http//TMA.abxis.com

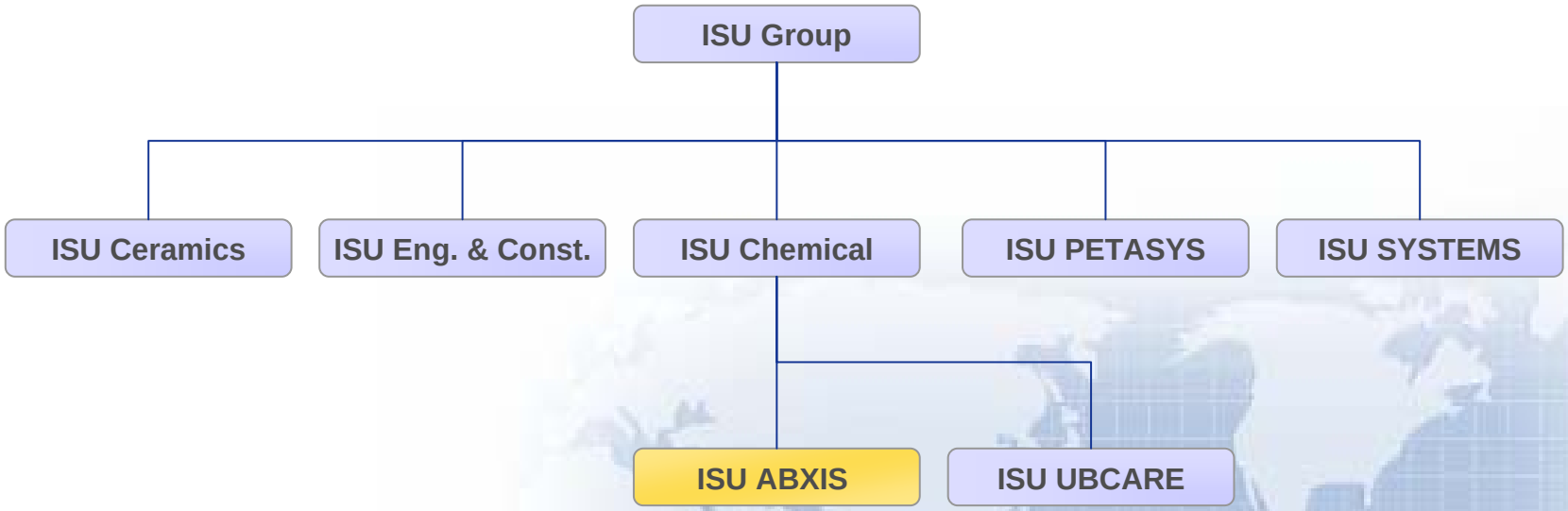
ISU ABXIS CO., LTD

Contents

Summary

Company

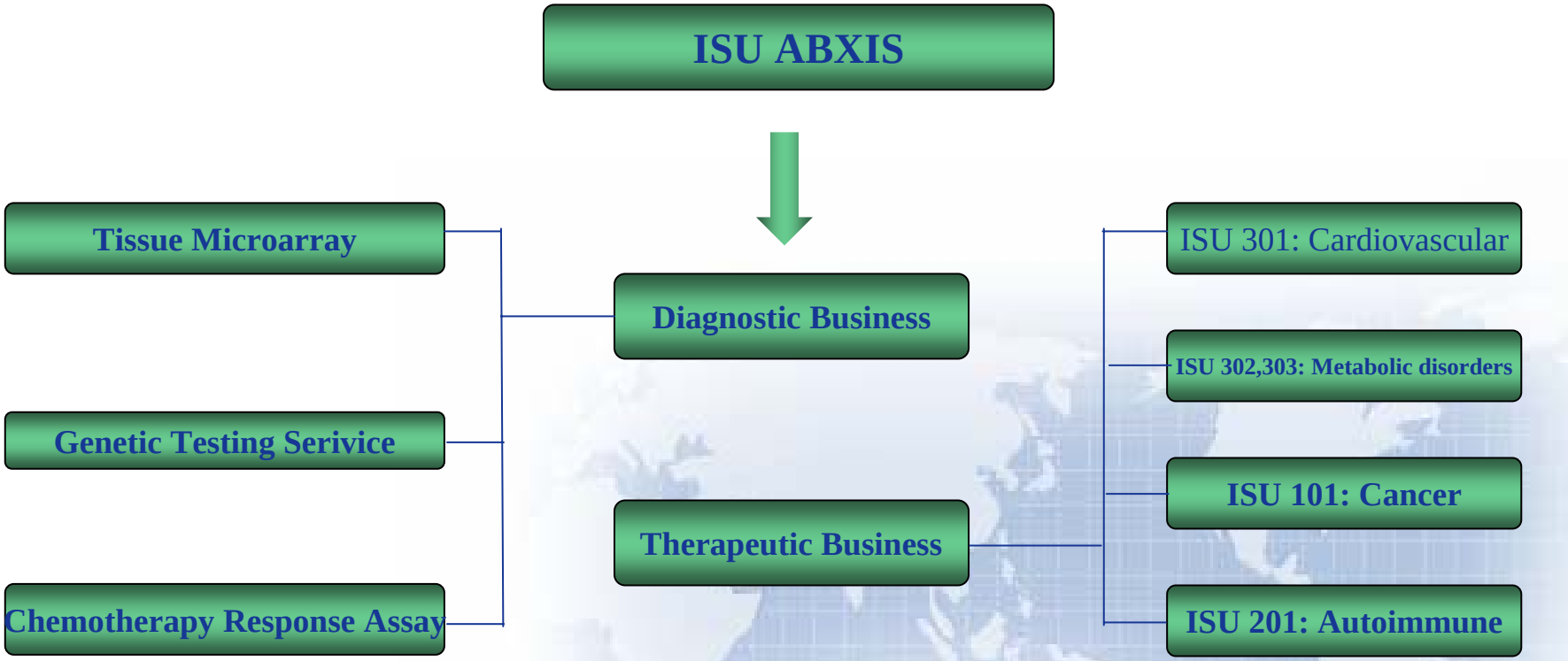
ISU Group



Total: 11 subsidiaries

Company

Portfolio



AccuMax™ Array

Products

1.Paraffin-embedded tissues

-Pre-made tissue arrays

-Custom tissue arrays

2.Frozen tissues

-Frozen sections

-Frozen tissue arrays under development

AccuMax™ Array

Products

❖ Pre-made products (46)

Pre-made	Cat #	Description
Normal tissues	A100 series	Normal tissues
Various cancers	A200	Various cancer tissues
Single cancers	A200	Breast, colon,pancreas, lung, stomach, ovary, kidney, prostate, brain
Cancers & Normal	A300	Various cancers, prostate, lung with/ corresponding normal tissues
Other disease	A400	Thyroid disease tissues
Test slides	A700	Various cancers, breast, colon, pancreas etc
Frozen sections	A900	Brain, colon,lung, ovary, stomach etc

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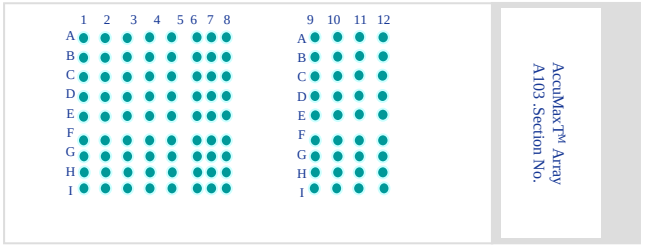
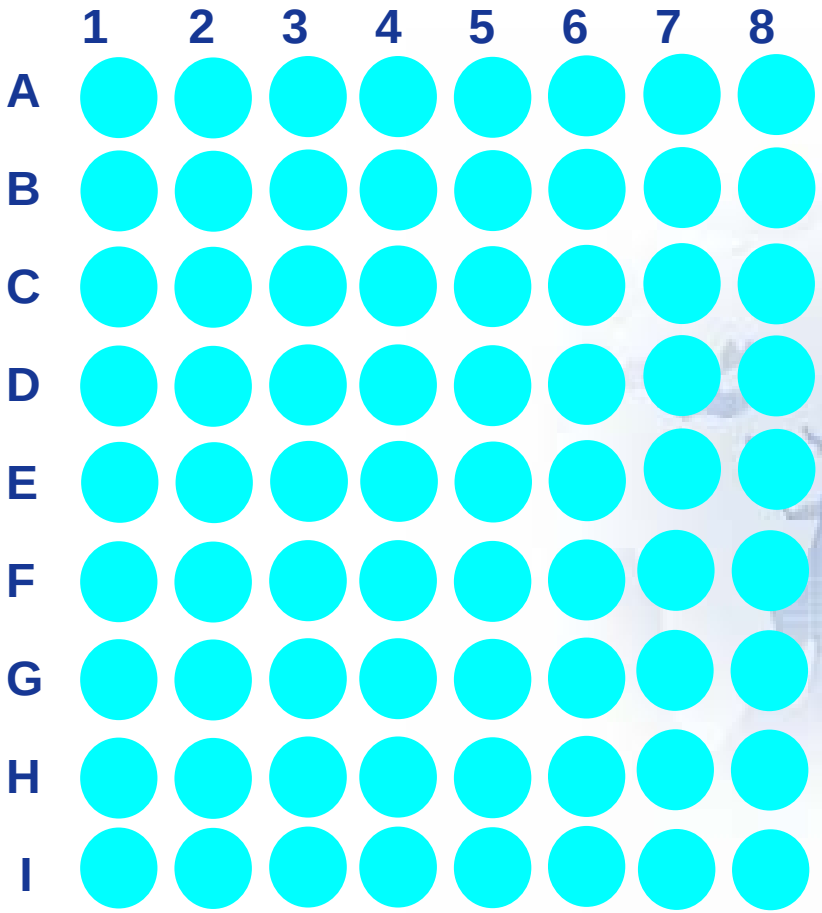
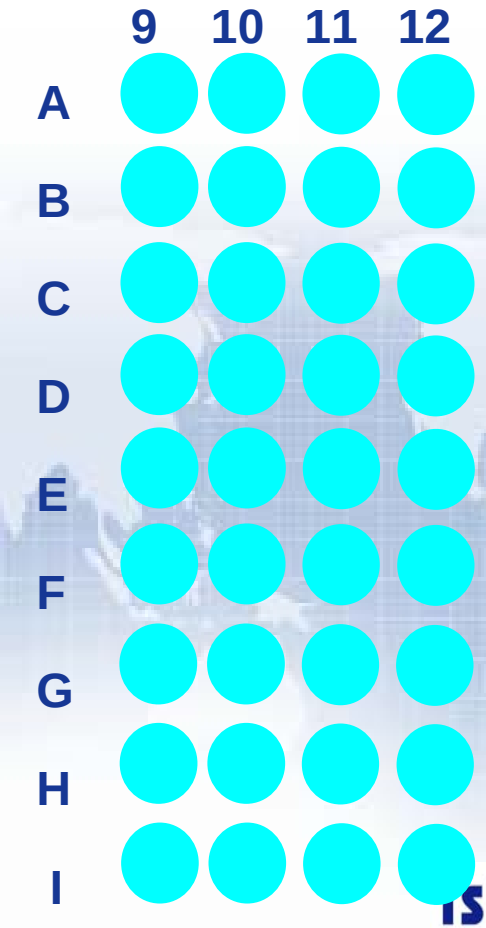
Products

Normal tissues

•formalin-fixed, paraffin-embedded 1.0mm diameter 54 different types of normal tissue cores. 2 spots for each tissue type.







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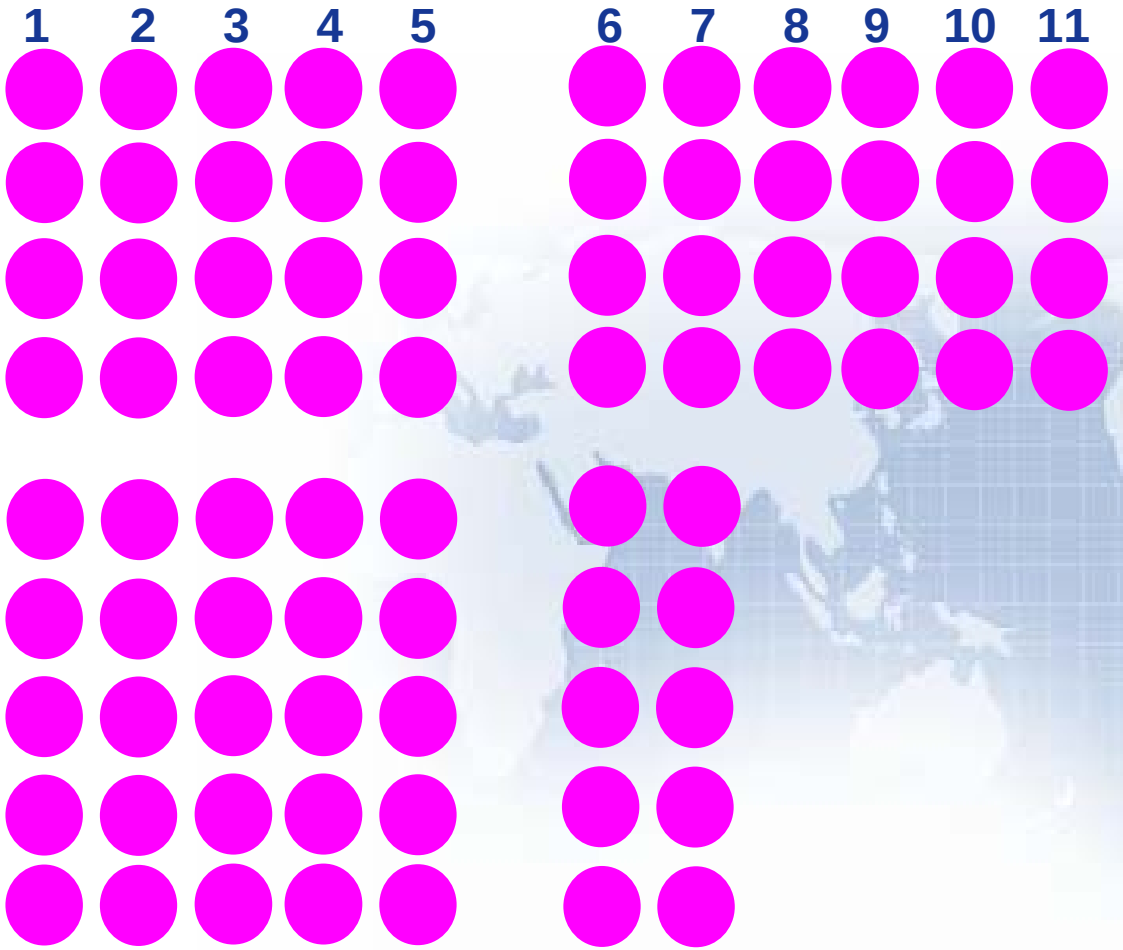
Products

Various cancers

Paraformaldehyde-fixed, paraffin-embedded 1.0mm diameter **18 different types** of cancer tissue cores. 4 spots for each tumor type.



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Products

Single cancers: prostate cancers

Formalin-fixed, paraffin-embedded 1.0mm diameter 36 different cases of **prostate tumor** tissue cores. 2 spots for each case. Non-neoplastic 6 spots were added.

	1	2	3	4	5	6	7	8	9	10	11
A	4	4	5	5	5	5	7	7	7	7	
B	6	6	6	6	6	6	7	7	8	8	
C	7	7	7	7	7	7	8	8	8	8	
D	7	7	7	7	8	8	9	9	9	9	
E	8	8	8	8	8	8	9	9	9	9	
F	8	8	9	9	9	9	9	9	10	10	
G	8	8	9	9	9	9	9	9	10	10	
H	6	6	7	7	7	7	9	9	9	9	

: non-neoplastic
: tumor, stage II
: tumor, stage III
: tumor, stage IV

* Numbers in circle are 'Gleason score'.

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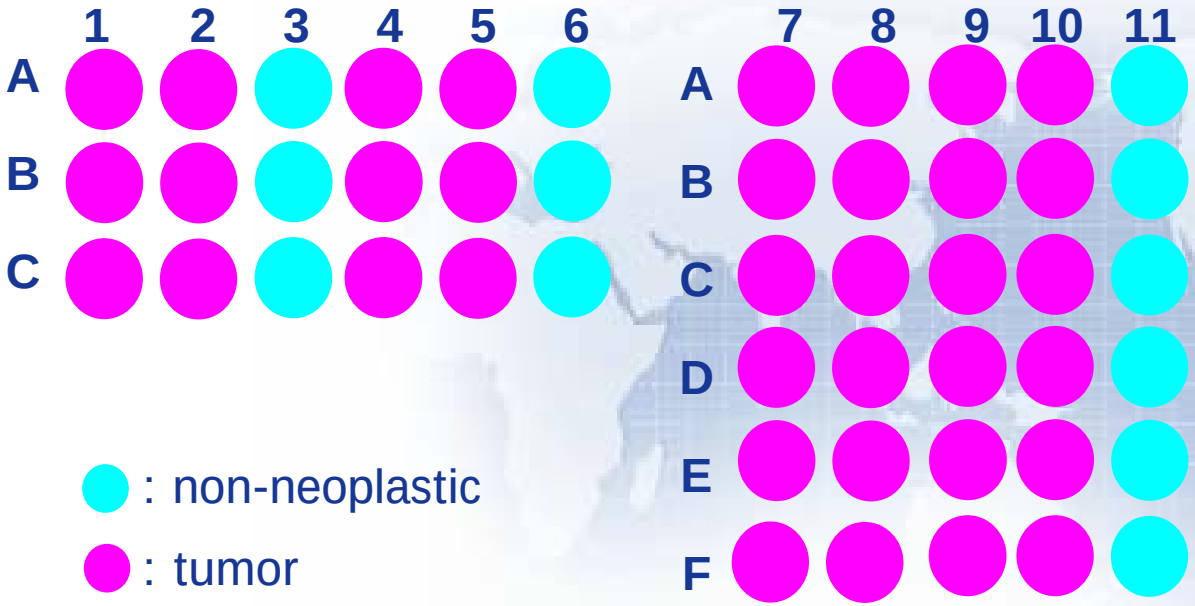
Products

Cancer + corresponding normal tissues

Paraformaldehyde-fixed, paraffin-embedded 1.0mm diameter **18 different types of cancer tissue and matching normal** tissue cores. 2 cancer and 1 normal spots for each tissue type.



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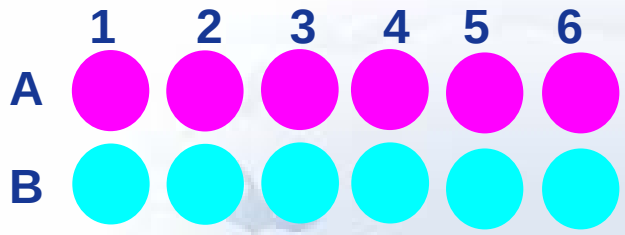
Products

Test slide

Specimen:

- Breast (colon, lung, prostate, pancreas) cancer tissues w/ corresponding normal tissues
-1spot for each cancer and normal tissue
-1.0 mm, 12 spots



● : non-neoplastic

● : tumor

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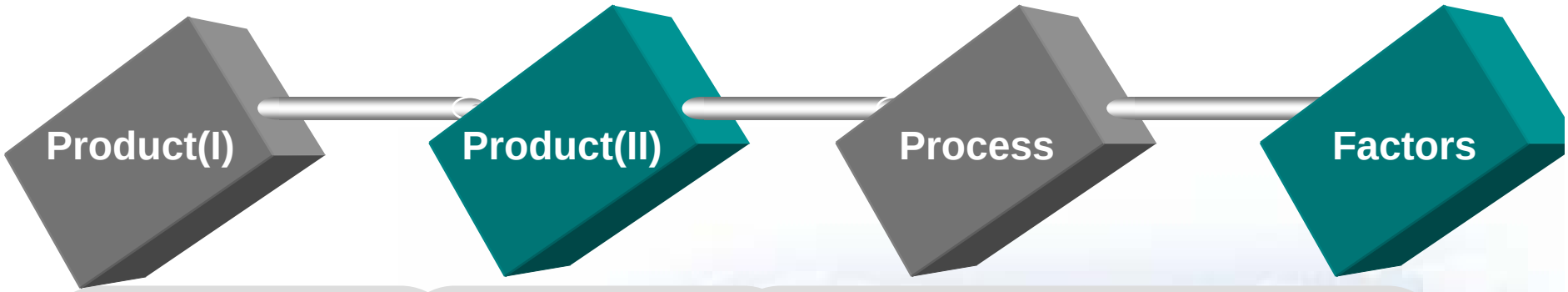
Characteristics



Product(I)	Product(II)	Process	Factors
-High-Quality -Competitive prices -Tissues well preserved (Nitrogen gas packing to prevent oxidation/ drying -Detailed information	-Wide Range of Normal Tissues and Tumors -Reader friendly layout	-Accumulated know-how -Effective slicing by microtome (w/o tape transfer method) -Semi-automated arrayer	-Relatively low regulation

AccuMax™ Array

Characteristics

Pathological Information

Sex, age,
Histological diagnosis (pathology), surgery, grade, stage,
other laboratory diagnostic data,medicine,treatment (if available)

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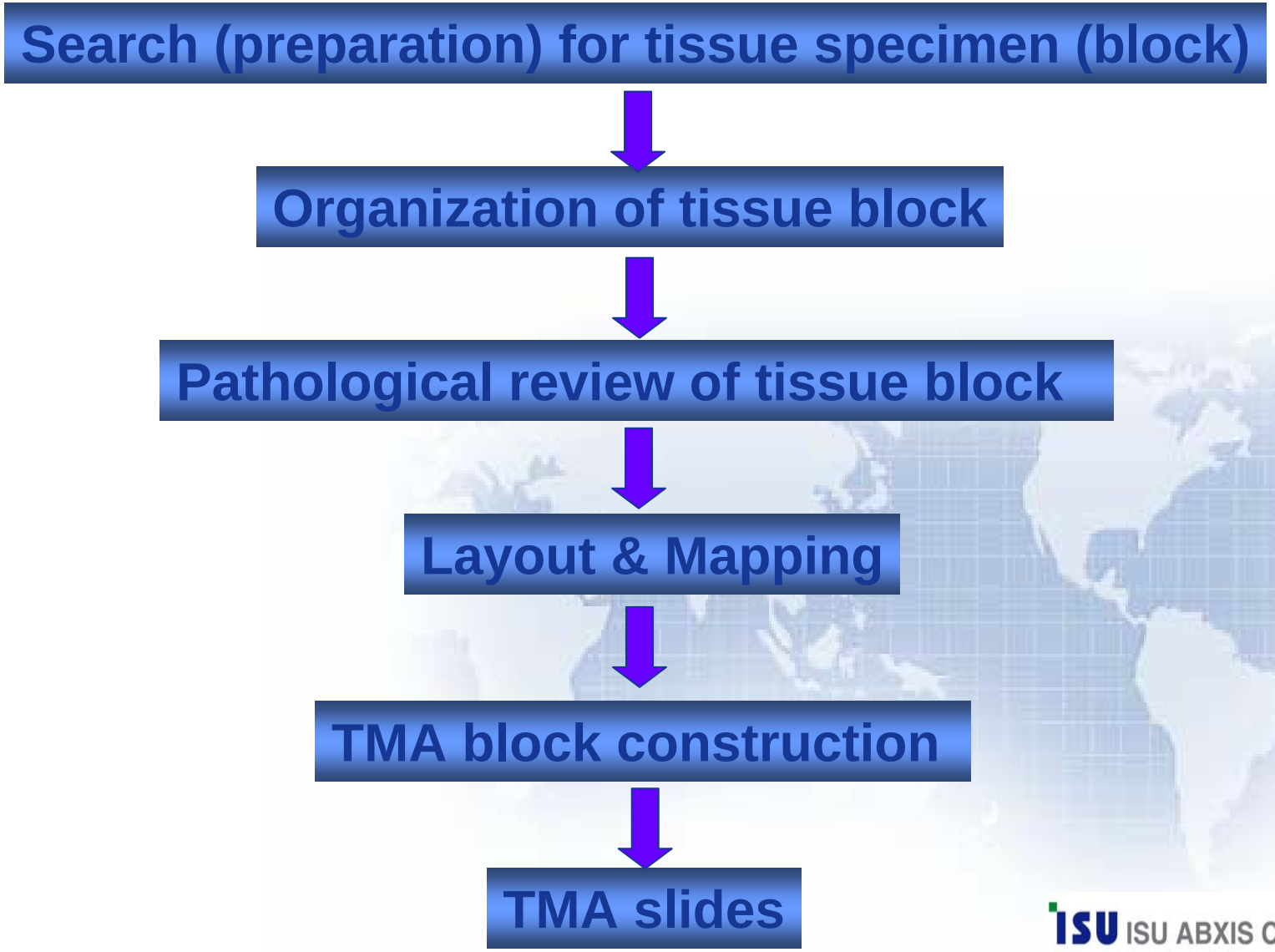
A202 : Breast cancer tissues

Coordinate	Sex	Age	Keyword	Histological diagnosis	Surgery	HG	NG	stage	Immunohistochemical stain results:
A1&2	f	61	breast : infiltrating ductal carcinoma	Breast, right, modified radical mastectomy: Infiltrating ductal carcinoma 1. Black's nuclear grade 3 (well differentiated). 2. modified Bloom-Richardson's histological grade I (tubule formation: 1, nuclear pleomorphism: 1, mitosis:1). 3. with features of cribriform carcinoma. 4. intraductal component: <10%. 5. frequent perineural invasion. 6. no lymphatic permeation. Nipple and areola: Free of tumor. Overlying skin: Free of tumor. Underlying fascia: Free of tumor. Regional lymph node, axillar(0/18), level II(0/6), level III (0/0): (0/24): Free of tumor.	radical mastectomy	1	3	T2N0M0	ER, PR: + C erb B2:-
A3&A4	f	46	breast : infiltrating ductal carcinoma	Breast, right, lumpectomy: 1. Infiltrating ductal carcinoma, nuclear grade 2, Histologic grade I with minimal intraductal component (less than 5%). 2. Intraductal papillomatosis. Resection margins, superior, inferior and lateral: Free of tumor. Resection margins, labelled as "new margin(medial)": 1. Free of carcinoma. 2. Focal presence of atypical ductal hyperplasia in superomedial side.	lumpectomy	1	2	T1cN0M0	ER, PR: + C erb B2: -
A5&6	f	61	breast : infiltrating ductal	Breast, left, frozen excision: Infiltrating ductal carcinoma, nuclear grade 2, Histologic grade I with intraductal component, 10%.	excision	1	2	T1cN0M0	ER, PR: + C erb B2:-

AccuMax™ Array

Production Process



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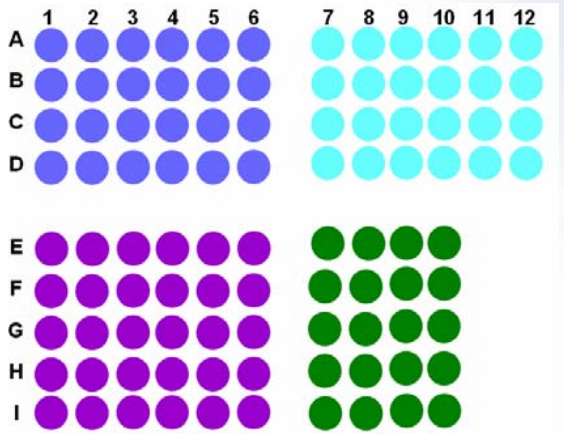
Production Process

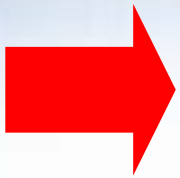
Layout & Mapping

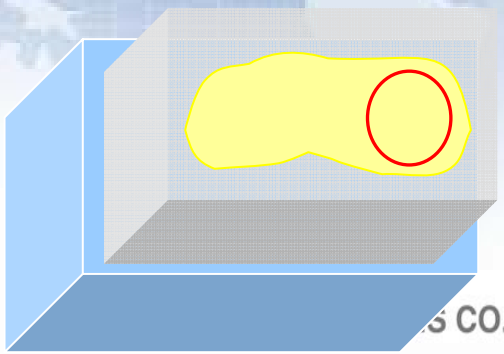
Microsoft Excel - germcelltumor1_list.xls

A99 01S-33574-3

	A	B	C	D	E	F	G
1	Tissue ID	Diagnosis	Normal(N)	Tumor(T)	Ratio	RNA Conc.	
2	00S-6628	seminoma	Normal(N)		1.55	0.487	
3	00S-6628A1	seminoma		Tumor(T)	1.6	0.512	
4	02S-1970-MG2	seminoma	Normal(N)				
5	02S-1970-2	seminoma		Tumor(T)	1.4	0.325	
6	01S-32471-A/C	dysgerminoma	Normal(N)				
7	01S-32471-A1	dysgerminoma		Tumor(T)			
8	02S-8899-F1	seminoma	Normal(N)		1.55	0.925	
9	02S-8899-A2	seminoma		Tumor(T)			
10	02S-4925-C	seminoma	Normal(N)		1.6	1.375	
11	02S-4925-A2	seminoma		Tumor(T)			
12	01S-32471-C	dysgerminoma	Normal(N)				
13	01S-32471-A3	dysgerminoma		Tumor(T)			
14	97S-27117B1	dysgerminoma	Normal(N)		1.6	0.312	
15	97S-27117A1	dysgerminoma		Tumor(T)			
16	01S-32471-B2	IT	Normal(N)				
17	01S-32471-A7	IT		Tumor(T)			
18	01S-6840D	IT	Normal(N)				
19	01S-6840A5	IT		Tumor(T)			
20							
21	RT-PCR results: cannot see Wip1 and beta-globin products(RNA prepared by Ambion kit)						
22	thraw away the RT products and keep the RNA at -65`C						
23	another possibility: only do PCR 30 cycles. Should do more than 32 cycles						
24	Decided to extract again with MP lab protocols and PCR 35 cycles						

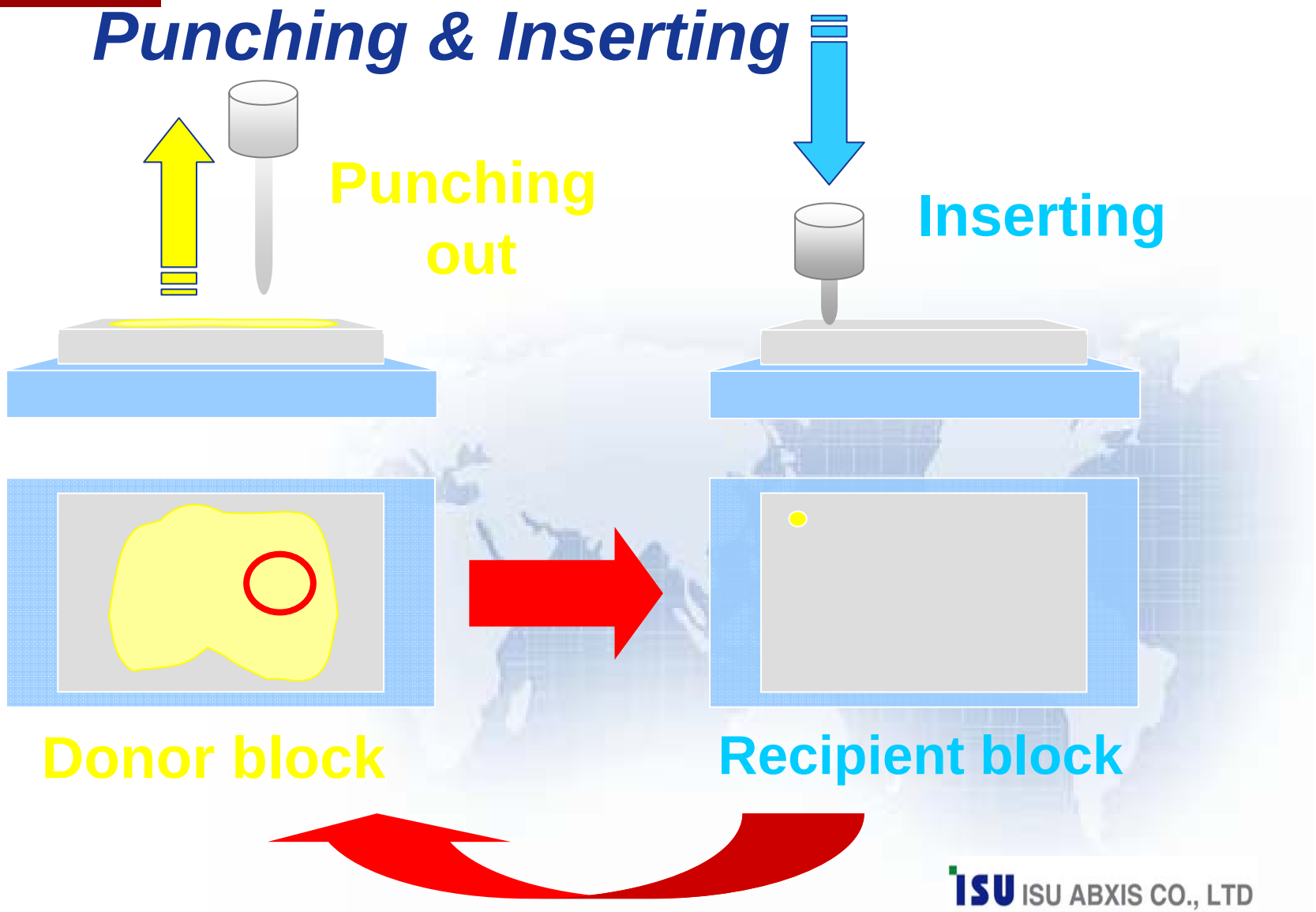






AccuMax™ Array

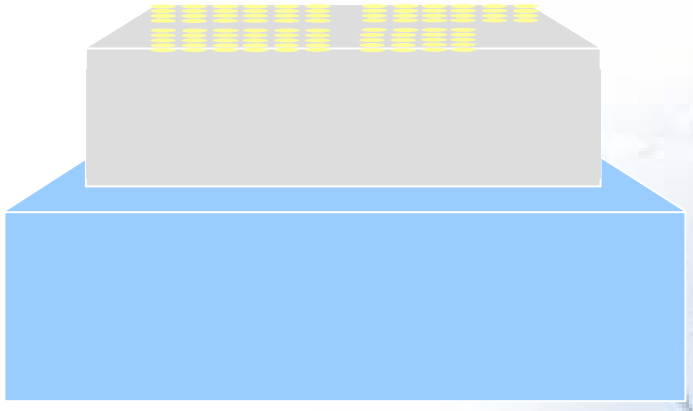
Production Process

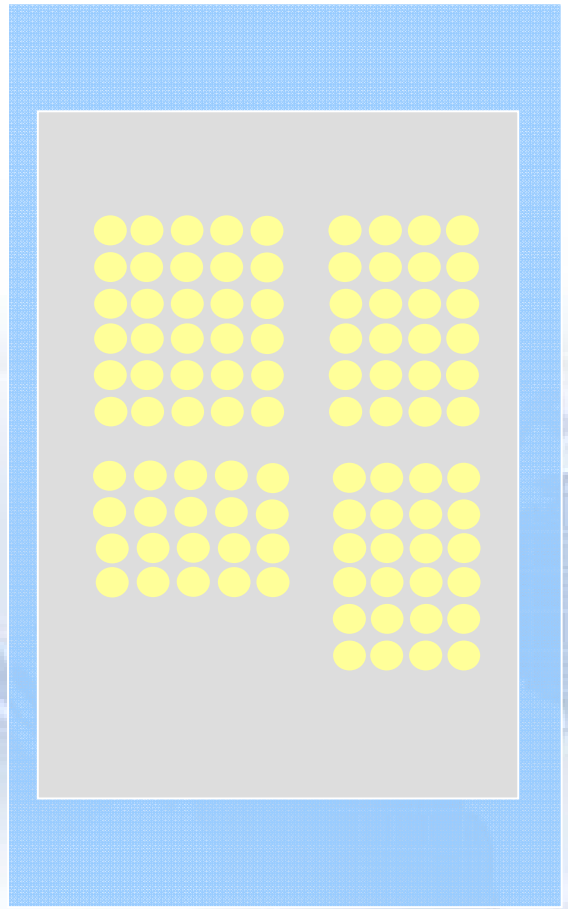


AccuMax™ Array

Production Process

TMA Block





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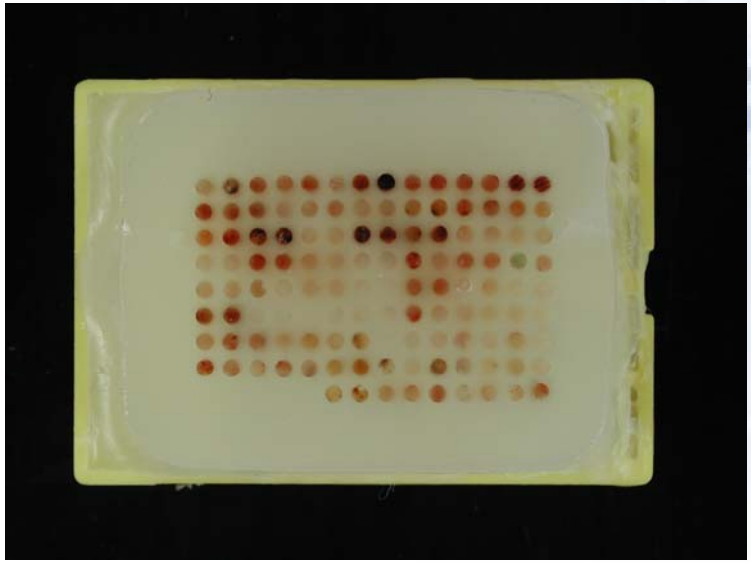
AccuMax™ Array

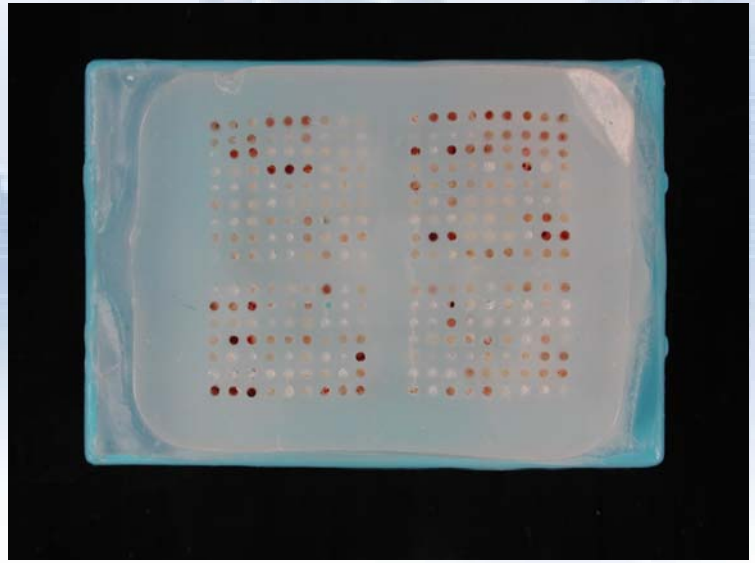
Production Process

- **Well Defined Layout**
  - **Interval between Adjacent Tissue Cores Can Be Precisely Controlled**
- **Short Time to Make : less than 2 hr for 121-cores TMA Block**

1.0 mm TMA Block
Diameter : 1.0 mm
No. of Cores : 121



0.6 mm TMA Block
Diameter : 0.6 mm
No. of Cores : 288



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AccuMax™ Array

Production Process

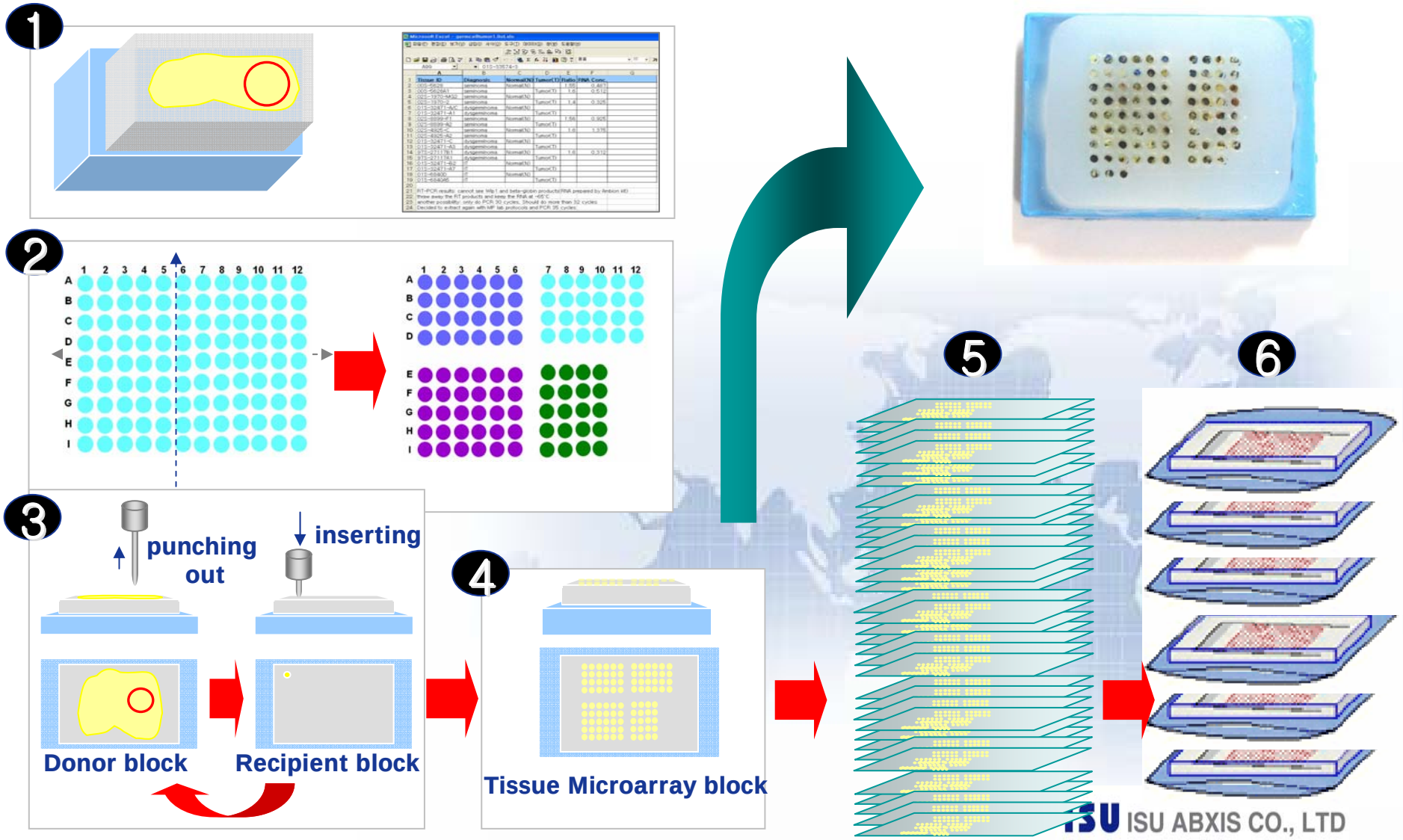
Individual packing

1.Specially designed packing materials: a hard plastic box and an opaque bag

2.Packing under nitrogen atmosphere to prevent oxidation and drying

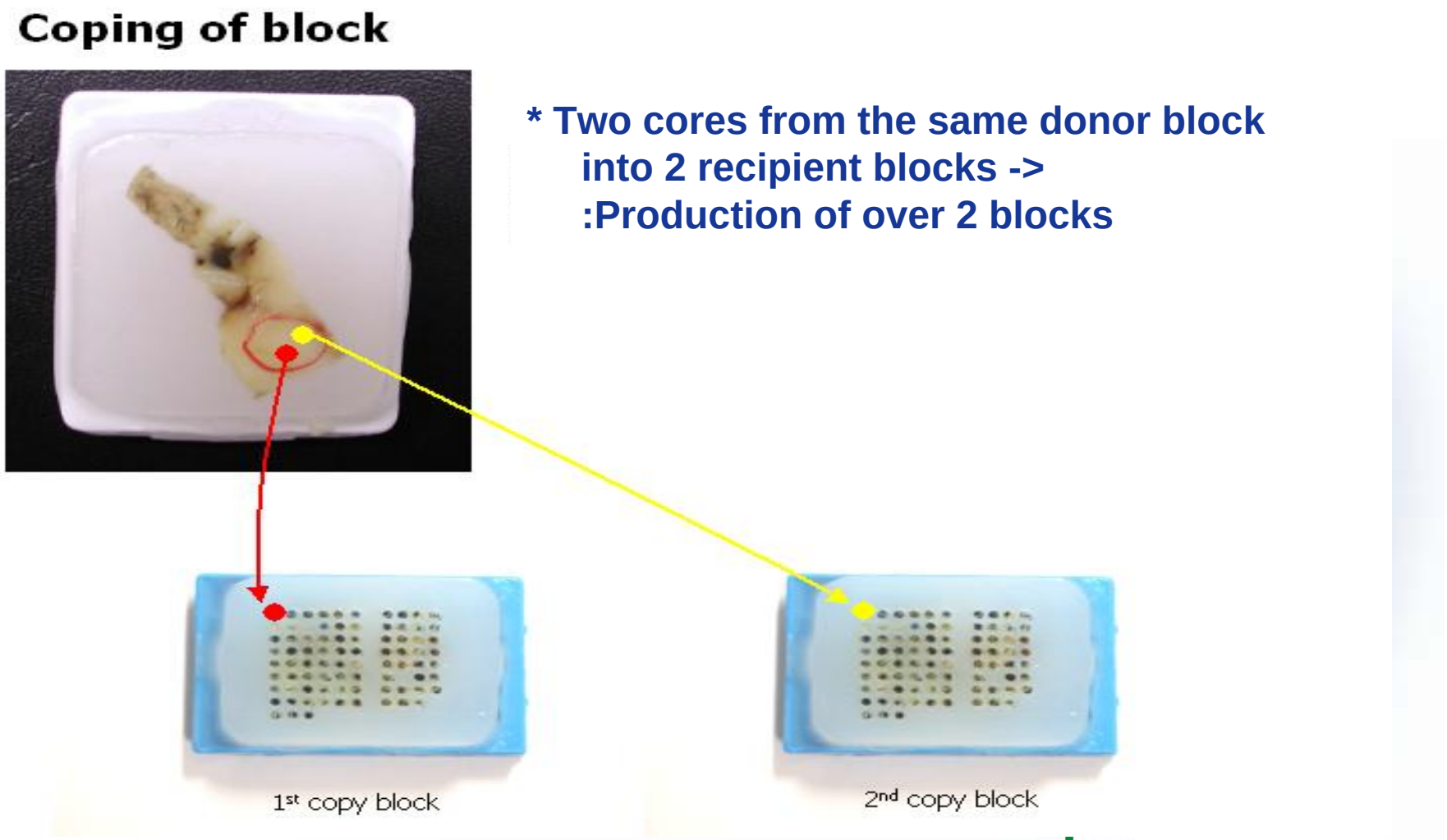
AccuMax™ Array

Production Process



AccuMax™ Array

Production Process



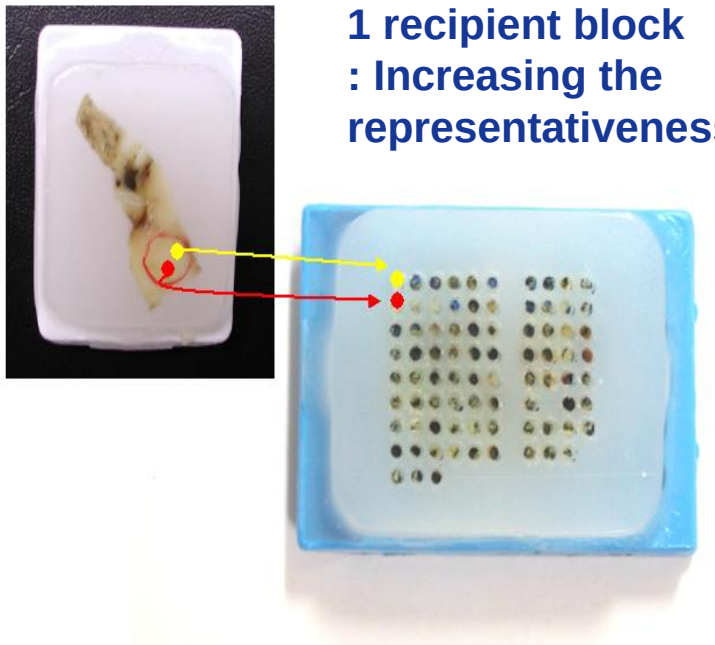
*** Two cores from the same donor block into 2 recipient blocks ->**
:Production of over 2 blocks

AccuMax™ Array

Production Process

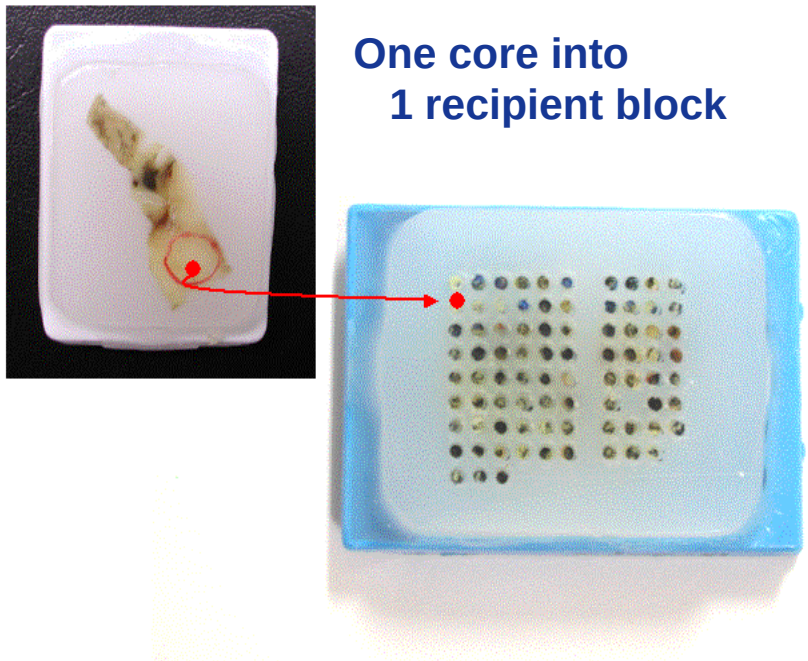
Duplicated cores

Two cores into
1 recipient block
: Increasing the
representativeness



Single cores

One core into
1 recipient block



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AccuMax™ Array

References

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Different gene expression profiles between microsatellite instability-high and microsatellite stable colorectal carcinomas
Oncogene. *2004 Aug 19;23(37):6218-25.*

2.Min-Hyuk Yoo et al
Role of the BLT2, a leukotriene B_4 receptor, in Ras transformation
Oncogene *2004 Dec 9;23(57):9259-68*

3. M Onda et al
Decreased expression of haemoblogin beta (HBB) gene in anaplastic thyroid cancer and recovery of its expression inhibits cell growth
British Journal of Cancer*, (2005) 92 2216 ~ 2224*

4. Ping Zhu et al
Macrophage/Cancer Cell Interactions mediate Hormone Resistance by a Nuclear Receptor Derepression Pathway
Cell *2005.12*

5. Keisuke Tanicuhi
Overexpressed P-Cadherin CDH3 Promotes Motility of Pancreatic cancer cells by interacting with P120 ctn and activating Rho-Family GTPases
Molecular Biology *2005.4*

6. Others including **Clinic Cancer Research, Cancer cell, Cell Death and Differentiation etc.**

ISU ABXIS ON THE MARKET

Customer Feedbacks(I)

Customer	Feedbacks
Arizona Cancer Ctr.	- satisfied with **pathological Info**. etc
MD Anderson Ca. Ctr.	- results very good - planning to **release paper**
NIH	- quality **much better than others**
A&G Pharma.	- **tissues well preserved** - quality really good
ARIUS Research	- Looks good
Astrazeneca	- tissue preservation good - staining good, various types of tumor useful
Garden Ca. Ctr.	- Very satisfied

ISU ABXIS ON THE MARKET

Customer Feedbacks(II)

"I would like to try test slides A712 and A718. I already placed the order yesterday for 8 different arrays, some were in duplicates. I liked my previous results with your lung and multi-tissue Ca arrays. The quality was very good. I can tell this based on my extensive experience with other companies. You do an excellent job."
Svetlana Pack, Ph.D., LIP/NIAID/NIH

"I found the TMAs to be well preserved, good morphology, good variety of tumor types, adequate tissue in each sample, and they stained well for immunohistochemistry. I think such arrays would work great for first pass screening." **Pharmaceutical Company**

"I wanted to let you know that we have used the various tissue arrays and were very much impressed by the quality of tissue preparation and preservation. We are having an outside pathologist look also at the staining in more detail to evaluate tissue quality but it looks really great. We will proceed with the pancreatic array with some candidate antibody and we are definitely interested in using further your services and business as we are developing new target and antibody in the near future." **Ginette Serrero, Ph.D. from A&G Pharmaceutical, Inc.**

"In comparison to the arrays we have produced ourselves or received from collaborators, the ones we got from ABXIS were of superior quality. Before a lot of tissue cores detached during the processing or the morphology was compromised. Not so with the one we received from you. It had outstanding tissue morphology and the information on each sample found on the accompanying CD was exceeding my expectations. In addition, it is helpful for analysis to have more than one core of each sample. After sectioning a few slides from our in-house arrays most tissues were not available due to different core thickness, so yours provides much better consistency and we have already ordered more of the esophageal array we tested. Thank you for providing such outstanding service." **Claudia Andl, Ph.D. From University of Pennsylvania**

ISU ABXIS ON THE MARKET

Customers

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

biogen idec

Genencor International

OHIO STATE
THE OHIO STATE UNIVERSITY COLLEGES AND SCHOOLS

WAYNE STATE UNIVERSITY

Genentech
IN BUSINESS FOR LIFE

SeattleGenetics

sanofi aventis
Because health matters

HARVARD MEDICAL SCHOOL

NOVARTIS

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Thank You !