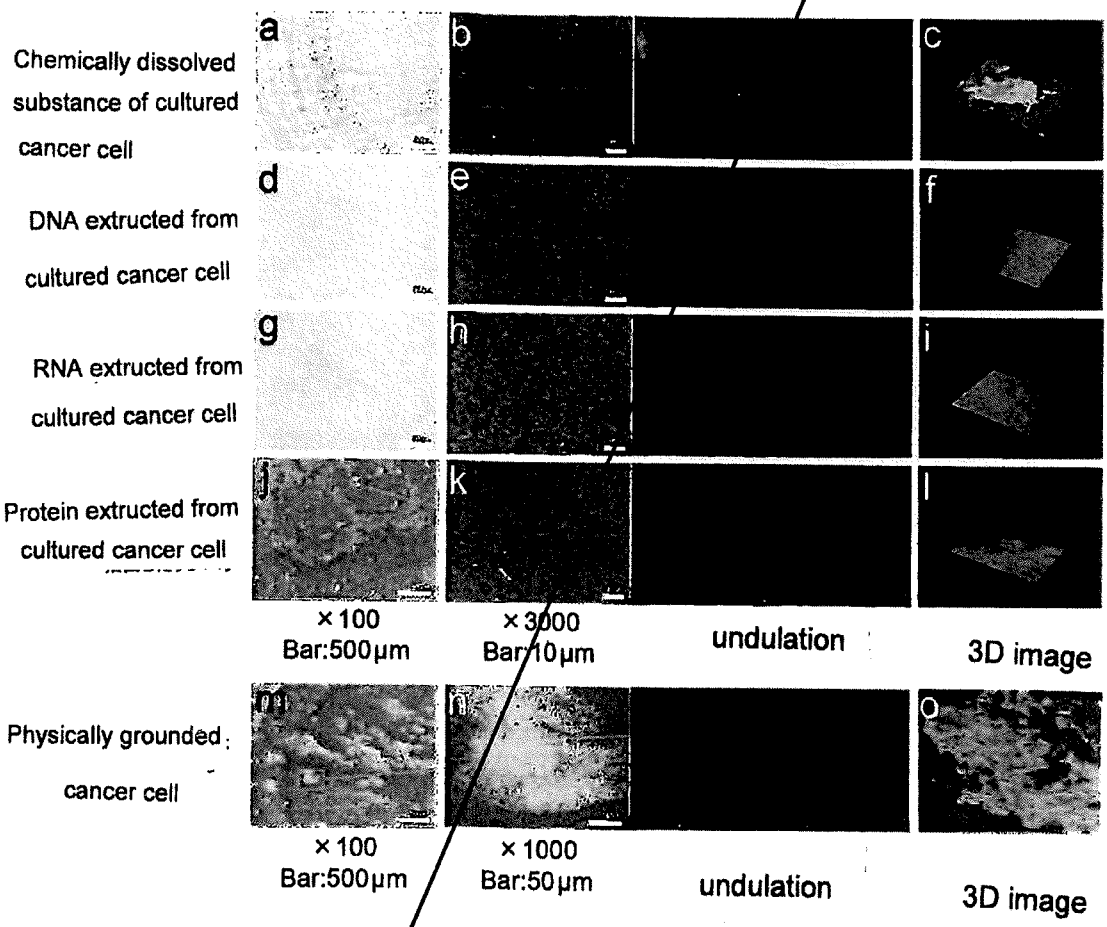


Fig.17

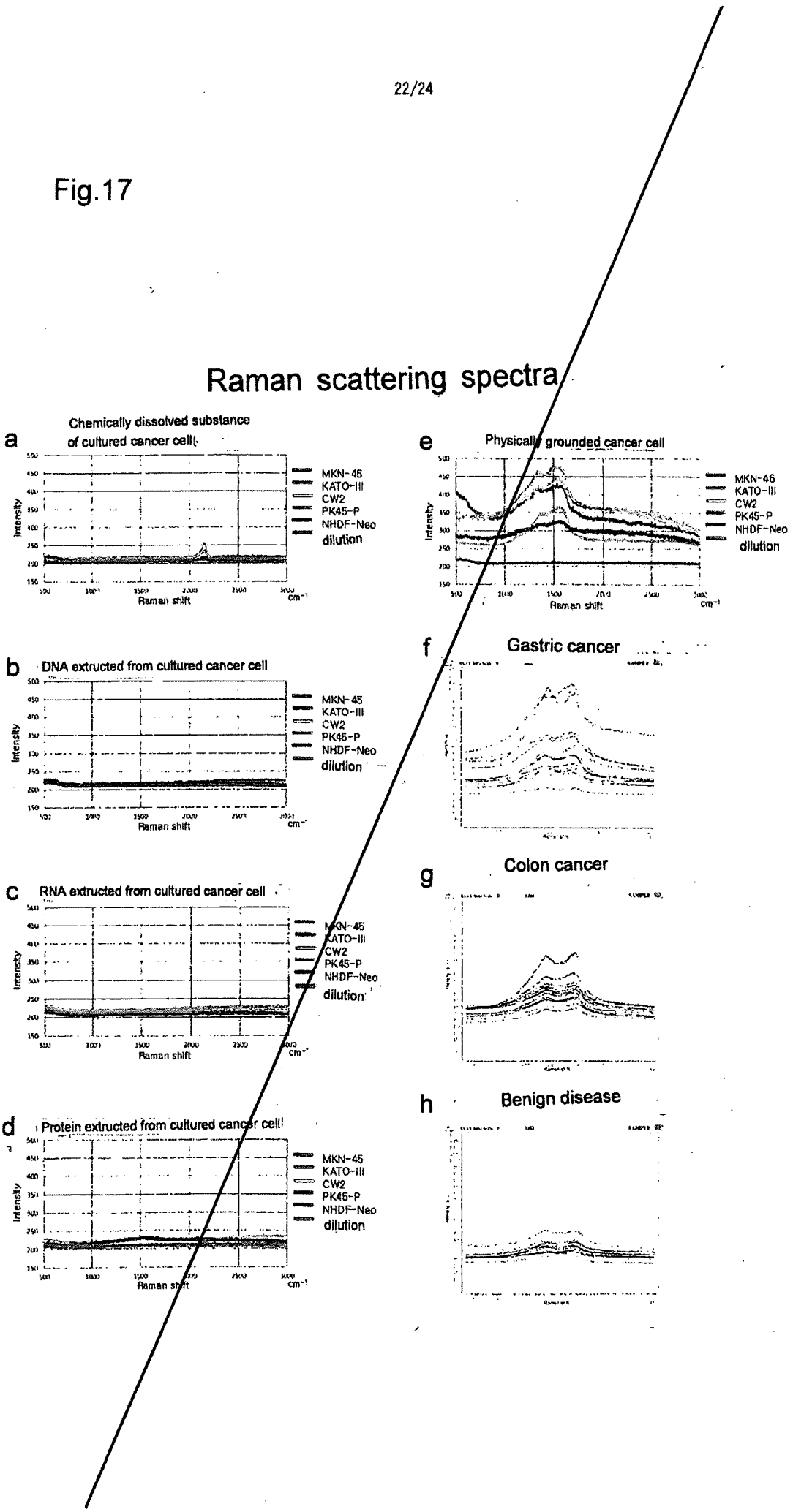

Raman scattering spectra
a
Chemically dissolved substance of cultured cancer cell
b
DNA extructed from cultured cancer cell
c
RNA extructed from cultured cancer cell
d
Protein extructed from cultured cancer cell
e
Physically grounded cancer cell
f
Gastric cancer
g
Colon cancer
h
Benign disease
MKN-45
KATO-III
CW2
PK45-P
NHDF-Neo
dilution
Intensity
Raman shift
cm-1

Fig.18

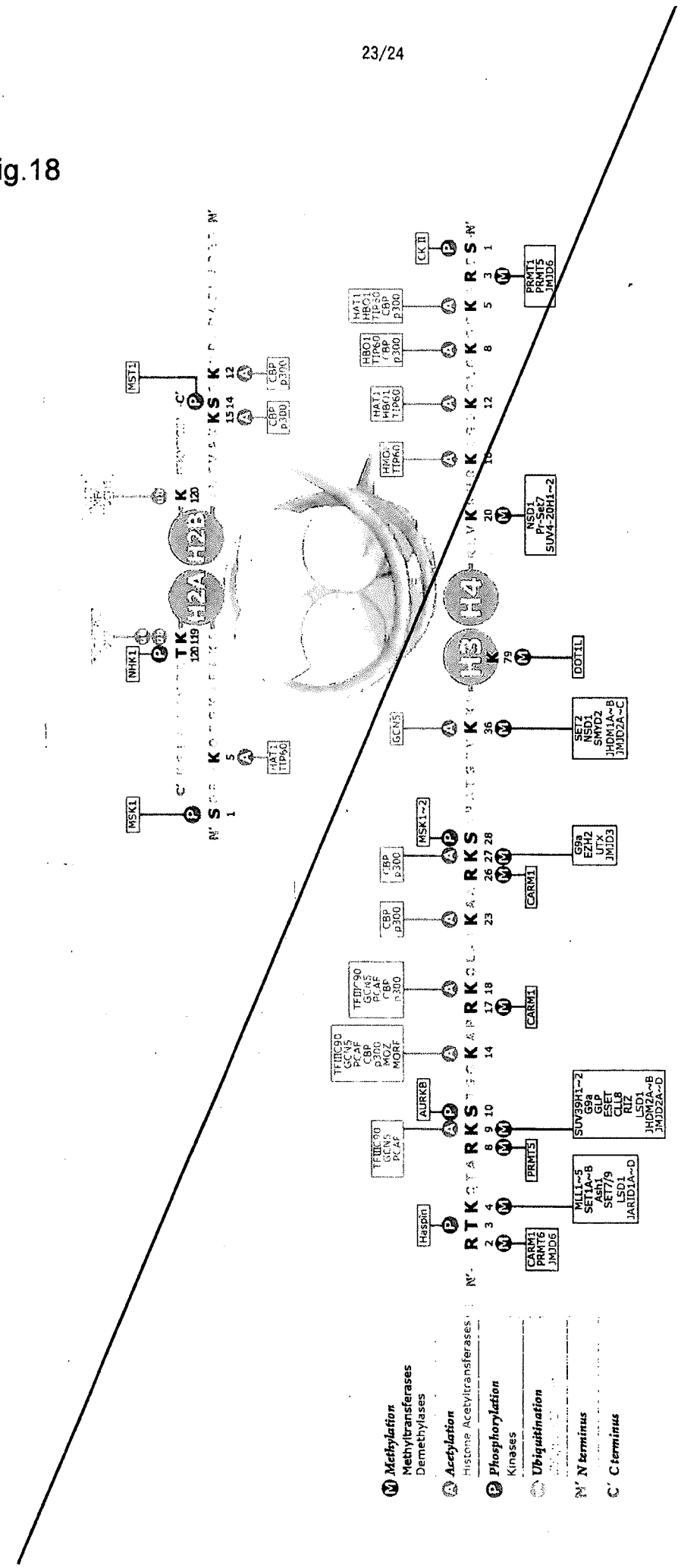

Methylation
Methyltransferases
Demethylases
Acetylation
Histone Acetyltransferases
Phosphorylation
Kinases
Ubiquitination
N terminus
C terminus
MST1
MSK1
NHK1
HAT1
TIP60
CBP
p300
AURKB
Haspin
CK II
PRMT1
PRMT5
JMJD6
NSD1
Pr-Set7
SUV4-20H1~2
DOT1L
SET2
NSD1
SMYD2
JHDM1A~B
JMJD2A~C
G9a
EZH2
UTX
JMJD3
CARM1
PRMT6
MLL1~5
SET1A~B
Ash1
SET7/9
LSD1
JARID1A~D
SUV39H1~2
G9a
GLP
ESET
CLL8
RIZ
LSD1
JHDM2A~B
JMJD2A~D
TFIIIC90
GCN5
PCAF
GCN5
PCAF
GCN5
PCAF
CBP
p300
BRG1
MOZ
MORF
TFIID90
GCN5
PCAF
CBP
p300
MSK1~2
GCN5
HMG
TIP60
HBO1
TIP60
HAT1
HBO1
TIP60
HAT1
HBO1
TIP60
CBP
p300

Fig.19

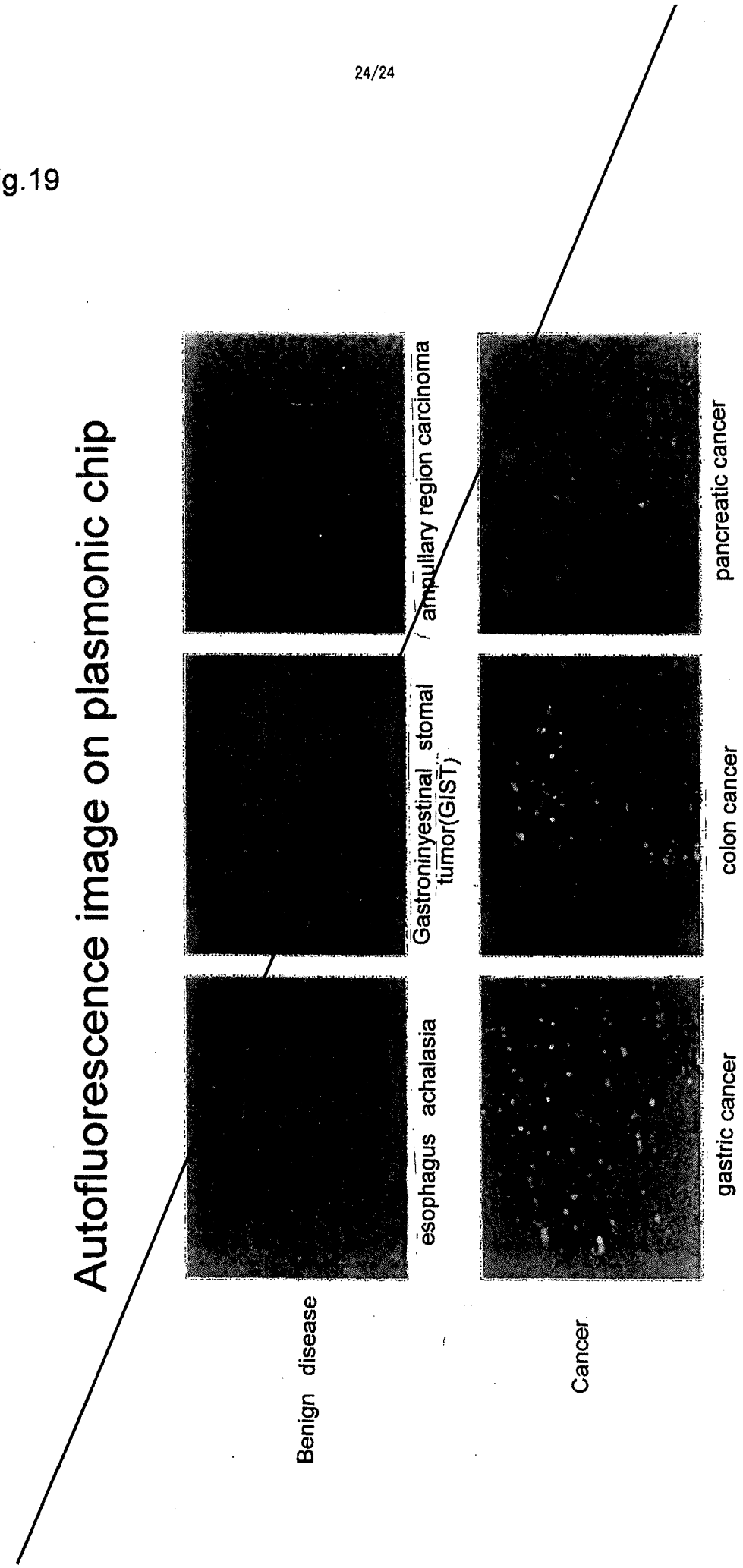

Autofluorescence image on plasmonic chip
Benign disease
Cancer
esophagus achalasia
Gastroninyestinal stomal tumor(GIST)
ampullary region carcinoma
gastric cancer
colon cancer
pancreatic cancer

Fig.1A

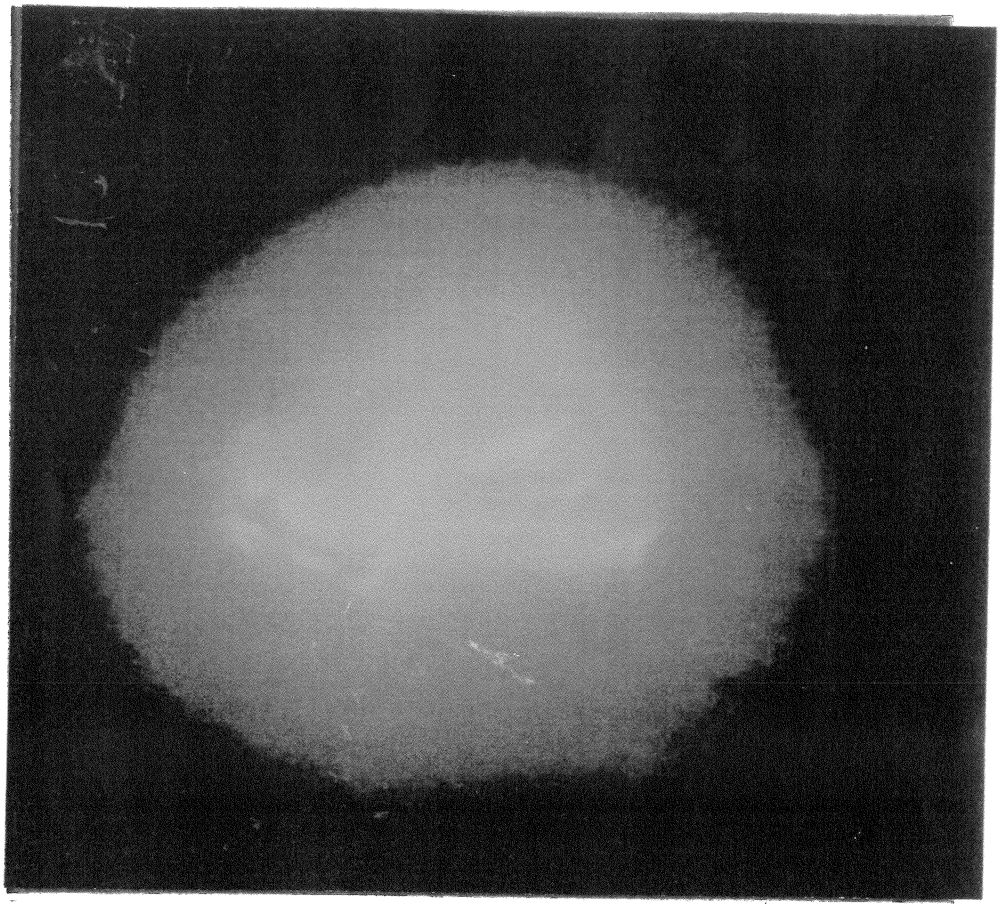


Fig.1B

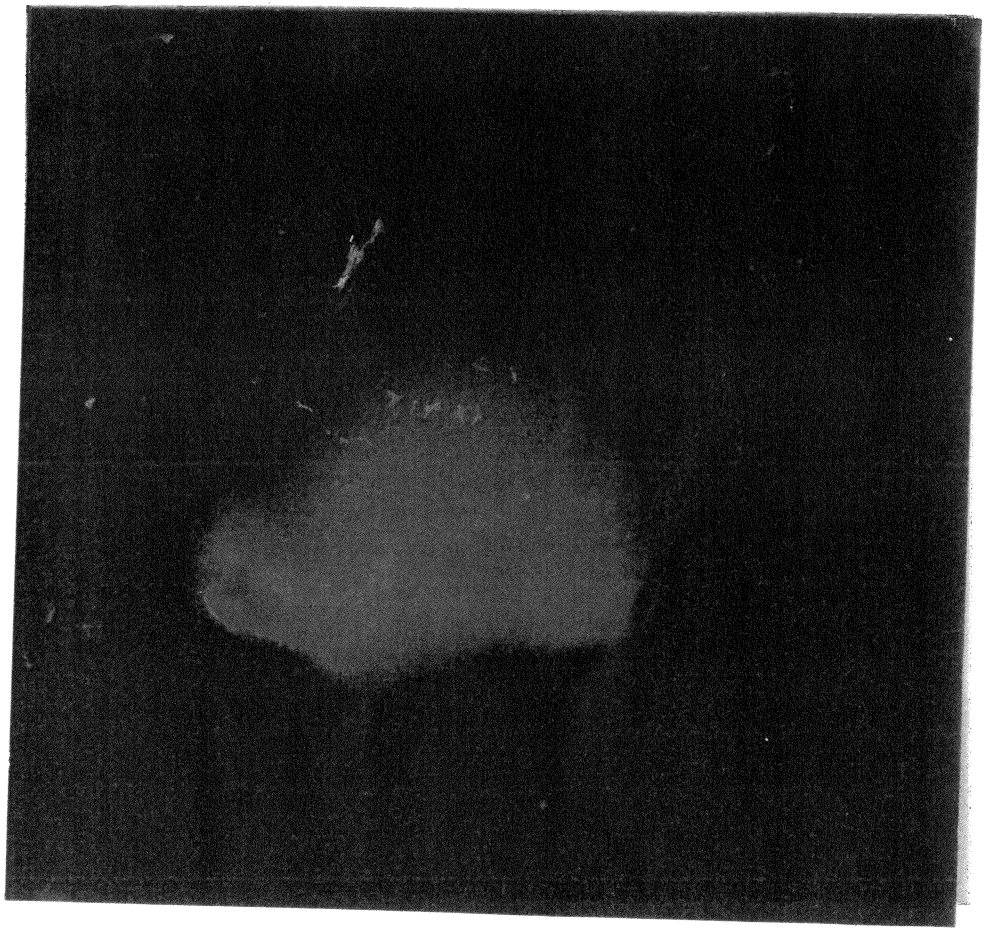


Fig.1C

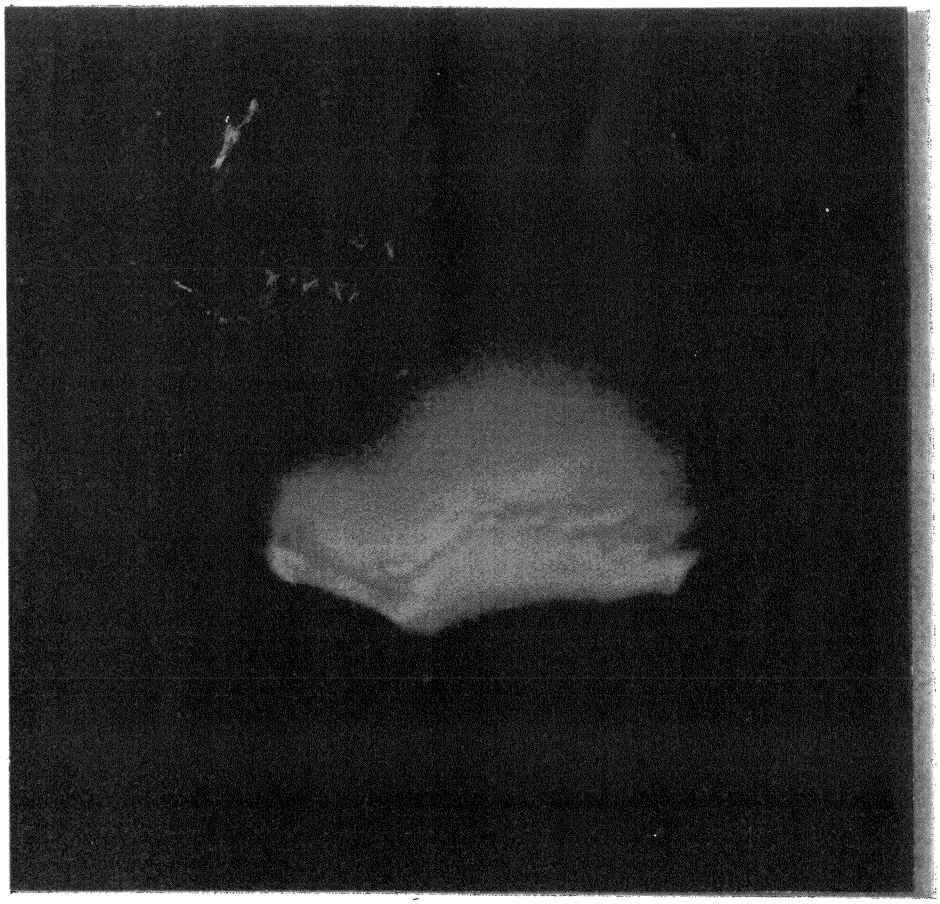


Fig.2A

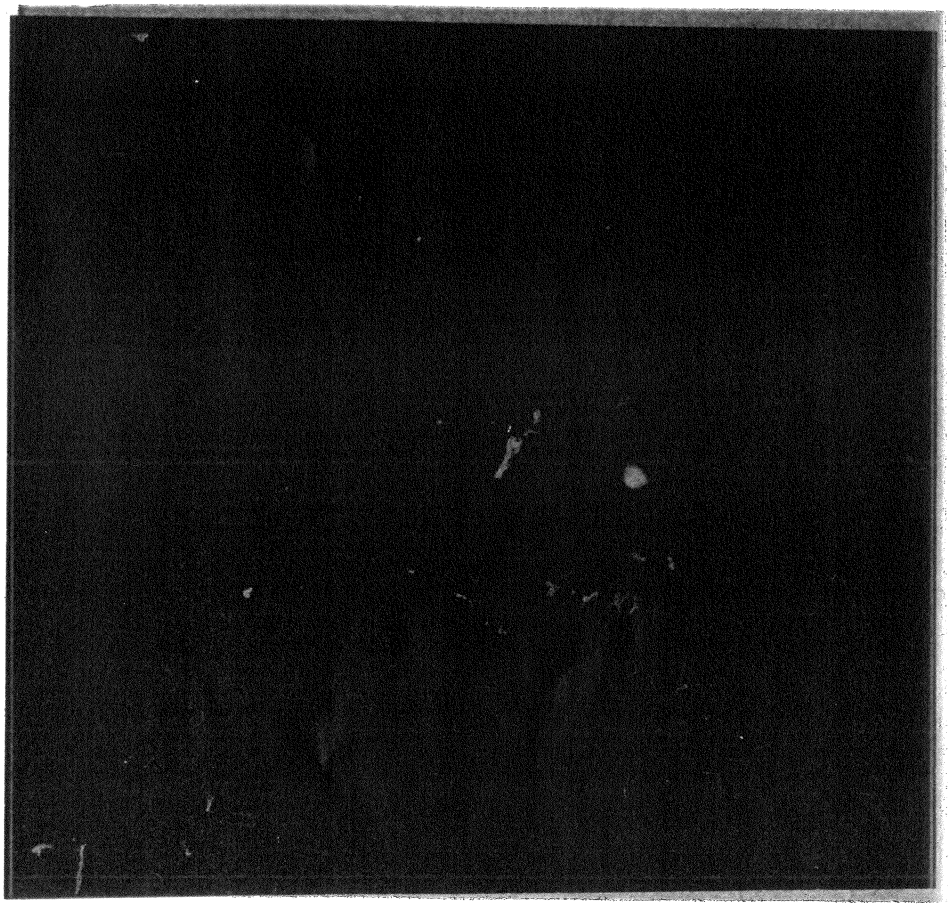


Fig.2B

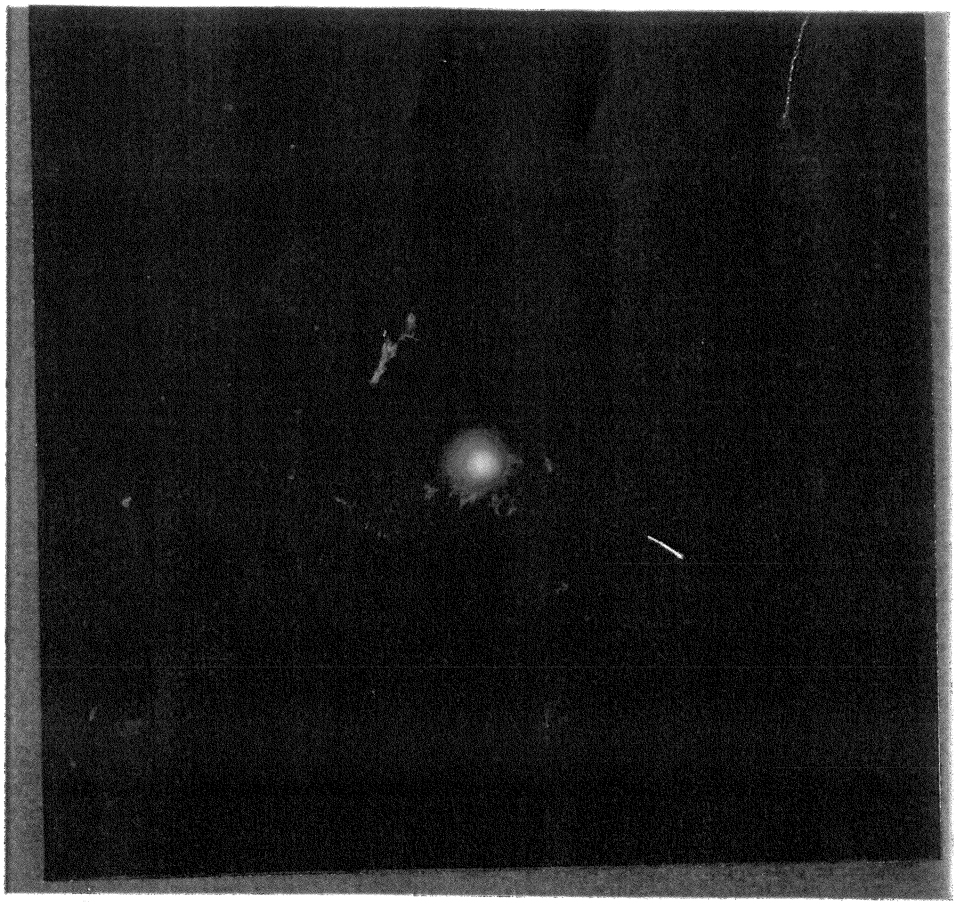


Fig.2C

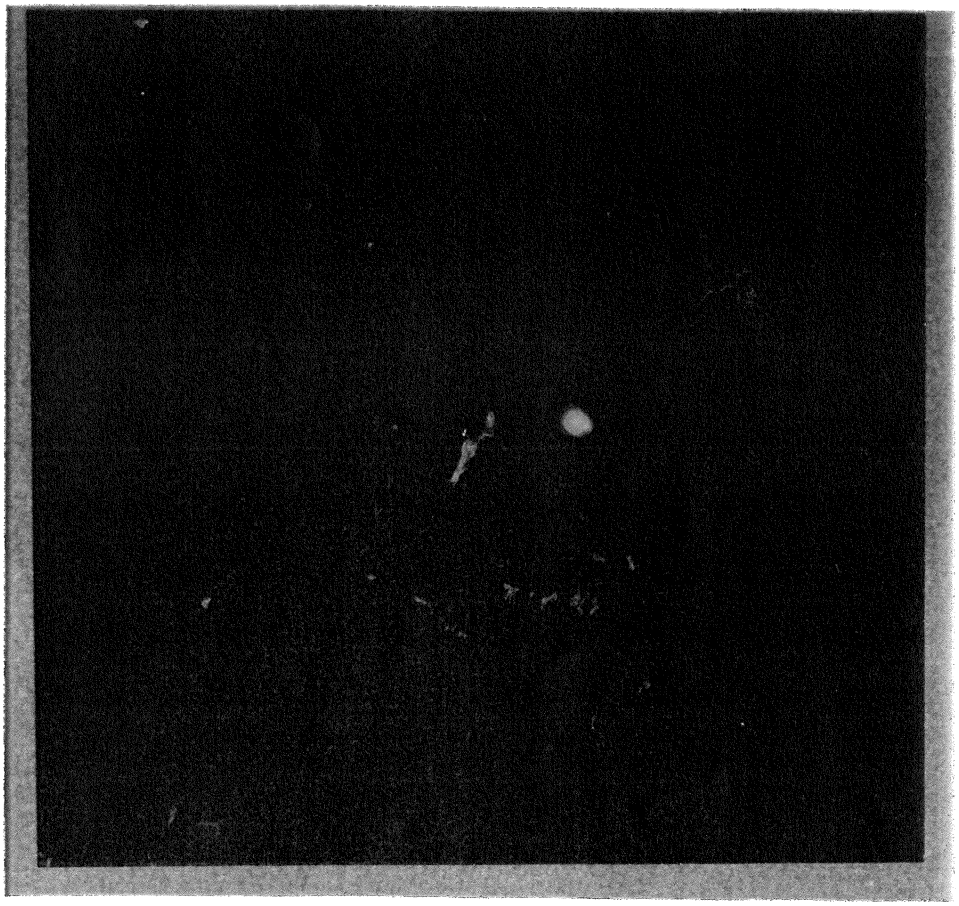


Fig.13

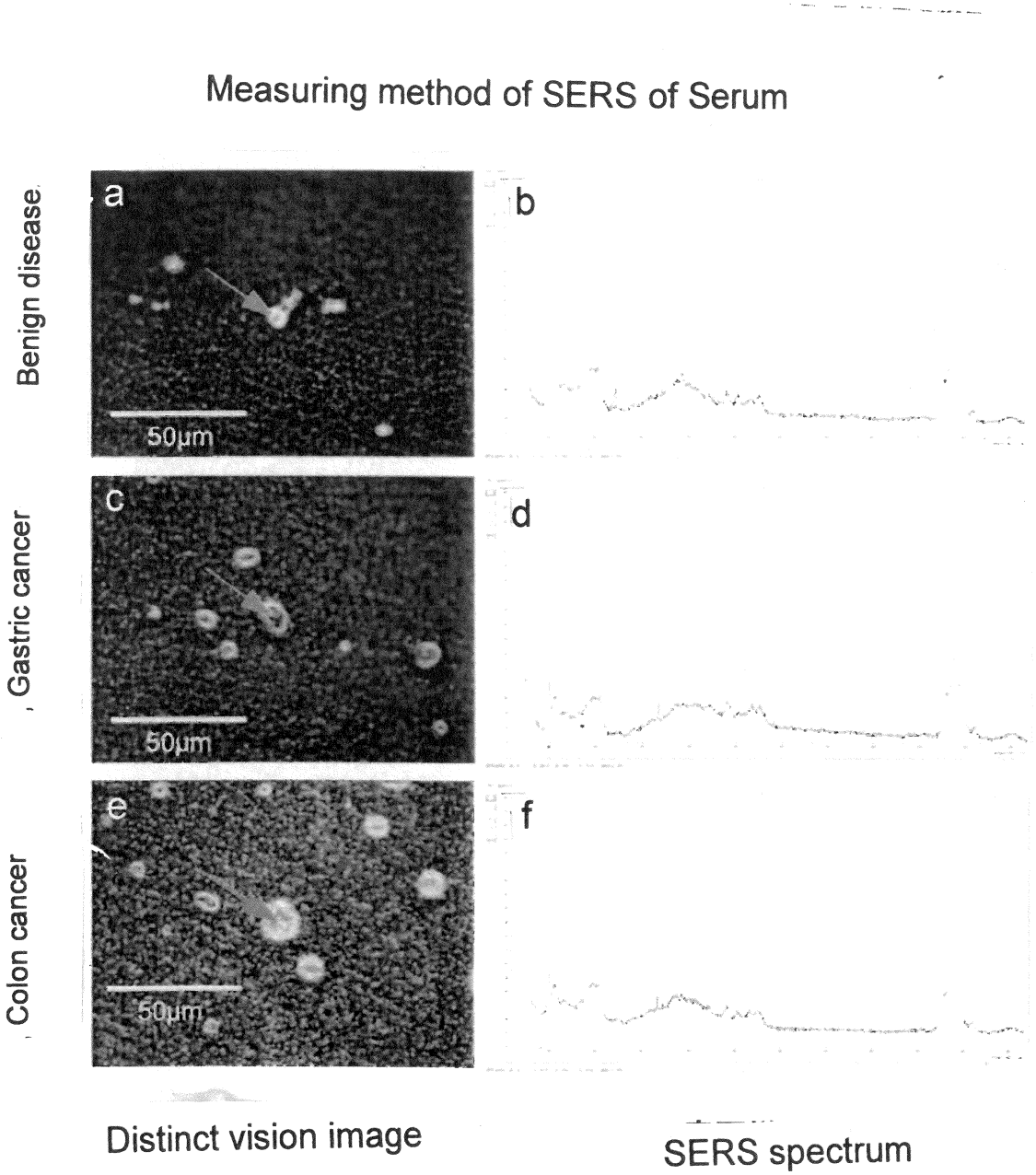

Measuring method of SERS of Serum
Benign disease
Gastric cancer
Colon cancer
a
b
c
d
e
f
50μm
50μm
50μm
Distinct vision image
SERS spectrum

Fig.14

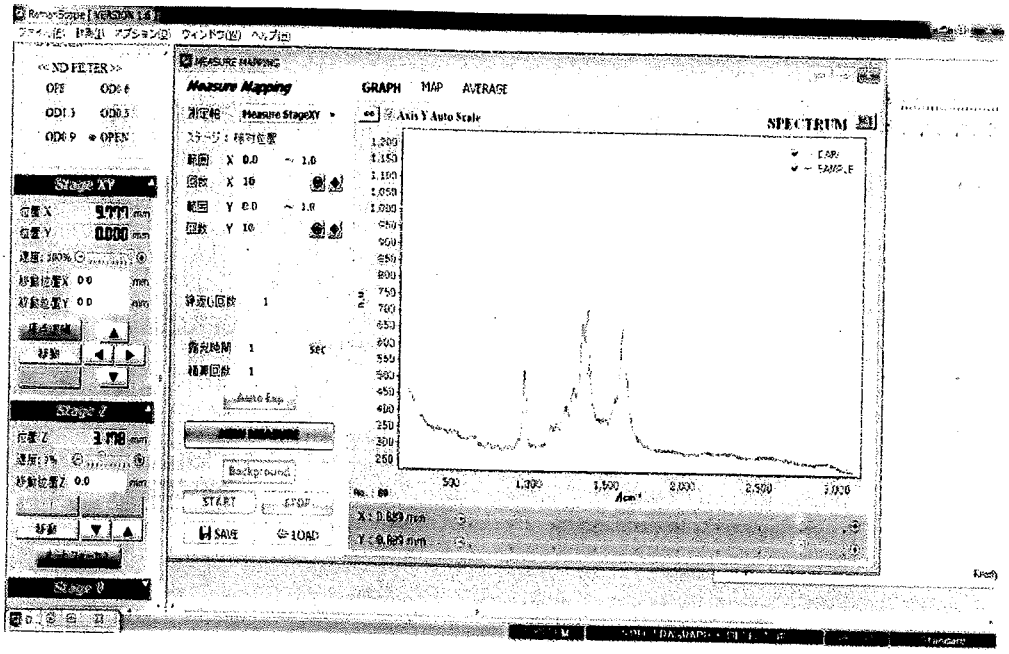

MEASURE MAPPING
Measure Mapping
GRAPH
MAP
AVERAGE
SPECTRUM
Background
START
STOP
SAVE
LOAD

Fig.15

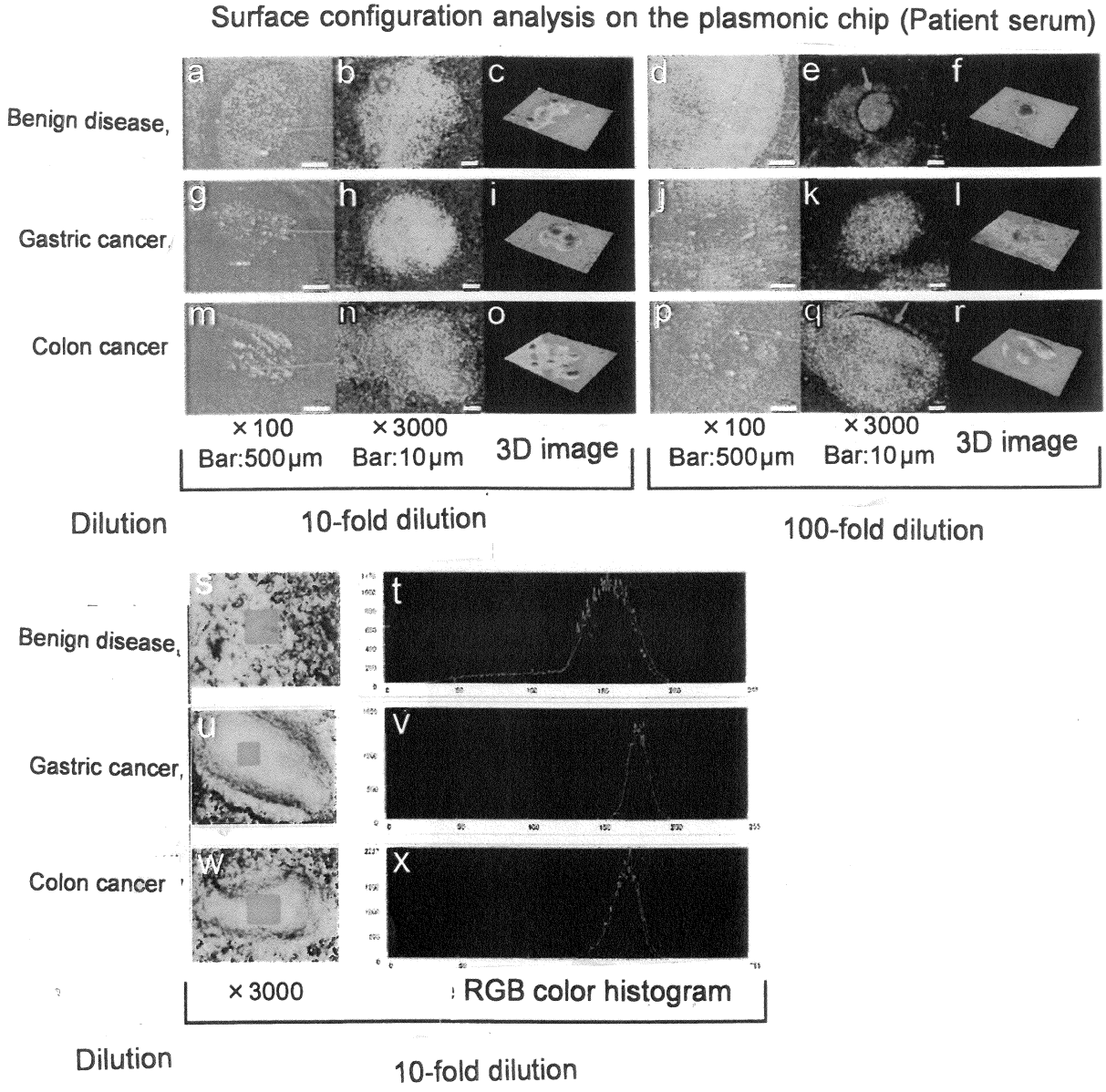

Surface configuration analysis on the plasmonic chip (Patient serum)
Benign disease,
Gastric cancer,
Colon cancer
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
×100
Bar:500μm
×3000
Bar:10μm
3D image
×100
Bar:500μm
×3000
Bar:10μm
3D image
Dilution
10-fold dilution
100-fold dilution
Benign disease,
Gastric cancer,
Colon cancer
s
t
u
v
w
x
×3000
RGB color histogram
Dilution
10-fold dilution

Fig.16

Surface configulation analysis of cultured cancer cell on the plasmonic chip

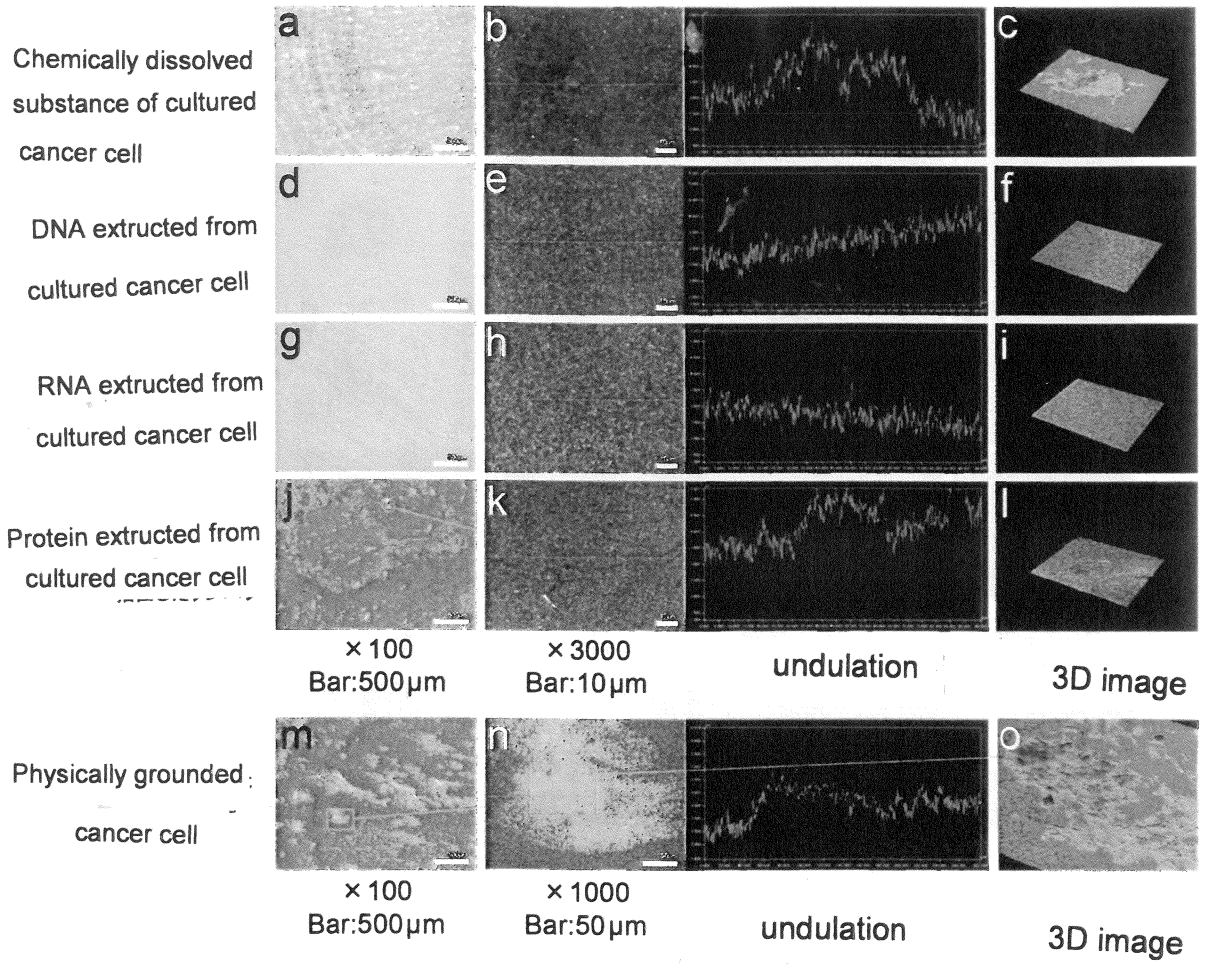


Fig.17

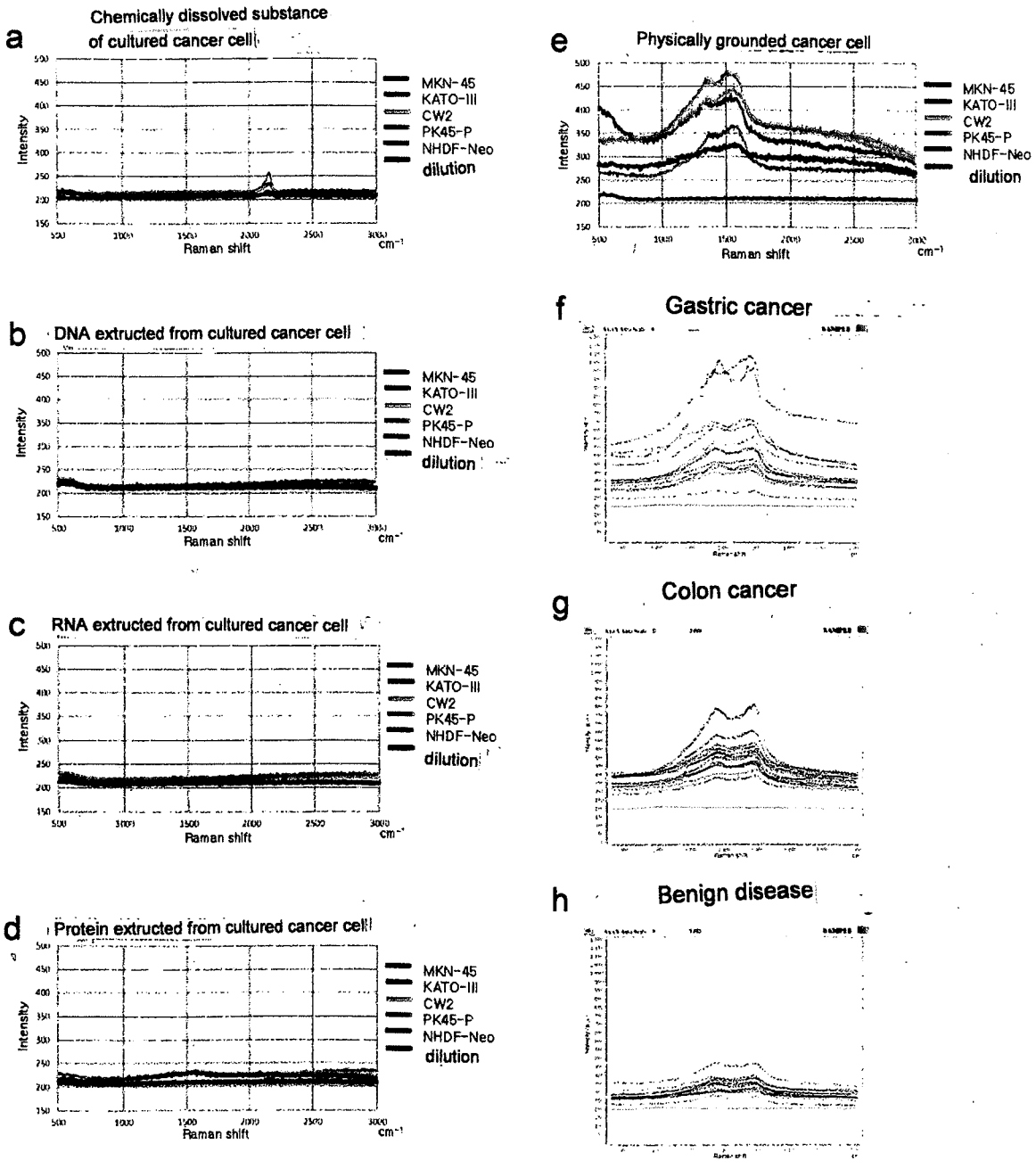

Raman scattering spectra
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Benign disease
MKN-45
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CW2
PK45-P
NHDF-Neo
dilution
Intensity
Raman shift
cm-1

Fig.18

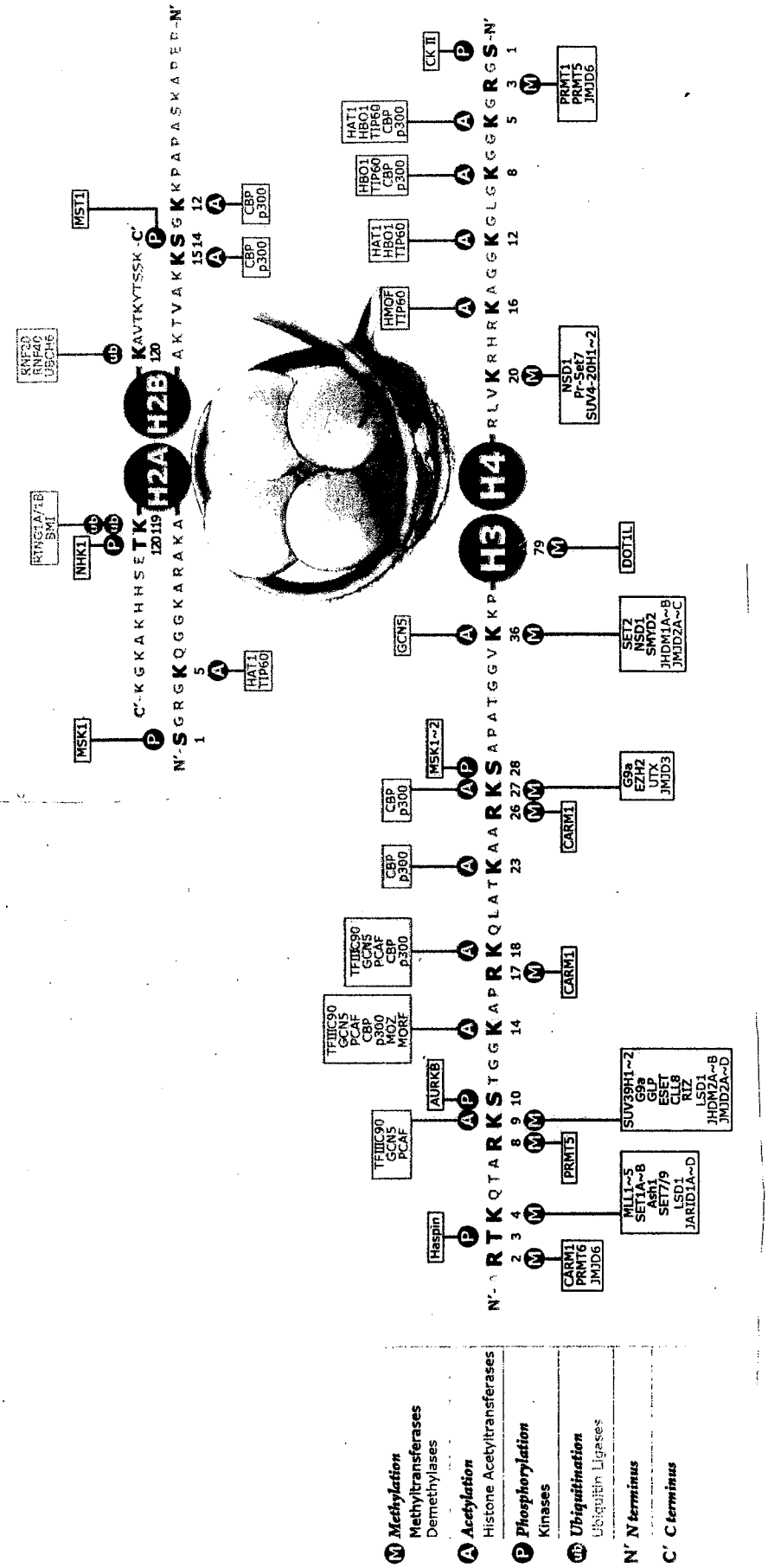
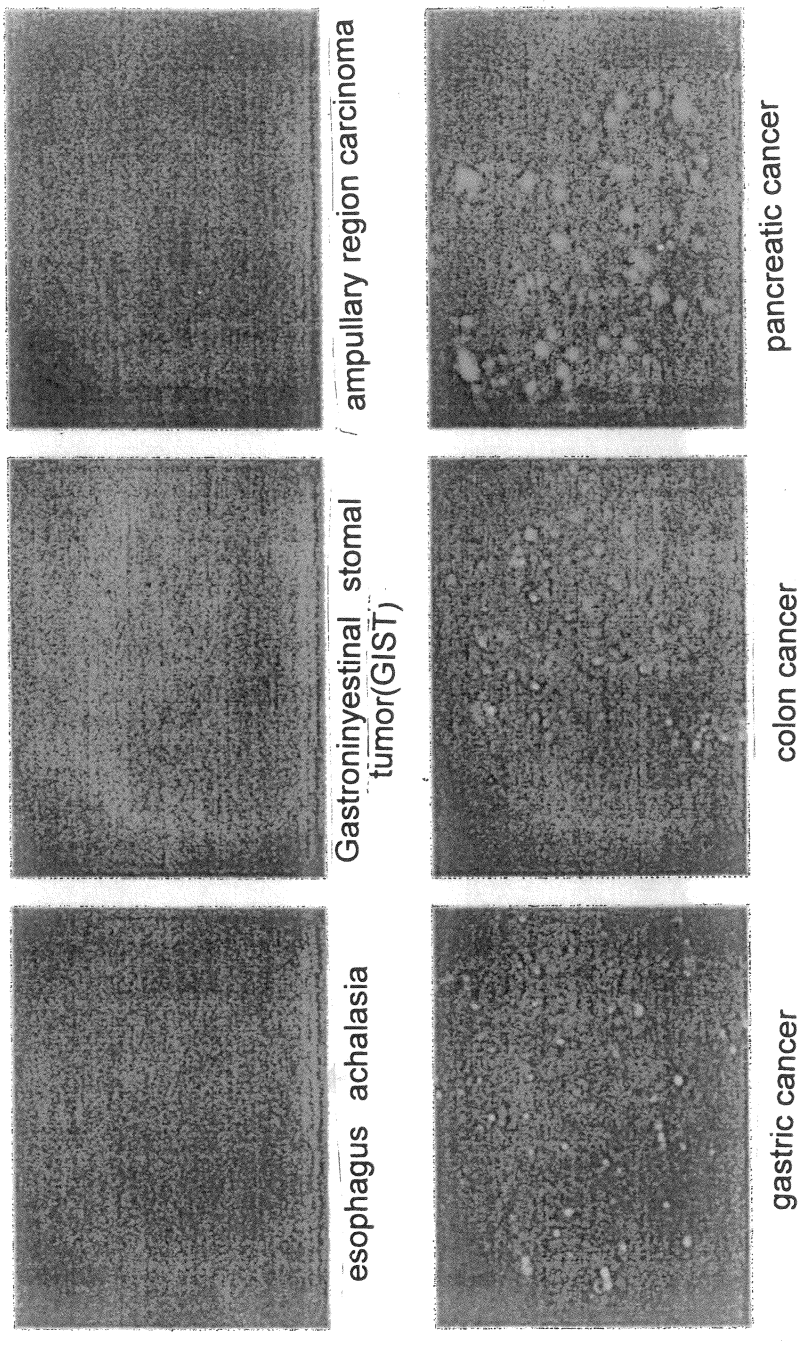

Methylation
Methyltransferases
Demethylases
Acetylation
Histone Acetyltransferases
Phosphorylation
Kinases
Ubiquitination
Ubiquitin Ligases
N' N terminus
C' C terminus
H2A
H2B
H3
H4
N'-SGRGKQGGKARAKAKTRKSSRAGLQFPVGRVHRLLRKGNYSERVGAGAPVYLAAVLEYLTAEILELAGNAARDNKKTRIIPRHLQLAIRNDEELNKLLGKVTIAQGGVLPNIQAVLLPKKTESHHKAKGK-C'
HAT1 TIP60
MSK1
NHK1
RING1A/1B BMI
RNF20 RNF40 UBCH6
MST1
CBP p300
HMOF TIP60
HBO1 TIP60 CBP p300
HAT1 HBO1 TIP60 CBP p300
CK II
PRMT1 PRMT5 JMJD6
NSD1 Pr-Set7 SUV4-20H1~2
DOT1L
SET7 NSD1 SMYD2 JHDM1A~B JMJD2A~C
G9a EZH2 UTX JMJD3
CARM1
M5K1~2
TFIIIC90 GCN5 PCAF CBP p300 MOZ MORF
AURKB
Haspin
CARM1 PRMT6 JMJD6
PRMT5
MLL1~5 SET1A~8 Ash1 SET7/9 LSD1 JARID1A~D
SUV39H1~2 G9a GLP ESET CLL8 RIZ LSD1 JHDM2A~B JMJD2A~D

Fig.19


Autofluorescence image on plasmonic chip
Benign disease
Cancer
esophagus achalasia
Gastroninyestinal stomal tumor(GIST)
ampullary region carcinoma
gastric cancer
colon cancer
pancreatic cancer