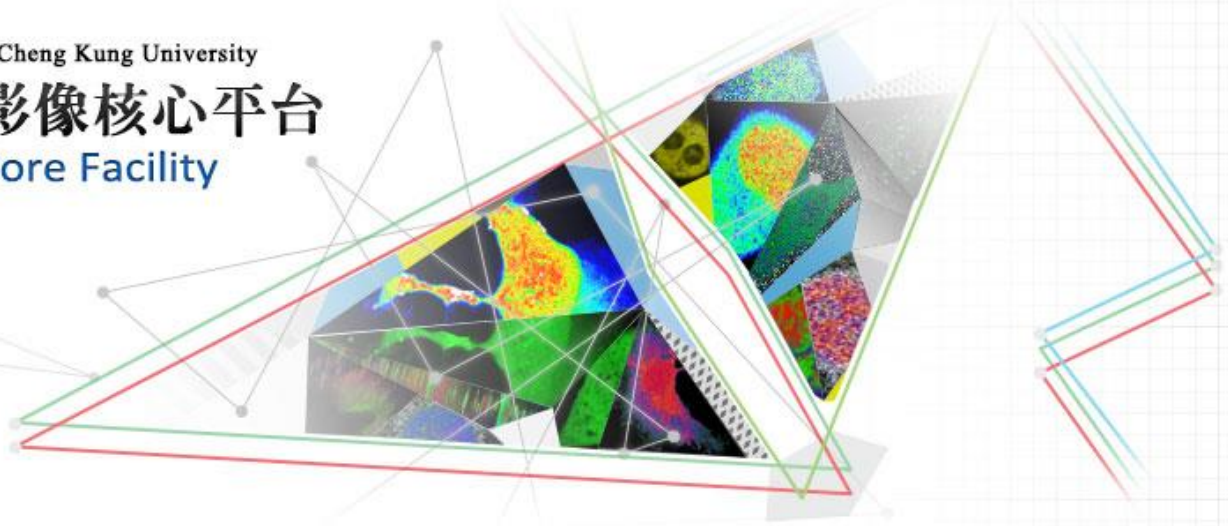
NCFB 生技醫藥核心設施平台
National Core Facility for Biopharmaceuticals

成功大學 National Cheng Kung University

生醫光學影像核心平台

Bioimaging Core Facility



全景組織體細胞定量分析儀

技術員：蕭雅純 小姐

06-2353535#3115

n953438@mail.hosp.ncku.edu.tw

➢TissueGnostics FACS-like Tissue Cytometry

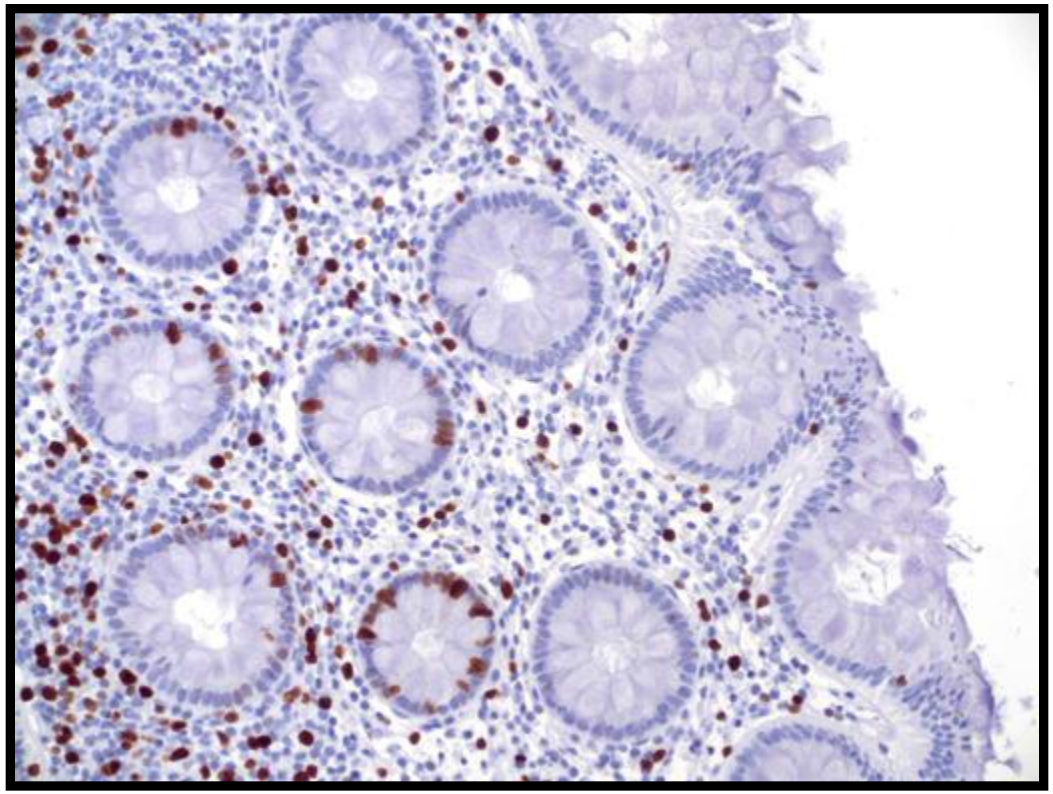
➢全景組織體細胞定量分析儀

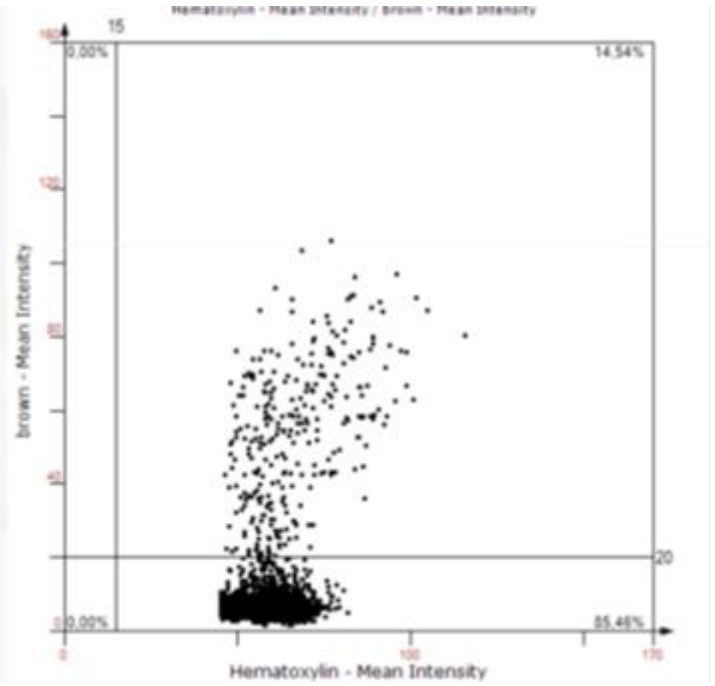
可將切片組織數位化並進行量化與分析統計的系統

Why from image to analysis?

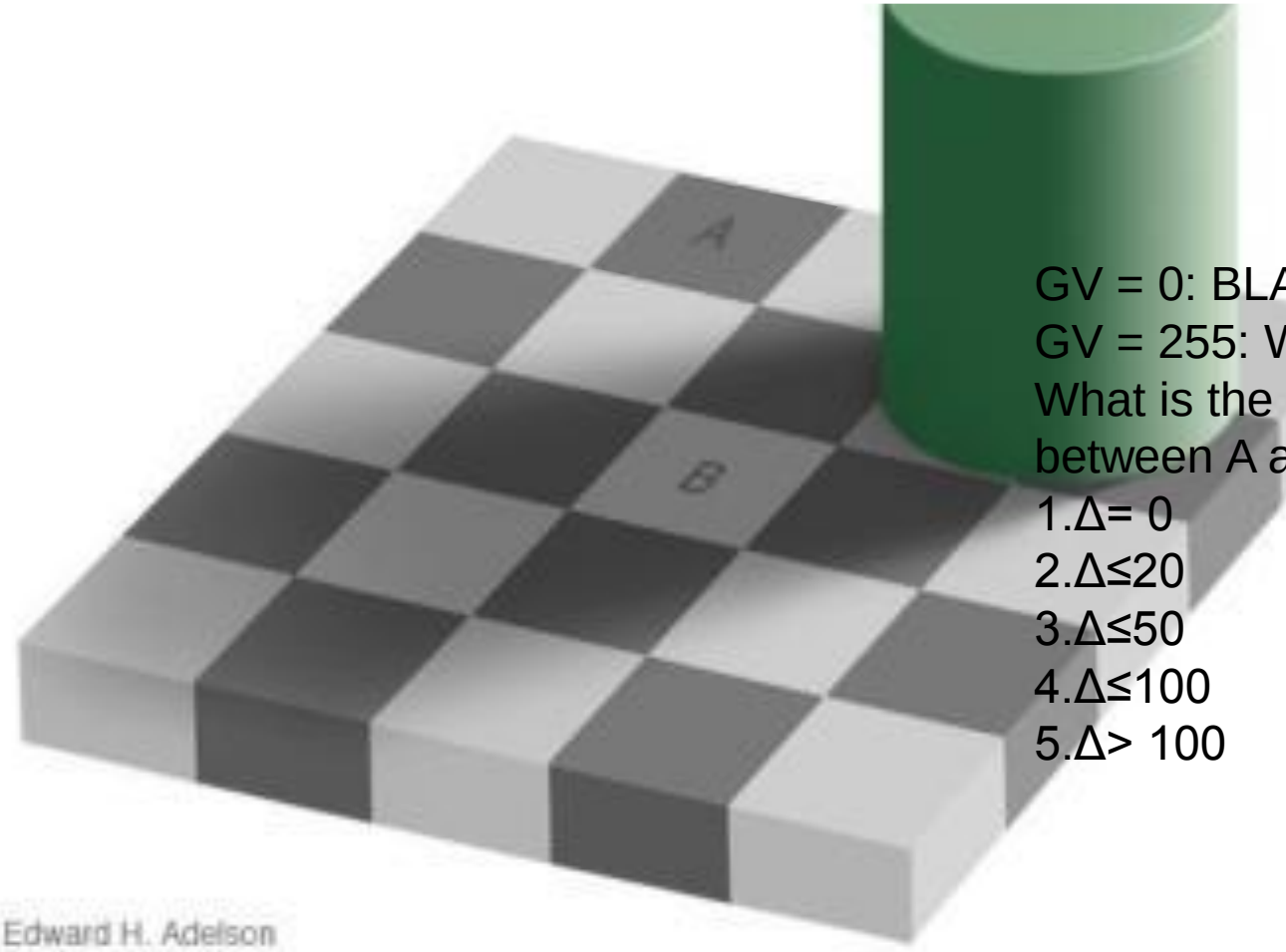
How many of the blue nuclei are also stained in brown (in %)?
Expert‘s estimations:
1% - 35% (n=40)

Observer independent measurement: 14.54%





Estimation versus Measurement



Edward H. Adelson

GV = 0: BLACK

GV = 255: WHITE

What is the difference in GV between A and B?

1. $\Delta = 0$
2. $\Delta \leq 20$
3. $\Delta \leq 50$
4. $\Delta \leq 100$
5. $\Delta > 100$

Major Components of TissueGnostics system

Requirement of Tissomics

- Digitalized slide image
- Analyzed slide image
- Quantified slide image

Export visualized data

Rapid preview

Automated acquisition at freely selectable magnifications

Tunable autofocus for up to 100x oil objectives

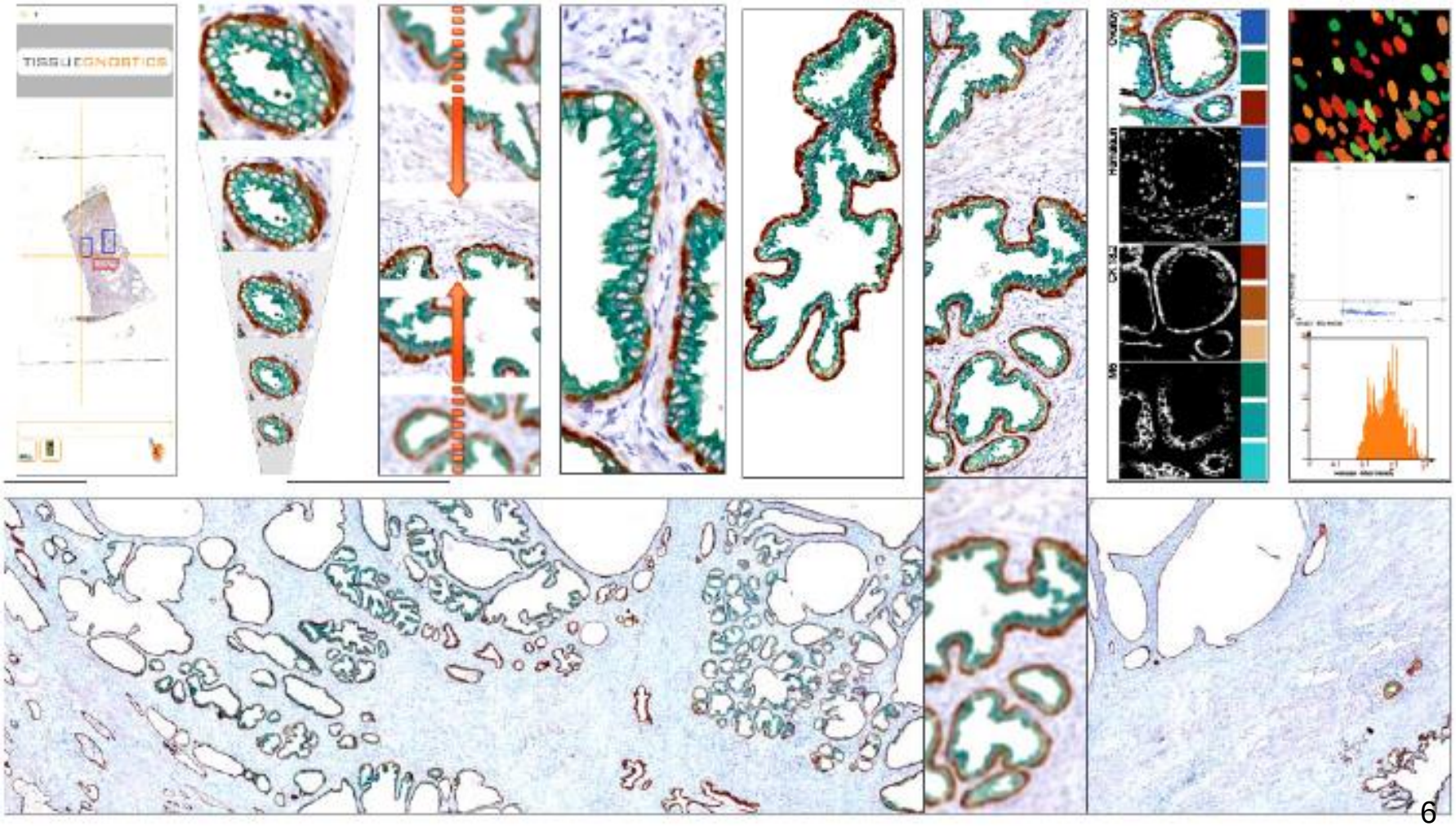
Automatic stitching function and exportable sample overview

Subregion creation and export for analysis

Reacquisition of single out-of-focus images

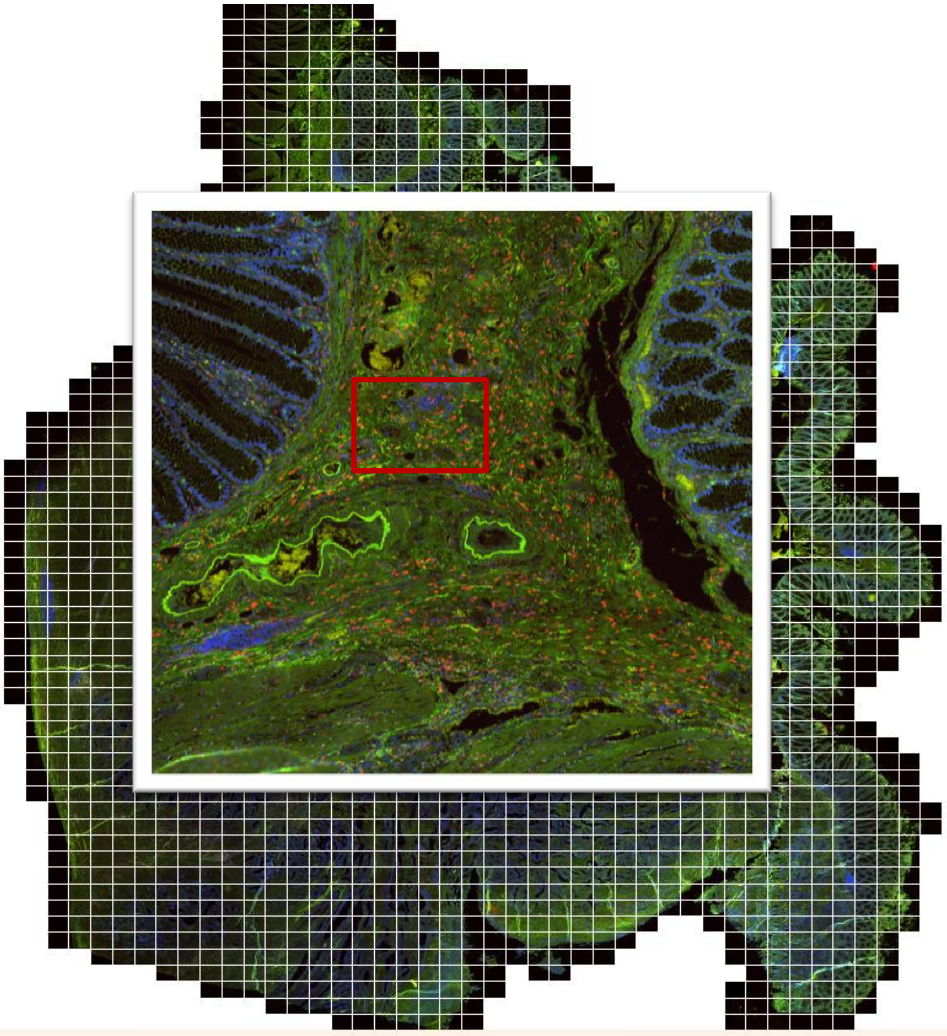
HistoQuest color separation

HistoQuest analysis of staining intensity



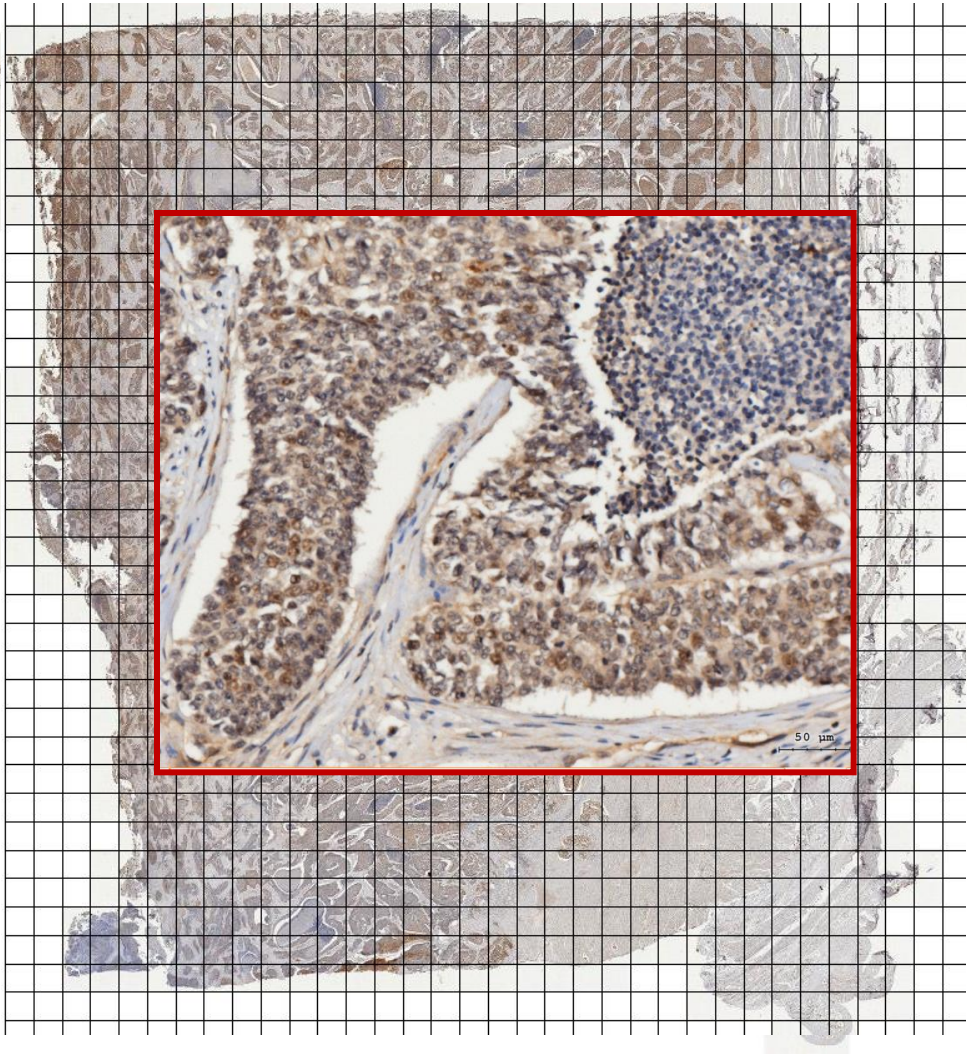
Nikon
Plan Apo
4X/0.20
WD

Virtual Slide



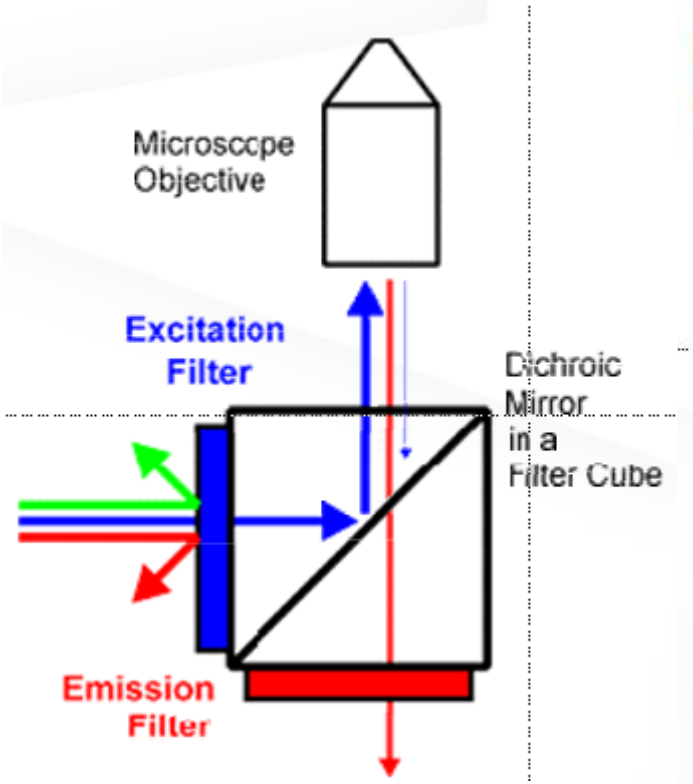
Virtual Slide

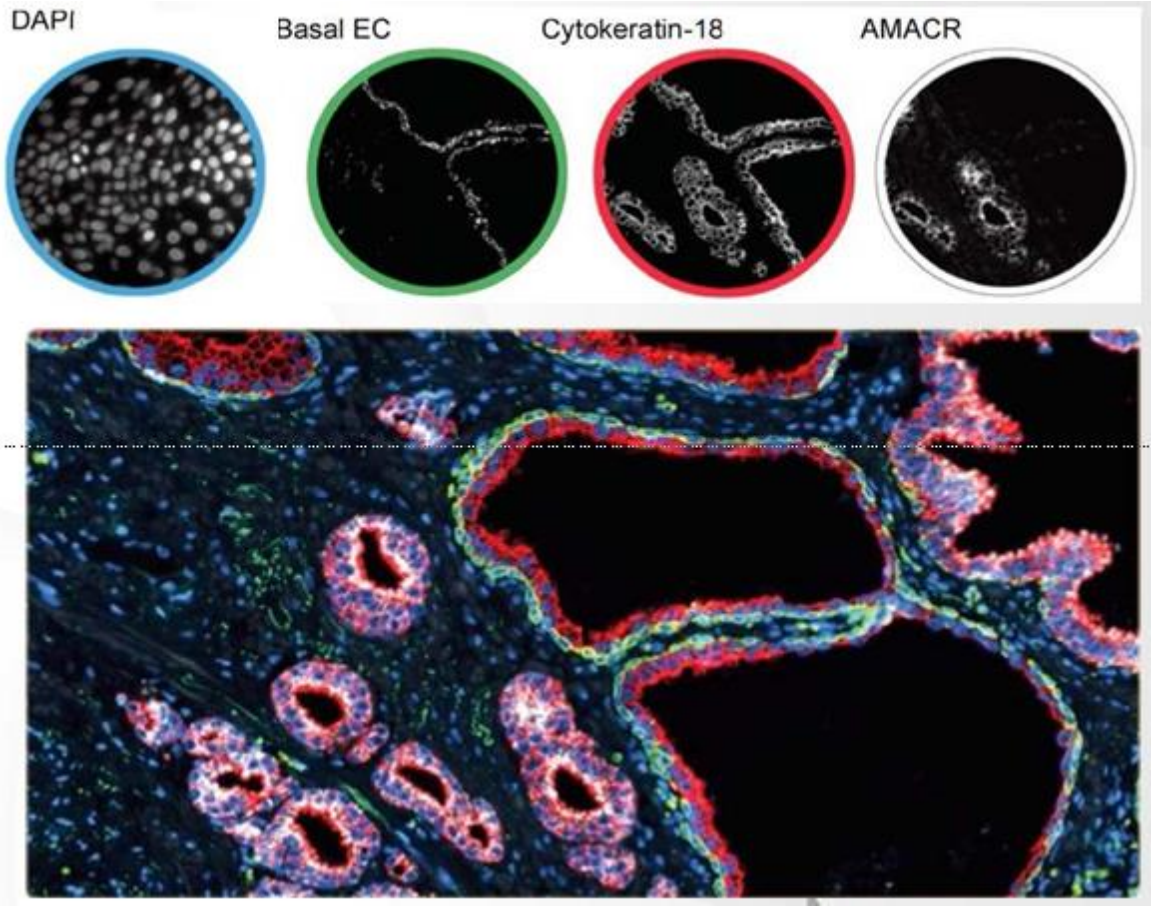
Navigate through the *digital sample and zoom between overview and high* resolution whereever you need to!



Color separation

Fluorescence Separation
Filter system to separate florescence channel

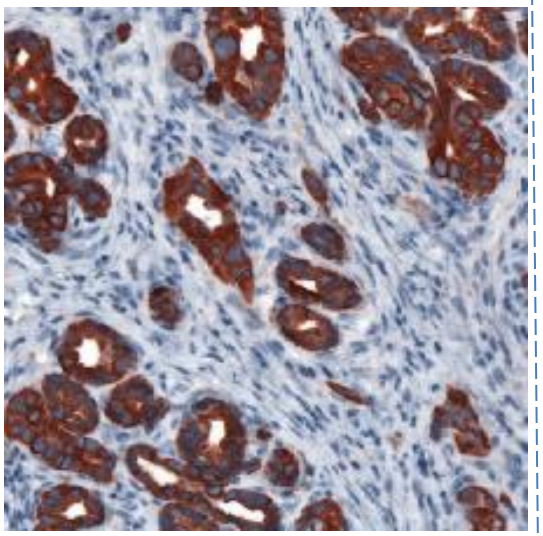


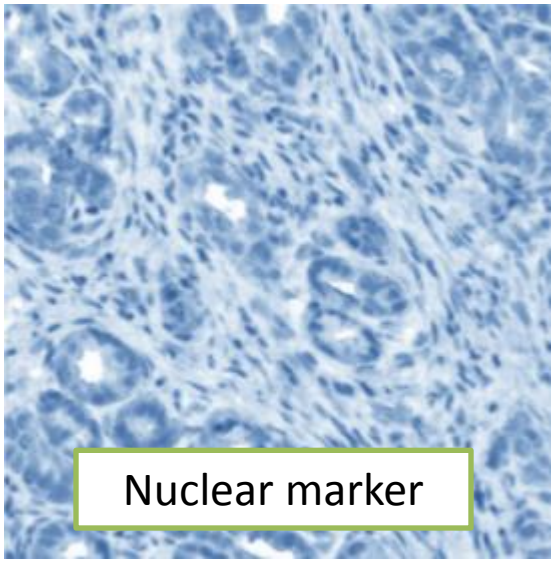


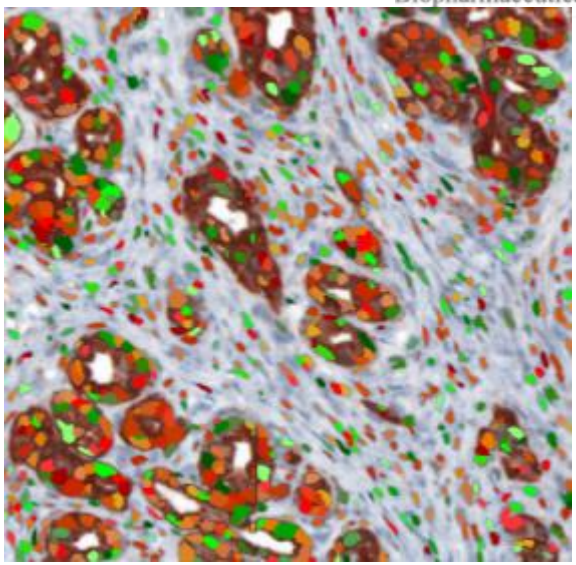
Original

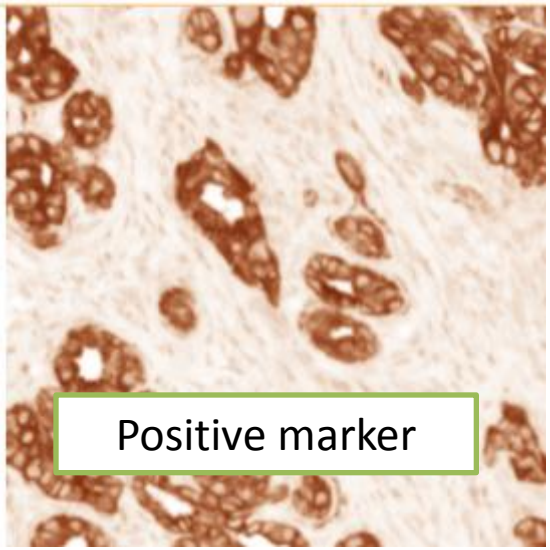
Color separation

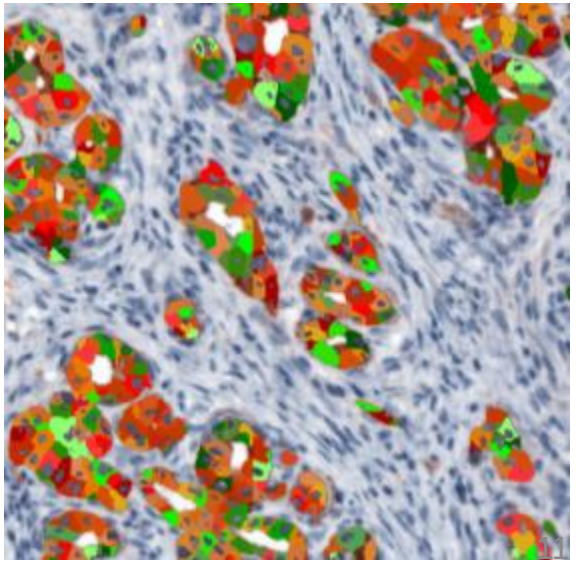
Cell detention





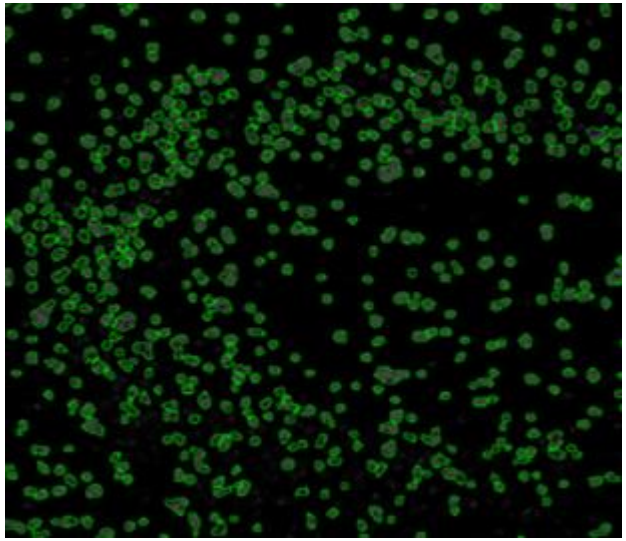




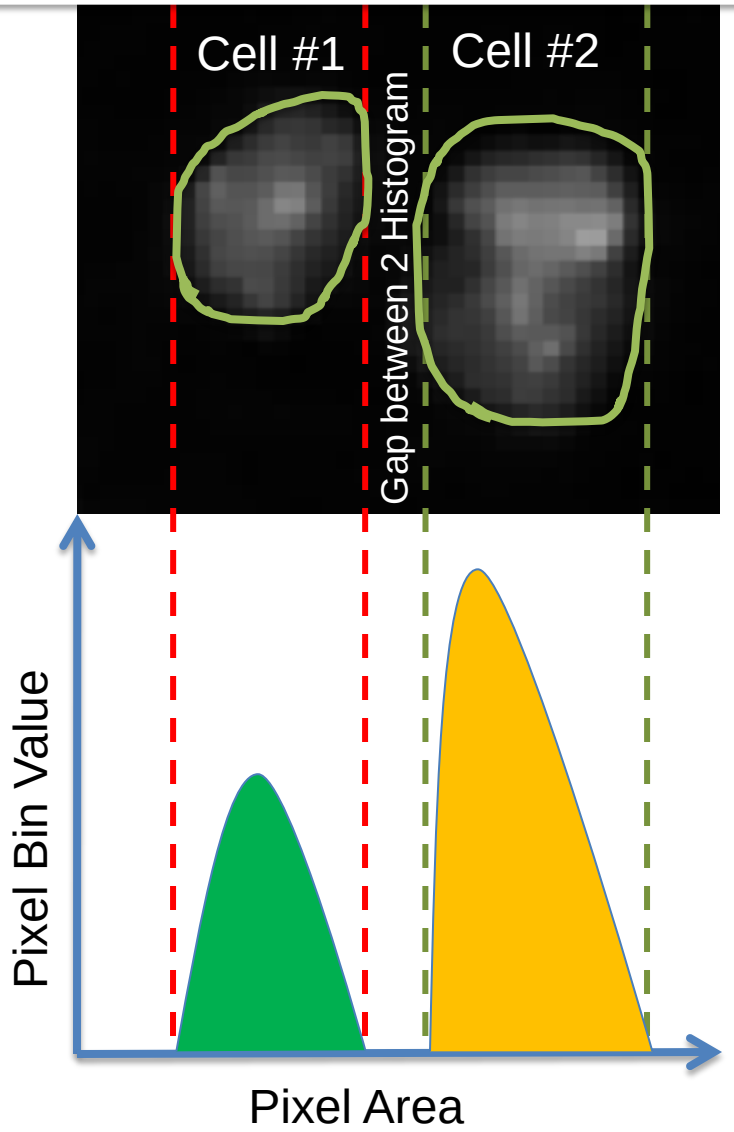


核心設施平台
ore Facility for
Biopharmaceuticals

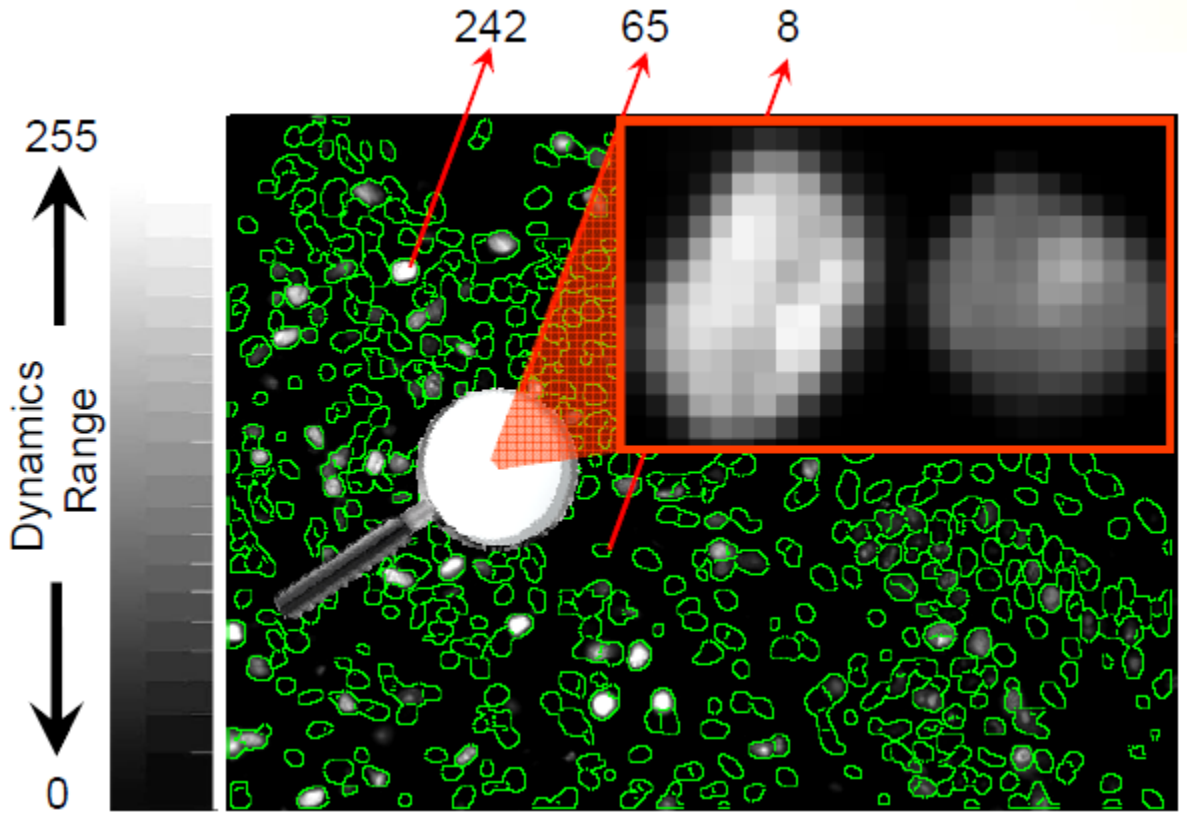
Cell Identification

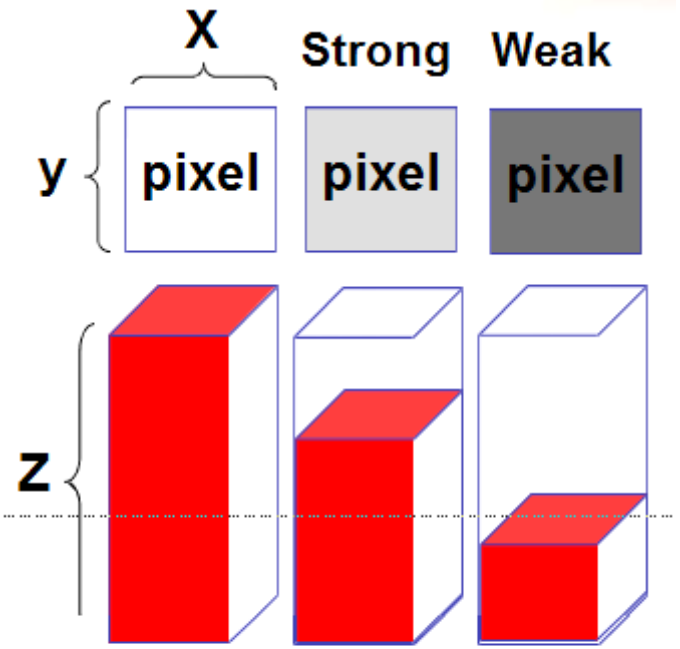


Nuclear channel , which also called “Master channel ” , is used to pick up each single cell in your tissue , after identification , you got total cell number of your sample



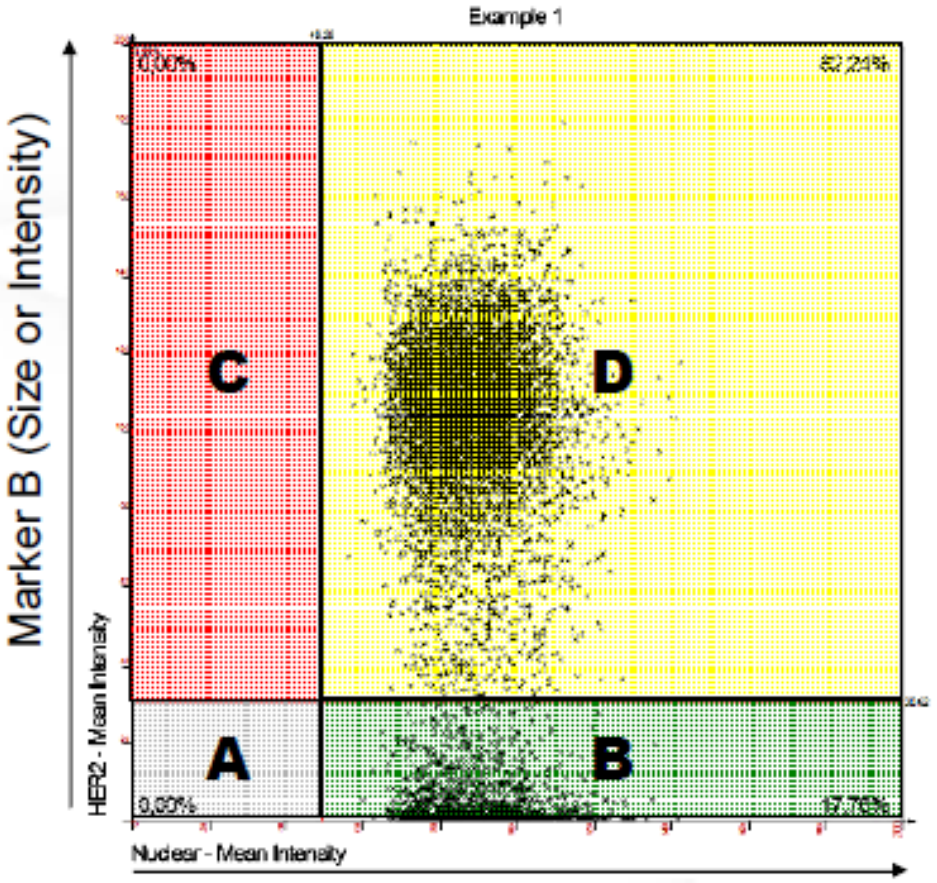
Intensity measure





X*Y= each pixel area
Z= pixel intensity
N= number of pixel in mask

Statistic



Multiple statistic information

- Total cell number in your tissue
- Cell number in each population
- Total area of your tissue
- % of Specific stained cell area cover
- % of each population in total cell
- Mean intensity of each population
- Mean size of each population

	Quadr...	Nuclea...	HER2 ...	Count	Percent	No./mm2
>	UL	0,000	0,000	0	0,00%	0,000
	UR	88,205	104,266	6647	82,24%	166175,...
	LL	0,000	0,000	0	0,00%	0,000
	LR	90,206	5,414	1435	17,76%	35875,000
	Overall	88,561	86,714	8082	100,00%	202050,...

A=Negative
B=Marker A single positive
C=Marker B single positive
D=Marker A&B double postive

Paper published progress

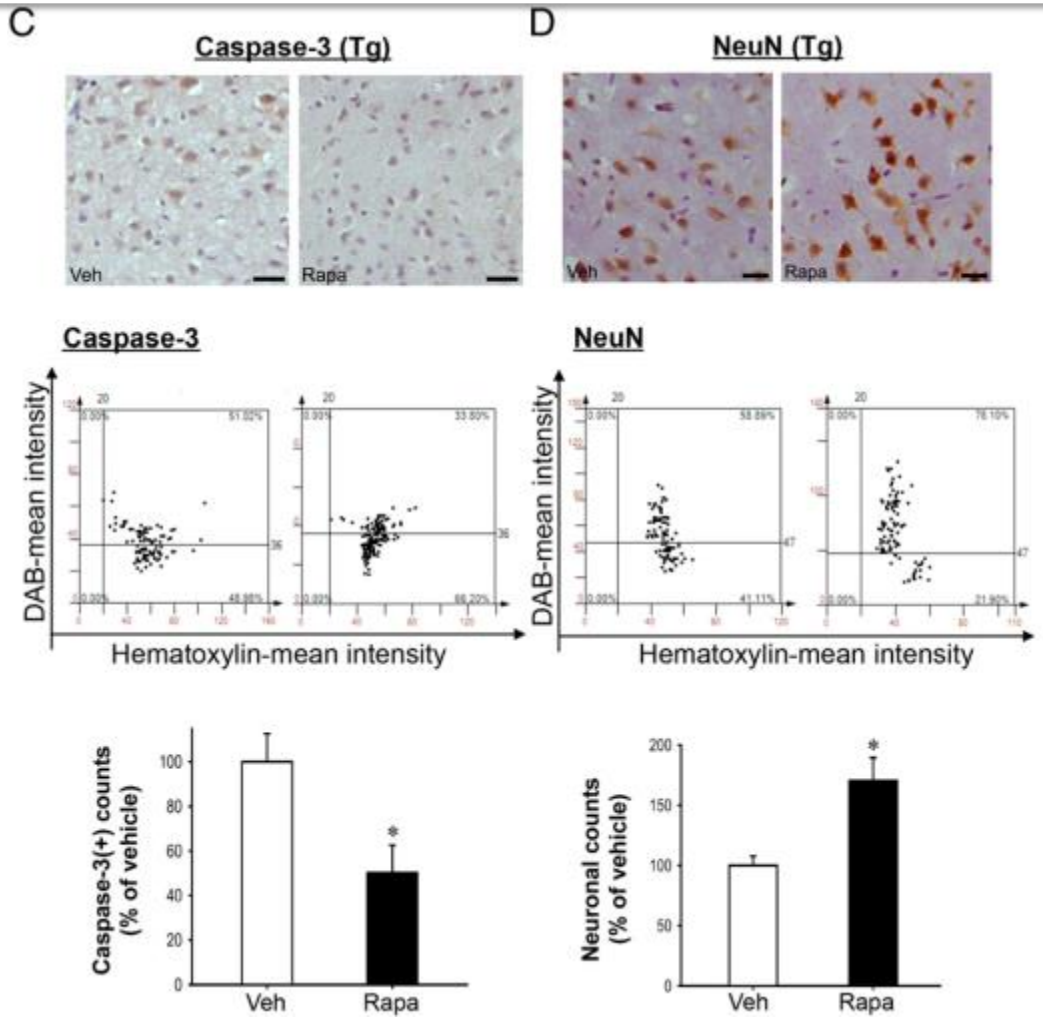
NCFB 生技醫藥核心設施平台 National Core Facility for Biopharmaceuticals

日期	論文名稱	作者	期刊	卷數	期數	頁數(開始)	頁數(結束)
2017.10	G-CSF-mobilized bone marrow mesenchymal stem cells replenish neural lineages in Alzheimer's disease mice via CXCR4/SDF-1 chemotaxis	Wu CC, Wang IF, Chiang PM, Wang LC, Shen CJ, Tsai KJ	Mol Neurobiol	54	8	6198	6212
2018.1	Lactobacillus gasseri attenuates allergic airway inflammation through PPARγ activation in dendritic cells	Hsieh MH, Jan RL, Wu LS, Chen PC, Kao HF, Kuo WS, Wang JY	J Mol Med (Berl)	96	1	39	51
2018.1	Hepatocellular carcinoma-related cyclin D1 is selectively regulated by autophagy degradation system	Wu SY, Lan SH, Wu SR, Chiu YC, Lin XZ, Su IJ, Tsai TF, Yen CJ, Lu TH, Liang FW, Li CY, Su HJ, Su CL, Liu HS	Hepatology			doi:10.1002/hep.29781	
2018.2	Hypoxia-preconditioned human umbilical vein endothelial cells protect against neurovascular damage after hypoxic ischemia in neonatal brain	Lee YC, Chang YC, Wu CC, Huang CC	Mol Neurobiol			doi: 10.1007/s12035-018-0867-5	
2018.2	Angiogenin attenuates scar formation in burn patients by reducing fibroblast proliferation and transforming growth factor β1 secretion	Pan SC, Lee CH, Chen CL, Fang WY, Wu LW	Ann Plast Surg	80	2S	S79	S83

日期	論文名稱	作者	期刊	卷數	期數	頁數(開始)	頁數(結束)	Impact Factor	致謝
2018.10	Hypoxia-preconditioned human umbilical vein endothelial cells protect against neurovascular damage after hypoxic ischemia in neonatal brain	Lee YC, Chang YC, Wu CC, Huang CC	Mol Neurobiol	55	10	7743	7757	5.076	否
2018.11	Pterostilbene attenuates hexavalent chromium-induced allergic contact dermatitis by preventing cell apoptosis and inhibiting IL-1β-related NLRP3 inflammasome activation	Wang BJ, Chiu HW, Lee YL, Li CY, Wang YJ, Lee YH	J Clin Med	7	12	E489	E489	5.583	否
2018.11	Elevated serum Interleukin-8 level correlates with cancer-related cachexia and sarcopenia: an indicator for pancreatic cancer outcomes	Hou YC, Wang CJ, Chao YJ, Chen HY7, Wang HC, Tung HL, Lin JT, Shan YS	J. Clin. Med	7	12	E502	E502	5.583	是
2018.12	Synthetic α5β1 integrin ligand PHSRN is proangiogenic and neuroprotective in cerebral ischemic stroke	Wu CC, Wang LC, Su YT, Wei WY, Tsai KJ	Biomaterials	185		142	154	8.806	否

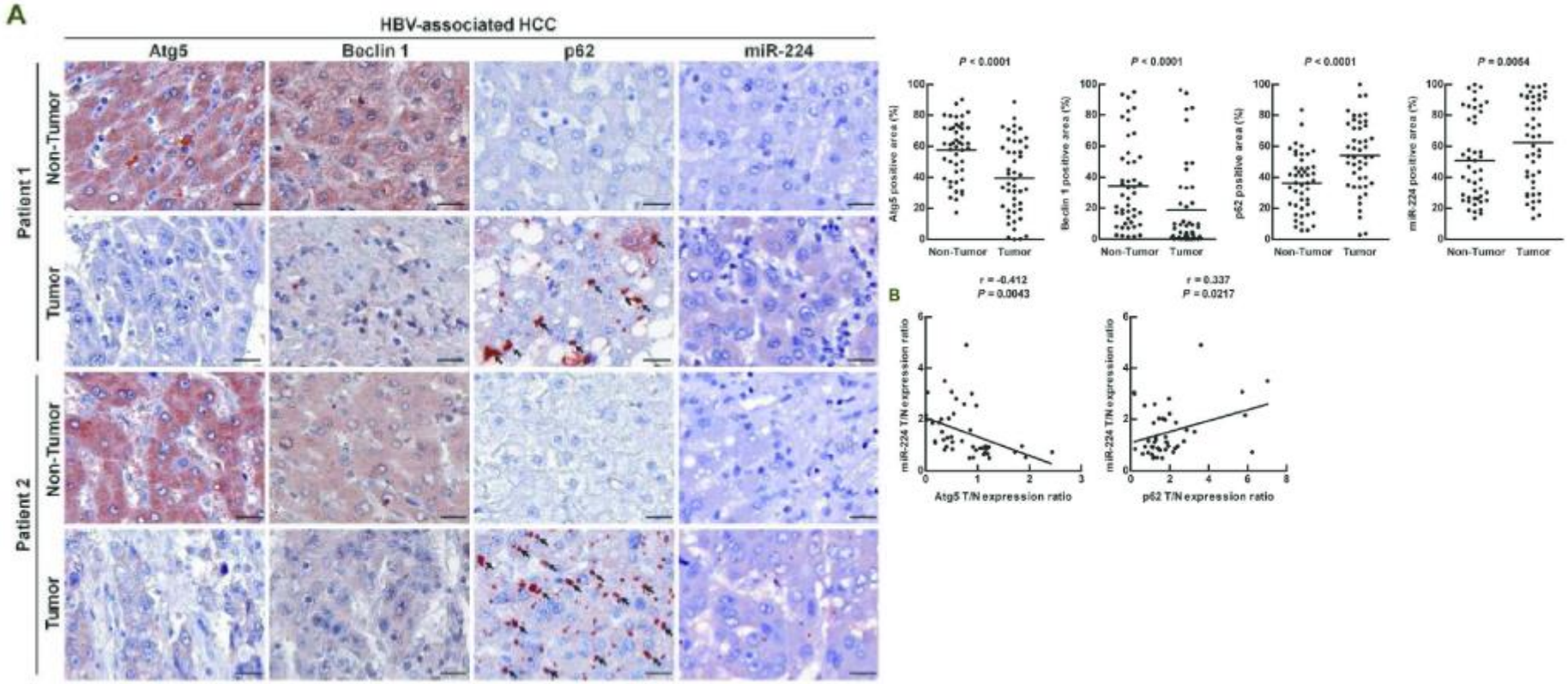
N=61
IF>5=43

Application



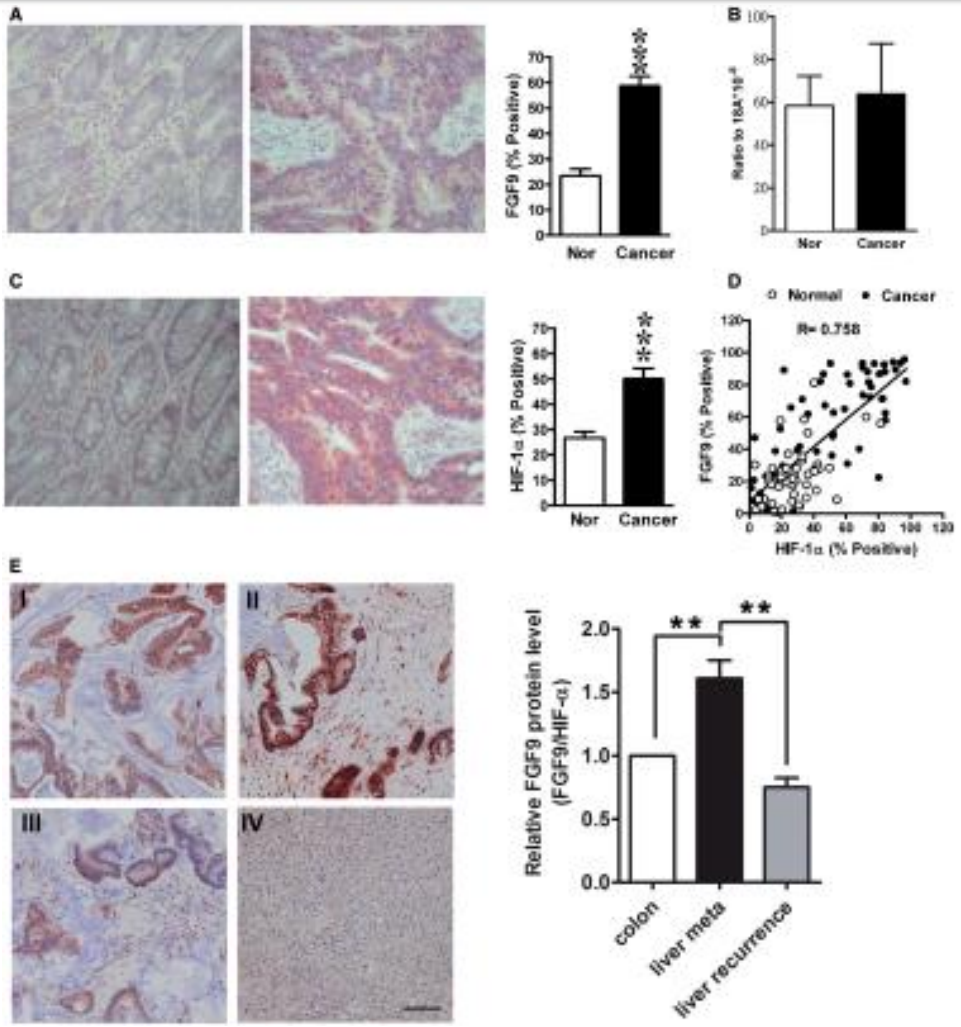
Autophagy Activators Rescue and Alleviate Pathogenesis of a Mouse Model with Proteinopathies of the TAR DNA-binding Protein 43. ***2012 Sep.*** **I-Fang Wang et al.,** ***PNAS.***

Application



Autophagy suppresses tumorigenesis of hepatitis B virus-associated hepatocellular carcinoma through degradation of miR-224. *2013*. Sheng-Hui Lan et al., *Hepatology*.

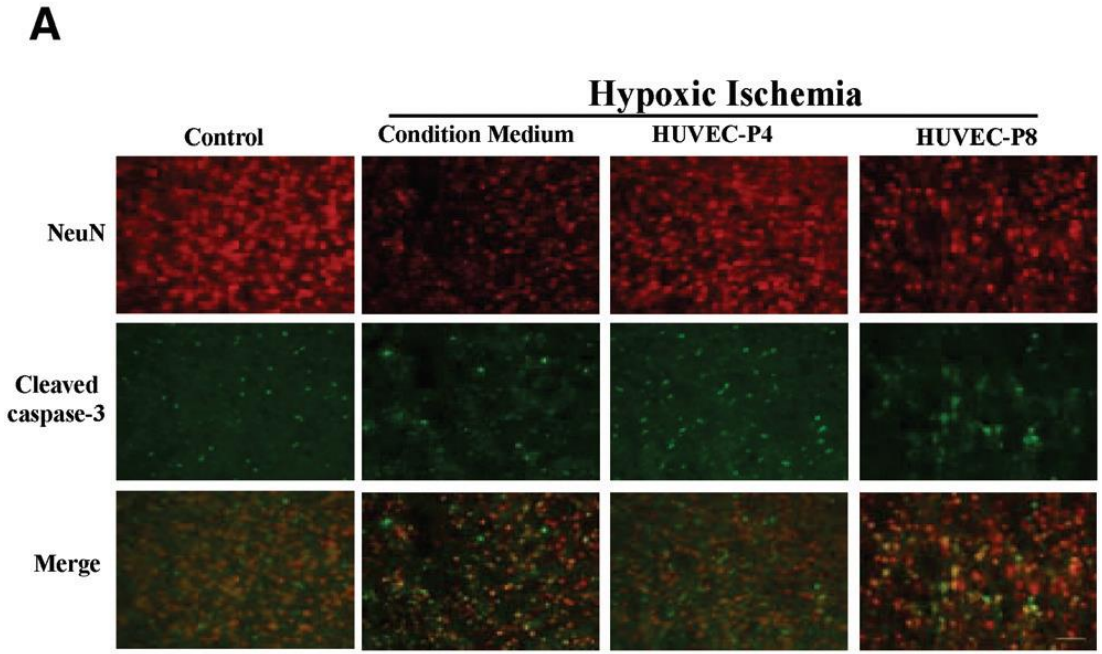
Application

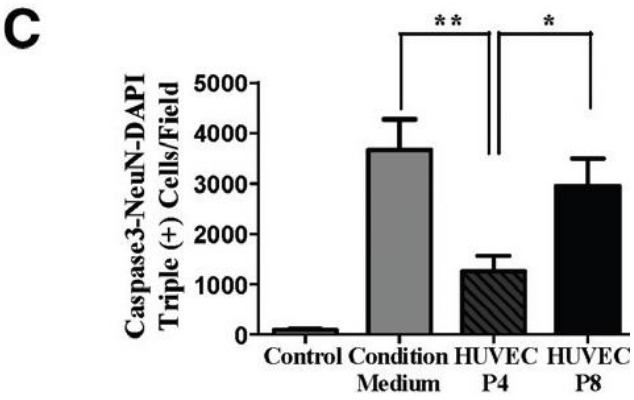


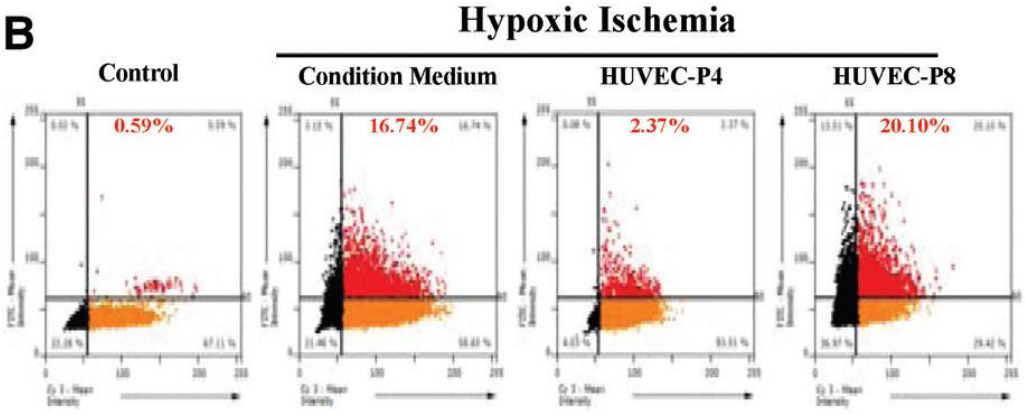
Overexpression of FGF9 in colon cancer cells is mediated by hypoxia-induced translational activation

2013 Dec. **Tsung-Ming Chen et al.,** ***Nucleic Acids Research.***

Application



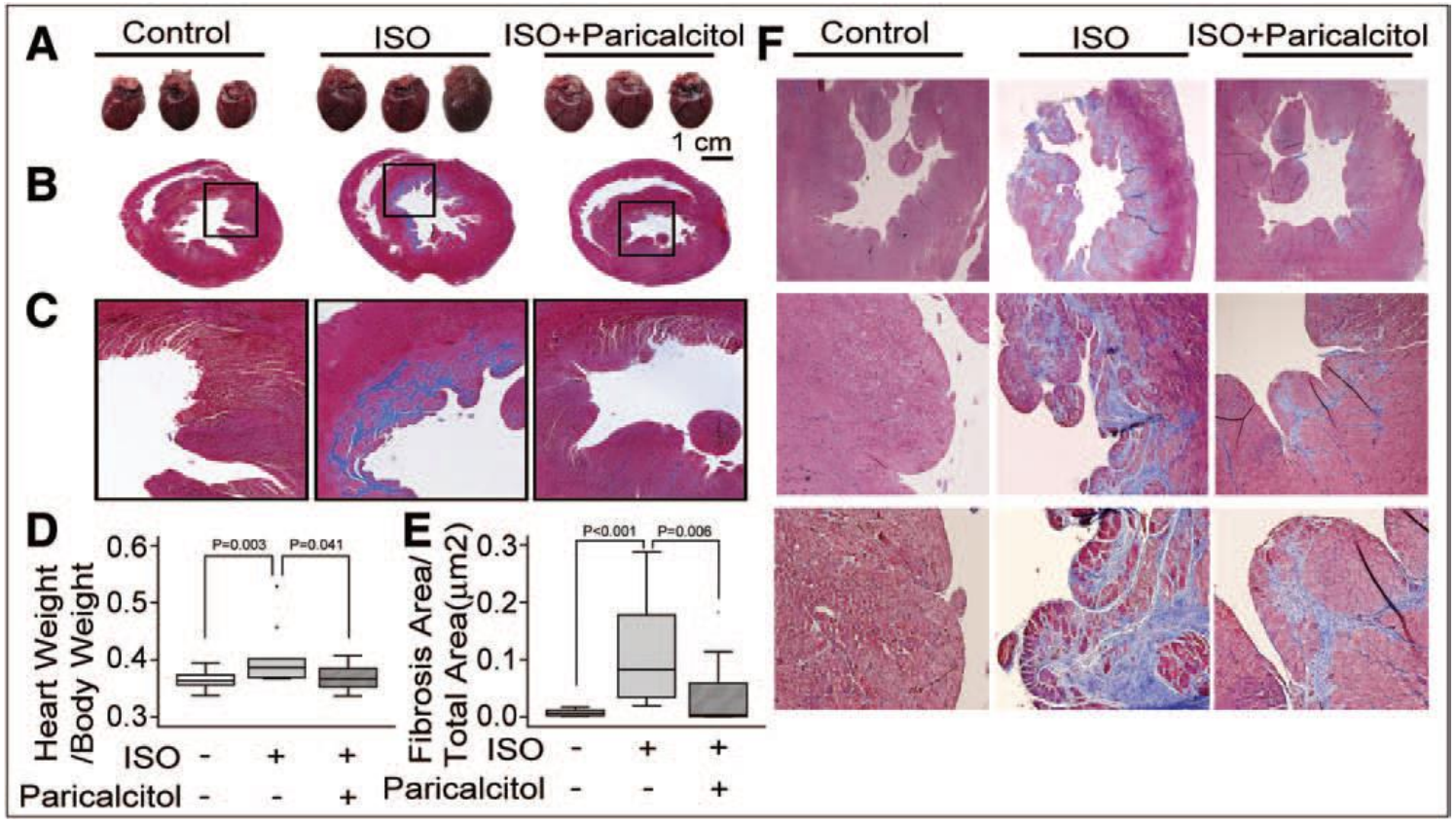




Human Umbilical Vein Endothelial Cells Protect Against Hypoxic-Ischemic Damage in Neonatal Brain via Stromal Cell-derived Factor 1/C-X-C Chemokine Receptor Type 4. ***2013 Feb***

Chia-Ching Wu et al., *Stroke.*

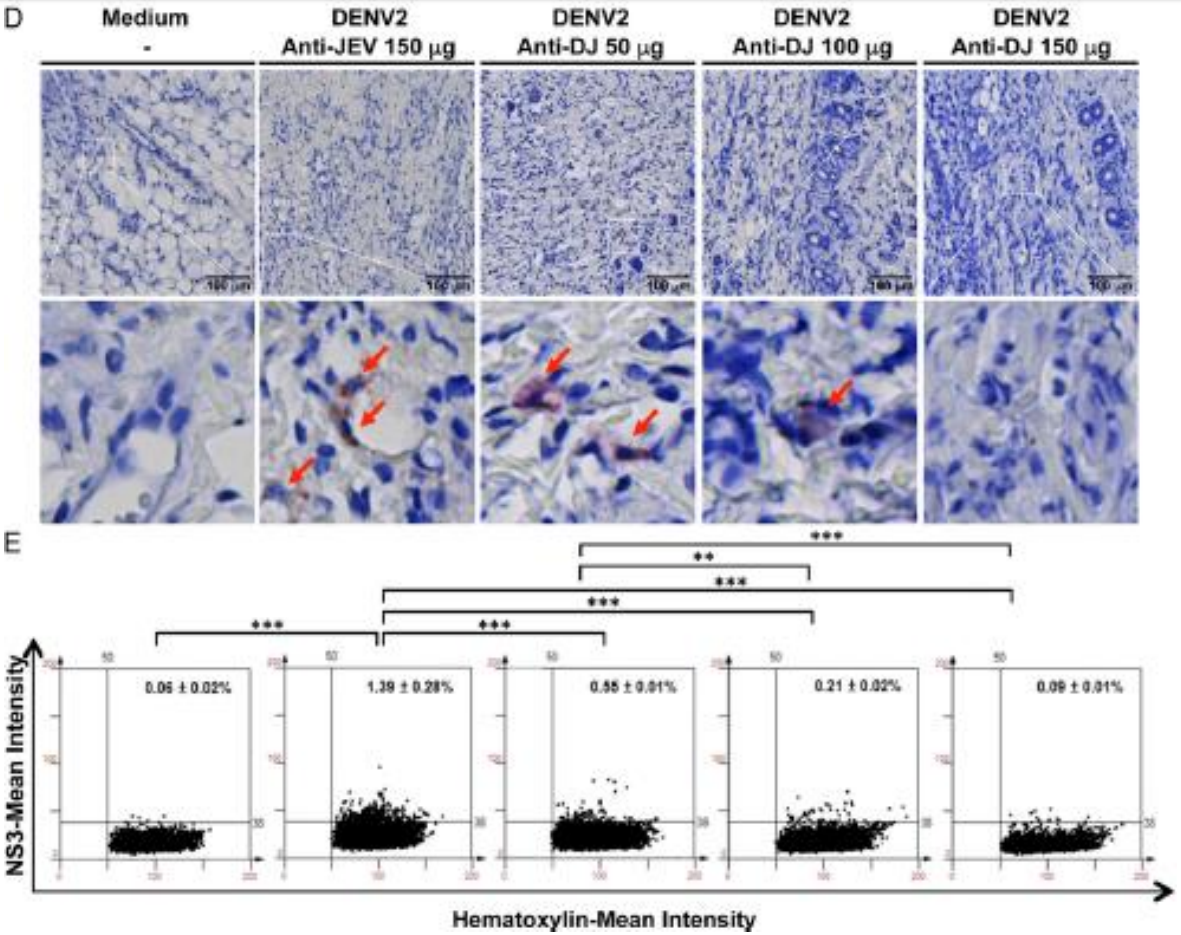
Application



Paricalcitol Attenuates Cardiac Fibrosis and Expression of Endothelial Cell Transition arkers in Isoproterenol-Induced Cardiomyopathic Rats

2016 sep. **Chi-Cheng Lai et al.,** ***Crit Care Med*** **.**

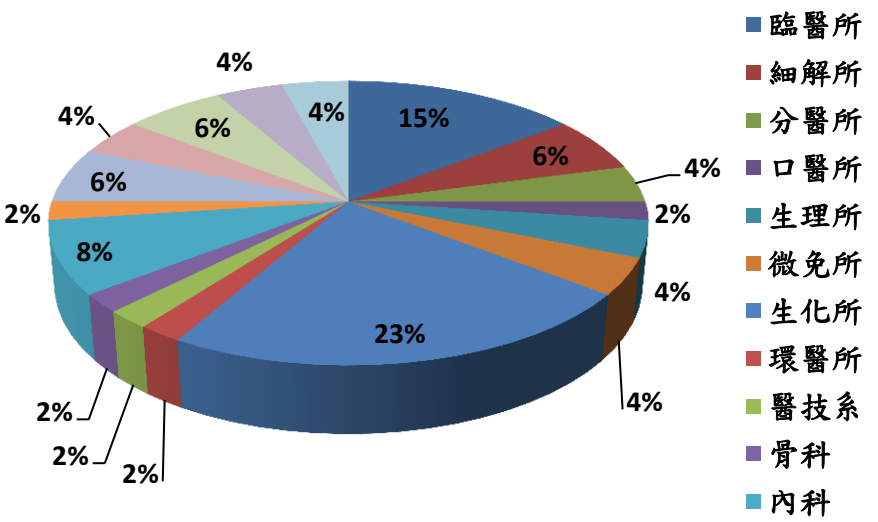
Application



Therapeutic Effects of Monoclonal Antibody against Dengue Virus NS1 in a STAT1 Knockout Mouse Model of Dengue Infection. ***2017 sep.*** **Shu-wen Wang et al.,** ***The Journal of Immunology*****.**

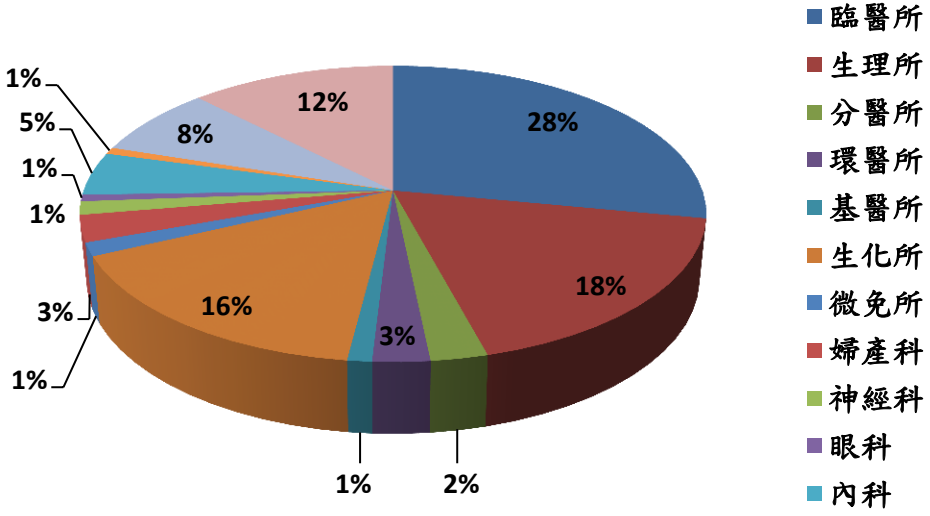
使用單位分佈

2018年代檢



共48人次

2018年分析

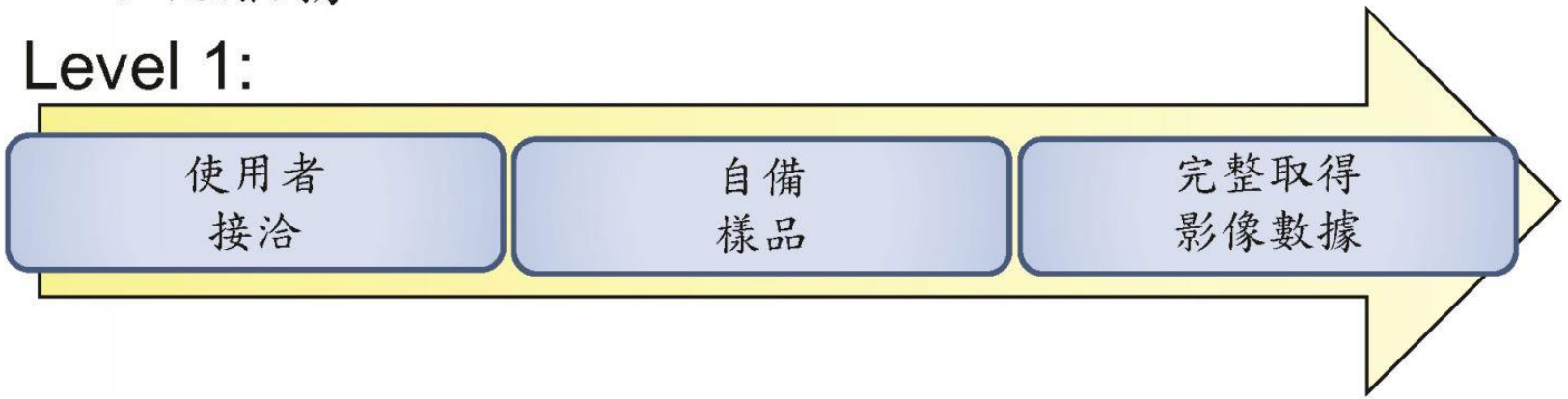


共254人次

http://bioimage.med.ncku.edu.tw/

一站化服務

Level 1:



Level 2:

申請表單

NCFB
生技醫藥核心設施平台
National Core Facility for Biopharmaceuticals
成功大學 National Cheng Kung University
生醫光學影像核心平台
Bioimaging Core Facility
首頁
最新消息
關於我們
儀器簡介
成果專區
訓練課程及代檢服務
收費標準
儀器預約
表單下載
相關連結
聯絡我們
【認證課程】12/27(三)-12/29(五)舉辦共軛焦顯微影像系統與多光子顯微影像系統儀器使用認證課程
表單下載
首頁 > 表單下載
發佈時間:2017-11-21 10:39:21
核心設施使用同意證明單_106.11.10更新 (點此下載同意證明單)
服務登錄單 (點此下載服務登錄單)
服務滿意度調查表 (點此下載調查表)
生醫光學影像核心平台服務合約內容 (點此下載服務合約)
成大醫院光學影像代檢申請單 (點此下載代檢申請單)
核心平台協助教師/廠商辦理儀器講座合約書 (點此下載合約書)
MetaMorph 分析軟體轉介單 (點此下載轉介單)

代檢服務及管理項目、收費標準
（104年5月1日加入科技部核心平台）

NCFB 生技醫藥核心設施平台 National Core Facility for Biopharmaceuticals

教育訓練　預約管理　儀器代檢　技術諮詢

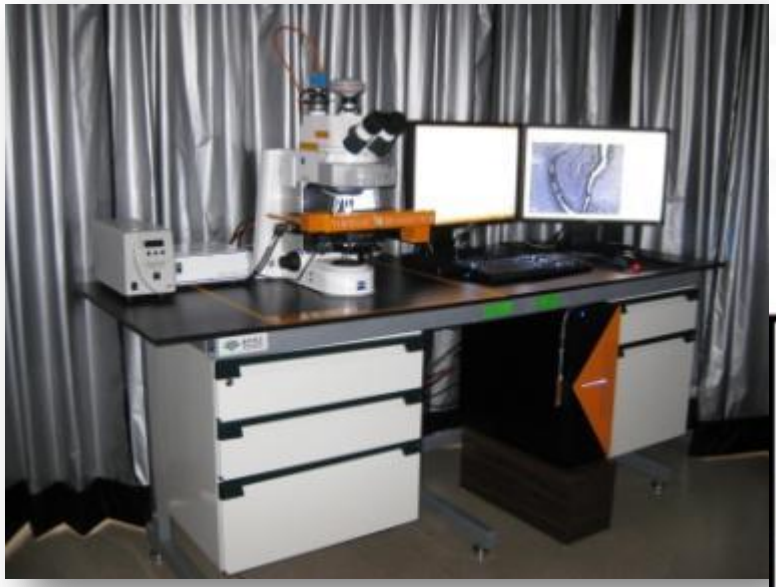
收費項目	收費標準	
	學術界	業界
代檢	1100元/小時	1450元/小時
自行分析	外來影像200元/小時	外來影像250元/小時

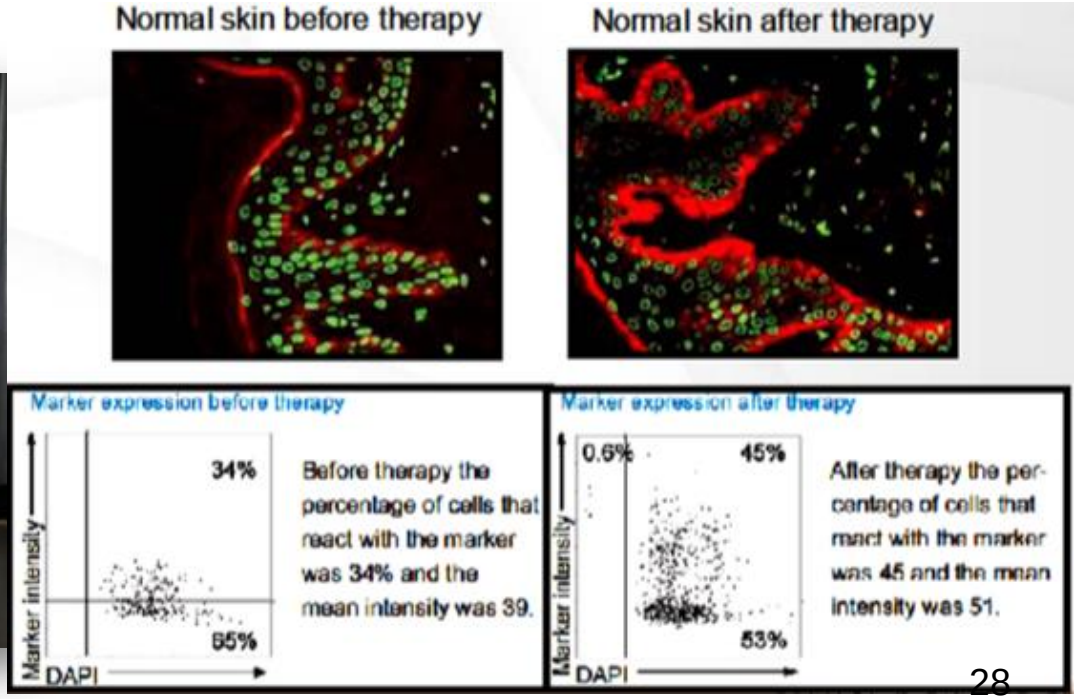
*收費以小時為單位，未滿一小時以一小時計費
*使用全景拍照系統者可免費使用分析軟體

全景組織體細胞核心實驗室

生技醫藥核心設施平台
National Core Facility for Biopharmaceuticals

位　置: 成大醫院門診大樓六樓光學影像核心實驗室
顧問研究員: 蔡坤哲 老師 ext.06-2353535#4254
Email: kjtsai@mail.ncku.edu.tw
技術員: 蕭雅純 小姐 ext. 06-2353535#3115
Email: n953438@mail.hosp.ncku.edu.tw
核心技術：將組織切片影像數位化，並定量組織細胞資訊。
儀器設備：影像擷取→代檢；離線分析電腦系統→獨立使用





NCFB
生技醫藥核心設施平台
National Core Facility for Biopharmaceuticals

精準率高、有效率、可靠性佳

NCFB
生技醫藥核心設施平台
National Core Facility for Biopharmaceuticals

Thank you for your attention!