

2

DNA chip Total Support

Mineno Junichi

Takara Shuzo Co., Ltd.

1.

, 52 , 5
(2001 11)
가 1).



2 Affymetrix® 417™ Arrayer

microarray(DNA chip) , DNA (1) DNA chip
DNA chip DNA chip 가 Slide glass DNA
가 “ On chip ” slide glass DNA
“ spotting ”
“ spotting ” 2 Takara
DNA chip Takara 「 Affymetrix® 417™ Arrayer 」 6), 7). pin
& ring DNA ring solid pin
. DNA chip spot . Microplate
1 cDNA slide glass spotting , pin
. Spot μm
DNA chip . Spot pL,
spot 150 μm .

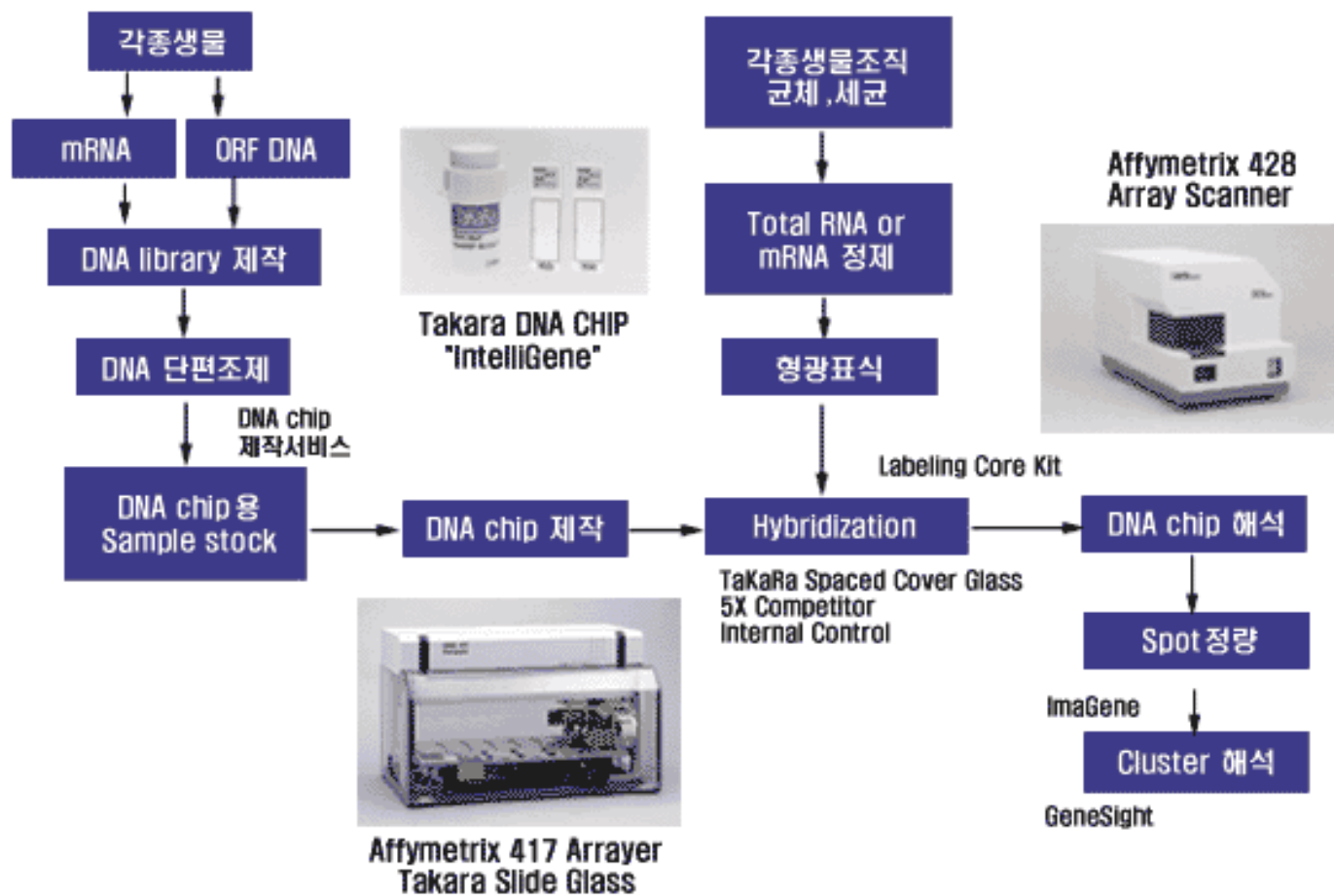
2. DNA chip

Takara array DNA
DNA chip

DNA chip

* Tel: 031 - 456 - 6969 Fax:
031 - 456 - 6963

* E - mail: r&d@takara.co.kr



1 DNA chip

1 2 3 ()

다카라코리아바이오메디칼주식회사

2

DNA chip Total Support

Mineno Junichi

Takara Shuzo Co., Ltd.

(2) cDNA slide glass
 Spot DNA PCR
 • DNA , spot DNA
 sequencing ,
 (~ ng/μL) .Spot DNA
 slide glass
 . Takara
 slide glass 「TaKaRa Slide Glass」
 , cDNA spot
 (+) DNA (-
)



3 Affymetrix® 428™ Array Scanner

3.
 2 (• •
) kit total
 RNA mRNA •
 . RNA 가
 , (5 ng~) RNA 가
 「Agilent 2100 Bioanalyzer」
 , internal control(「
 poly A+ RNA - A」 「Human TFR(1 kb)
 RNA」)100 pg 가
 . internal control
 Takara DNA chip
 「IntelliGene™」 control spot ,
 . DNA chip
 control spot ,
 「Template & Primer Set」
 DNA 가 . kit

6.
 (1) spot
 signal software , spot
 • . Takara
 spot software 「ImaGene™」
 spot , sub grid
 , spot
 ,
 quality control empty spots
 poor spots , flagging 가 .
 Add in module “GeneSight Lite”
 , scatter plot
 , histogram
 .
 (2) Cluster
 DNA chip

「RNA Fluorescence Labeling Core Kit」

dye

cluster

. Cluster

column, tube가

mRNA poly A tail

9)~11). Cluster

genome repeat

가

12)

13)

hybridization

가

. Takara

cluster

competitor

가

softwar 「GeneSight™」

Takara

Human

, Mouse

「5 x

cluster

K - means

SOM(self -

Competitor」

가

organizing map),

cluster

가

, competitor

(Hierarchical Clustering: 4), PCA plot

buffer

hybridization

time series plot

. Cluster

3

Euclid

, Piason

4. Hybridization

가

cluster

DNA chip

probe

(complete),

(average),

10~100 μL

hybridization

(centroid), Ward

가

가 가

1

5. DNA chip : DNA chip scanner

DNA chip scanner

CCD

lazer+PMT

Takara

DNA chip scanner

「Affymetrix® 428™ Array Scanner」 (

3)

가

lazer+PMT

, focus range가

가

S/N

. Lazer 2

3

9

“ Flying

Objective Microscope ”

10 μm

slide glass

2 30

가

. Cy3™, Cy5™

scanning

16 bit

TIF

software

7. DNA chip

Takara

DNA chip

「IntelliGene™」 series14)~16) , 12

DNA chip

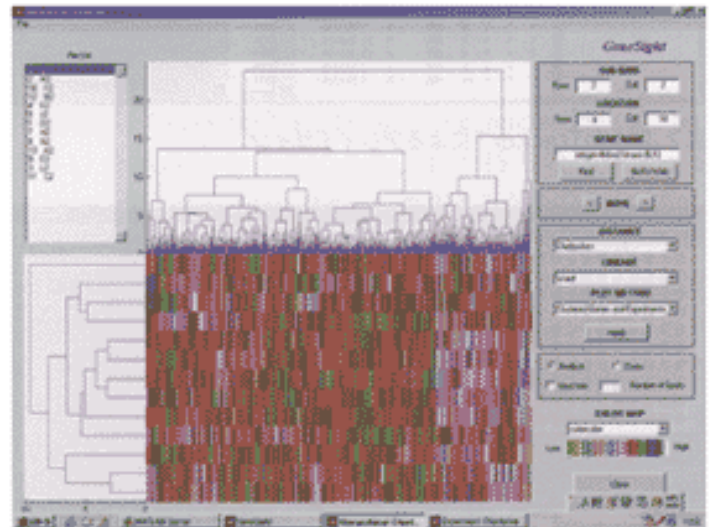
(1

5).

DNA chip internal control spot,

normalization housekeeping gene,

negative control spot (6)



4 GeneSight™

cluster

1 2 3

()

다카라코리아바이오메디칼주식회사

2

DNA chip Total Support

Mineno Junichi

Takara Shuzo Co., Ltd.

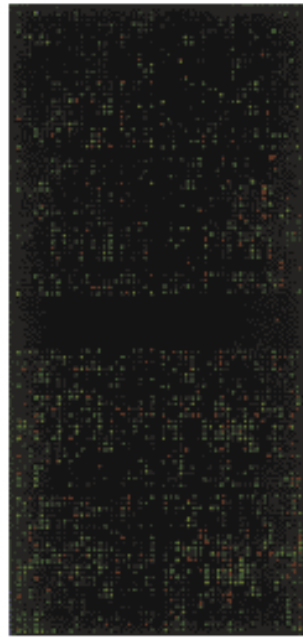
1	Gene ID file
「IntelliGene™」	software 「ImaGene™」
Stop	. DNA chip spot DNA
Human Cytokine CHIP Version 2.0	spotting QC spot lot
Human 1 K CHIP Set	.
Human Apoptosis CHIP Version 1.1	8.
Human Cancer CHIP Version 3.0	Takara
Human DNA CHIP for endocrine disruption study Version 1.1	DNA chip
Human Stem Cell CHIP Version 1.0	bioinformatics가
Mouse CHIP Set	DNA chip
Rat Toxicology CHIP Version 1.0	,
Arabidopsis CHIP Version 1.0	. DNA chip
Cyano CHIP Version 1.2	
E. coli CHIP Version 1.0	18). Takara
TestARRAY Version 3.0	DNA microbeads “ Functional DNA chip ” 가 . DNA microbeads

Life Science & Biotechnology 19 - 21

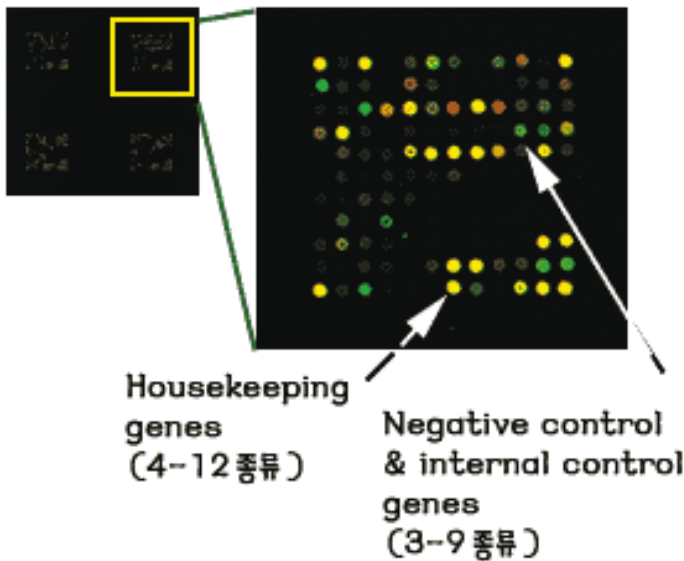
【 】

1) <http://igweb.intergratedgenomics.com/GOLD/>

2) , 4, No. 1, (2000).



5 IntelliGene E. coli CHIP Version 1.0
 K12 W3110 ORF 94%
 4028 DNA spot
 5 M9 - CAA RNA
 Cy3™ ,LB
 RNA Cy5™ Probe competitive
 hybridization M9 -
 CAA



6 Human DNA CHIP for endocrine disruption study Version 1.1 control
 IntelliGene DNA chip
 negative control, internal control ,

- 3) 「DNA Microarray PCR」 (2000)
- 4) S. P. A. Folder, J. L. Read, M. C. Pirrung, L. Stryer, and T. L. D. Solas: Science, 251, 767 - 773(1991).
- 5) M.Shena, D. Shalon, R. W. Davis, and P. O. Brown: Science, 270, 467 - 470 (1995)
- 6) Life Science & Biotechnology 10, 2 - 5 (1999)
- 7) Life Science & Biotechnology 11, 2 - 5 (1999)
- 8) Life Science & Biotechnology 18, 10 - 11(2001)
- 9) S. Chu, J. DeRisi, M. Eisen, J. Mulholland, D. Botstein, and P. O. Brow: Science, 282, 699 - 705(1998).
- 10) P.Tamayo, D. Slonim, J. Mesirov, Q. Zhu, S. Kitareewan, E. Dmitrovsky, E. S. Lander, and T. R. Golub: Proc. Natl. Acad. Sci. U. S. A., 96, 2907 - 2912 (1999).
- 11) H. Okabe, S. Satoh, T. Kato, O. Kitahara, R. Yanagawa, Y. Yamaoka, T. Tsunoda, Y. Furukawa, and Y. Nakamura: Cancer Res., 61, 2129 - 2137(2001).
- 12) 「Cluster , Phage Clustering」 (1999)
- 13) 「 Bioinformatics」 (2001)
- 14) Life Science & Biotechnology 18, 2 - 6 (2001)
- 15) Life Science & Biotechnology 20, 8 - 9 (2001)
- 16) Life Science & Biotechnology 21, 2 - 3 (2001)
- 17) Life Science & Biotechnology 15, 7 - 9 (2000)

housekeeping gene spot

. 17)

17). DNA

chip spot

[IntelliGene Series Download Service]

download .

- 18) L. Luo, R. C. Salunga, H. Guo, A. Bittner, K. C. Joy, J. E. Galindo, H. Xiao, K. E. Rogers, J. S. Wan, M. R. Jackson, and M. G. Erlander: Nature Med., 5, 117 - 122(1999)
- 19) Life Science & Biotechnology 20 (2001)

1 2 3

()

다카라코리아바이오메디칼주식회사