

# MACS<sup>®</sup> Sample Preparation

- Tissue에서 부터 **Single cell Dissociation**의 표준화
- **DNA/RNA/Protein** 등을 추출하기 위한 조직 분쇄 용이

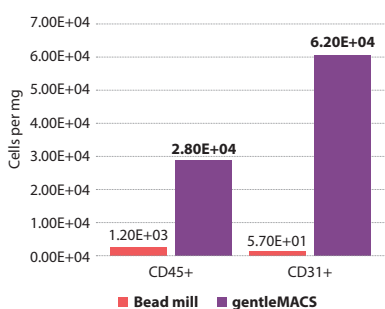
**gentleMACS Dissociator**  
(# 130-093-235)

**gentleMACS<sup>™</sup> Octo Dissociator with Heaters**  
(# 130-096-427)

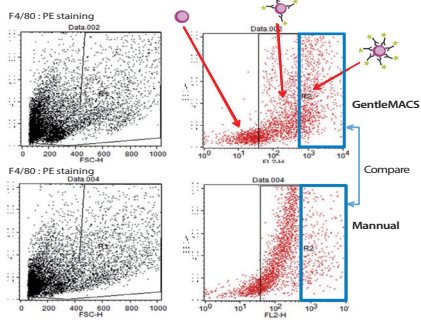


## gentleMACS Dissociator의 특징

### 01 | 일반적인 방법에 비해 월등히 높은 생존율

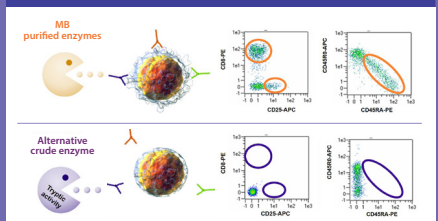


### 02 | 높은 epitope 보존율 (실제, 한국 고객 데이터)



### 03 | 샘플의 재현성 (Reproducibility)

### 04 | Highly purified enzymes으로 epitope 손상 방지



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# gentleMACS Octo Dissociator w/Heaters 특별 Package



gentleMACS™  
Octo Dissociator with Heaters  
(# 130-096-427)

Sample Preparation 캠페인  
GMOH 구매 시,  
100 tests 분량의  
소모품을 무상으로  
함께 제공해 드립니다.  
(단, TDK는 용량에 따라 차이가 있습니다.)

## 패키지 선택사항

택1

### SmartStrainers, 100filters (4X25)



- 30 μm # 130-110-915
- 70 μm # 130-110-916
- 100 μm # 130-110-917

택1

### Tubes, 100 tubes (4x25)



- M Tubes # 130-096-335
- C Tubes # 130-096-334

택1

### Tissue Dissociation Kits



- Tissue Dissociation Kits  
(단, ABDK 50% 할인제공)  
- 리스트 참고

포함

### Tissue Storage Solution (100ml), 1개



- # 130-100-008

## MACS® SmartStrainers



- ✓ 멸균화된 제품
- ✓ 50ml tube 뿐만 아니라 15ml tube에도 적용가능
- ✓ 목적에 따라 stack이 가능
- ✓ Reservoir가 있어 샘플이 옆으로 흘러 넘치지 않음
- ✓ 사용이 쉽고 편리

사용	제품번호	제품명
100 filters (4x25 pieces)	130-110-915	MACS SmartStrainers (30 μm)
	130-110-916	MACS SmartStrainers (70 μm)
	130-110-917	MACS SmartStrainers (100 μm)
50 filters (single-packed)	130-098-458	MACS SmartStrainers (30 μm)
	130-098-462	MACS SmartStrainers (70 μm)
	130-098-463	MACS SmartStrainers (100 μm)

QR코드로  
타제품과의 차이점을  
눈으로 직접 확인해 보세요

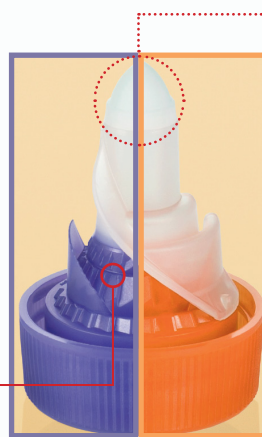
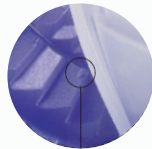


# gentleMACS Tubes

## C Tube

제품번호	제품명	용량
130-096-334	C Tubes	100 tubes (4x25 pieces)
130-093-237	C Tubes	25 tubes (single-packed)

Spacers – 톱날구조로 조직에서 살아있는 single cell을 획득할 수 있는 Secret 기술력!!



Pierceable Septum - Tube의 뚜껑을 열지 않고 Long tip을 이용하여 분리된 single cell 획득가능

## M Tube

제품번호	제품명	용량
130-096-335	M Tubes	100 tubes (4x25 pieces)
130-093-236	M Tubes	25 tubes (single-packed)

# Tissue Dissociation Kits (TDKs)

제품번호	제품명	용량
130-107-677	Adult Brain Dissociation Kit, mouse and rat (*)	50 prep
130-110-201	Multi Tissue Dissociation Kit 1 (50 preps)	최대 50 prep
130-110-203	Multi Tissue Dissociation Kit 2 (25 preps)	최대 25 prep
130-110-204	Multi Tissue Dissociation Kit 3 (100 preps)	최대 100 prep
130-095-929	Tumor Dissociation Kit, human	25 prep
130-096-730	Tumor Dissociation Kit, mouse	50 prep
130-095-942	Brain Tumor Dissociation Kit (P)	25 prep
130-095-939	Brain Tumor Dissociation Kit (T)	25 prep
130-092-628	Neural Tissue Dissociation Kit (P)	50 prep
130-093-231	Neural Tissue Dissociation Kit (T)	50 prep
130-094-802	Neural Tissue Dissociation Kit – Postnatal Neurons	50 prep
130-095-927	Lung Dissociation Kit, mouse	100 prep
130-095-926	Spleen Dissociation Kit, mouse	100 prep
130-105-807	Liver Dissociation Kit, mouse	50 prep
130-097-410	Lamina Propria Dissociation Kit, mouse	50 prep
130-098-373	Neonatal Heart Dissociation Kit, mouse and rat	25 prep
130-098-305	Skeletal Muscle Dissociation Kit, mouse and rat	50 prep
130-103-464	Epidermis Dissociation Kit, human	25 prep
130-095-928	Epidermis Dissociation Kit, mouse	50 prep
130-101-540	Whole Skin Dissociation Kit, human	25 prep
130-096-348	Embryoid Body Dissociation Kit, human and mouse (**)	50 prep
130-105-737	Umbilical Cord Dissociation Kit, human	50 prep
130-105-808	Adipose Tissue Dissociation Kit, mouse and rat	25 prep
130-118-052	FFPE Tissue Dissociation Kit (*)	25 prep

\* gentleMACS™ Octo Dissociator with Heaters 만 가능    \*\* gentleMACS Dissociator (2Ch) 만 가능

- ✓ 총 24가지 제품
- ✓ 각 조직에 맞는 최적의 enzyme solution으로 구성
- ✓ Batch간의 variation이 없음
- ✓ 재현성 있는 결과 도출
- ✓ Highly purified enzymes으로 Epitope 손상을 최소화

### (P) Papain / (T) Trypsin

#### Multi Tissue Dissociation Kit 1:

- Dissociation of kidney (human)
- Dissociation of prostate (mouse)
- Dissociation of inflamed neural tissue

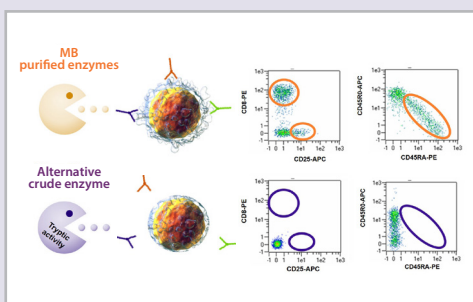
#### Multi Tissue Dissociation Kit 2:

- Dissociation of lung (rat)
- Dissociation of kidney (mouse)

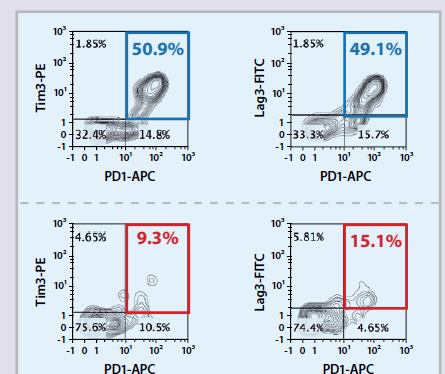
#### Multi Tissue Dissociation Kit 3:

- Dissociation of pluripotent stem cell (PSC) – derived cardiomyocytes
- Dissociation of mouse embryos to generate mouse embryonic fibroblasts

## [Enzyme Quality 비교]



## [TDK vs. manual 비교]



B16-F10 (melanoma) mouse tumors / labeled with REAfinity antibodies.

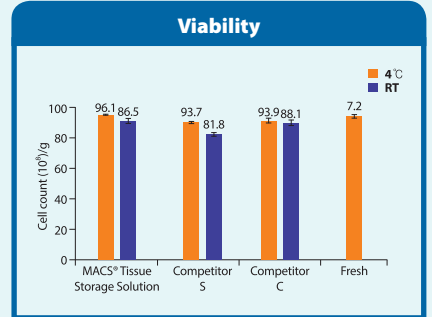
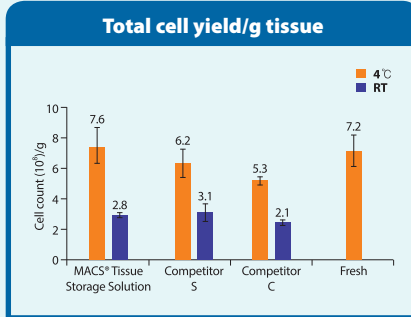


# MACS Tissue Storage Solution

사람의 샘플이나 동물 조직을 apoptosis나 necrosis의 유도없이 48시간까지 냉장보관유지 가능(조직마다 다름, Brain은 24시간 이내)



제품번호	제품명	용량
130-100-008	MACS Tissue Storage Solution	100ml



## Sample clearing reagents

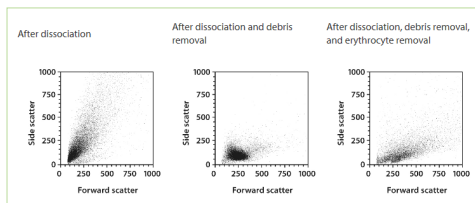
최상의 quality있는 샘플을 준비하기 위해 함께 사용하면 BEST인 제품~!!

제품번호	제품명	용량
130-109-398	Debris Removal Solution	2x45 mL
130-090-101	Dead Cell Removal Kit	for 1x10 <sup>9</sup> total cells
130-093-657	Endotoxin Removal Beads	3 mL
130-093-659		5x3 mL
130-096-733	Myelin Removal Beads II (human, mouse, rat)	4 mL
130-096-433		2x4 mL
130-094-183	Red Blood Cell Lysis Solution (10x)	50 mL



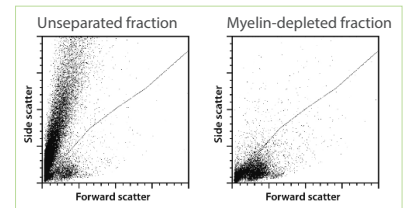
### Debris Removal Solution

- ✓ 바로 사용이 가능한 density gradient reagent
- ✓ 빠르고 효과적으로 debris 제거 가능
- ✓ 1g 조직을 사용시, 50회 사용가능



### Myelin Removal Beads II

- ✓ Single cell suspension에서 부터 myelin debris를 효과적으로 제거가능
- ✓ Microbeads를 샘플과 incubation을 한 뒤, column을 이용한 depletion 방식으로 myelin 제거



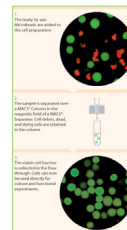
### Endotoxin Removal Beads

- ✓ 정제된 단백질로부터 endotoxin과 DNA를 쉽고 빠르게 제거
- ✓ Beads에 공유 결합된 polycationic ligand는 Endotoxins과 DNA의 polyanionic molecules과 강하게 결합되는 원리로 제거



### Dead Cell Removal Kit

- ✓ Cell culture 또는 조직 준비에서 dead cell을 빠르게 제거가능
- ✓ Microbeads과 binding buffer를 이용하여 쉽게 제거가능



### Red Blood Cell Lysis Solution

- ✓ Human, mouse, 또는 Rat에서 기원하는 single cell suspension의 세포에 영향을 최소화하여 적혈구를 용해시키는데 적합

# Application

## ◆ Genomics Analysis

(Single Cell Genomics, Single Cell Sequencing, Next Generation Sequencing 등)

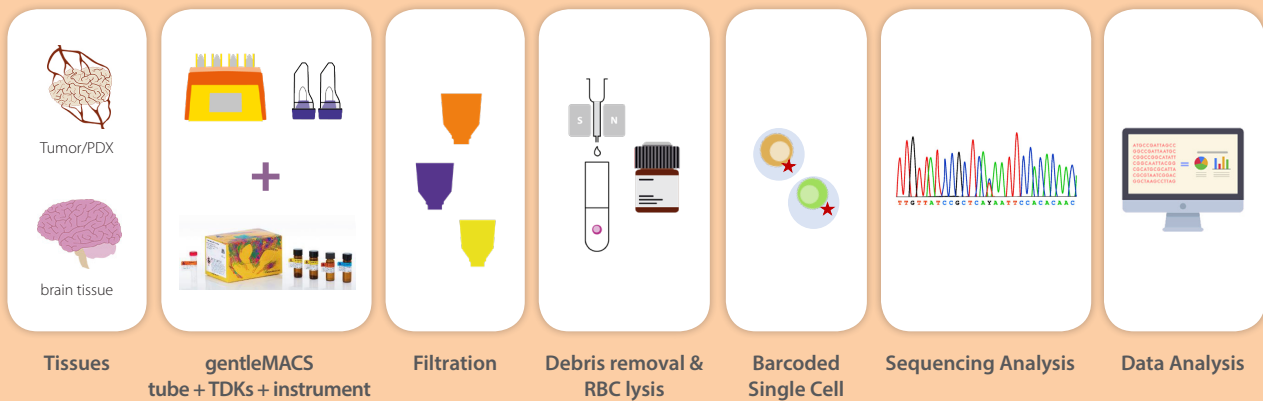
**최신 동향 >>> Single Cell Genomics**

**조직 단위가 아닌 세포 하나하나에서 유전체 연구를 수행하는 기술**

### • 적용분야

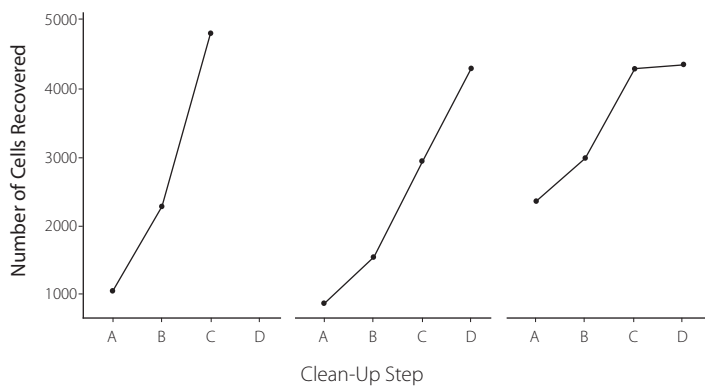
- ✓ 미생물 유전체식별
- ✓ 줄기세포 계대배양 시 단일세포 유지관련 연구
- ✓ 질환 유전적 염색체 역할 규명
- ✓ 종양 이질성 이해 등 다양한 분야에서 적용가능

### • Single Cell Genomics Workflow

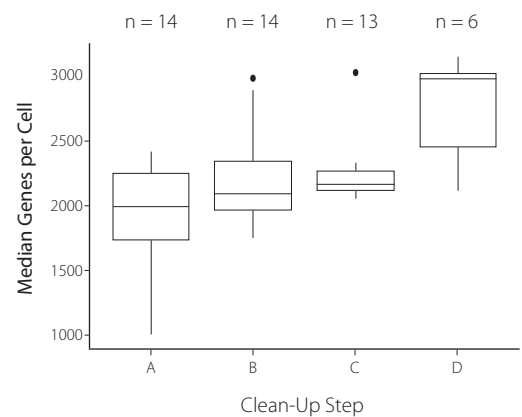


### • 결과

#### Cell Recovery - Colon



#### Library Complexity



A = Post Filtration | B = Post RBC Lysis | C, (D) = Post Dead Cell Removal(s)

## Application

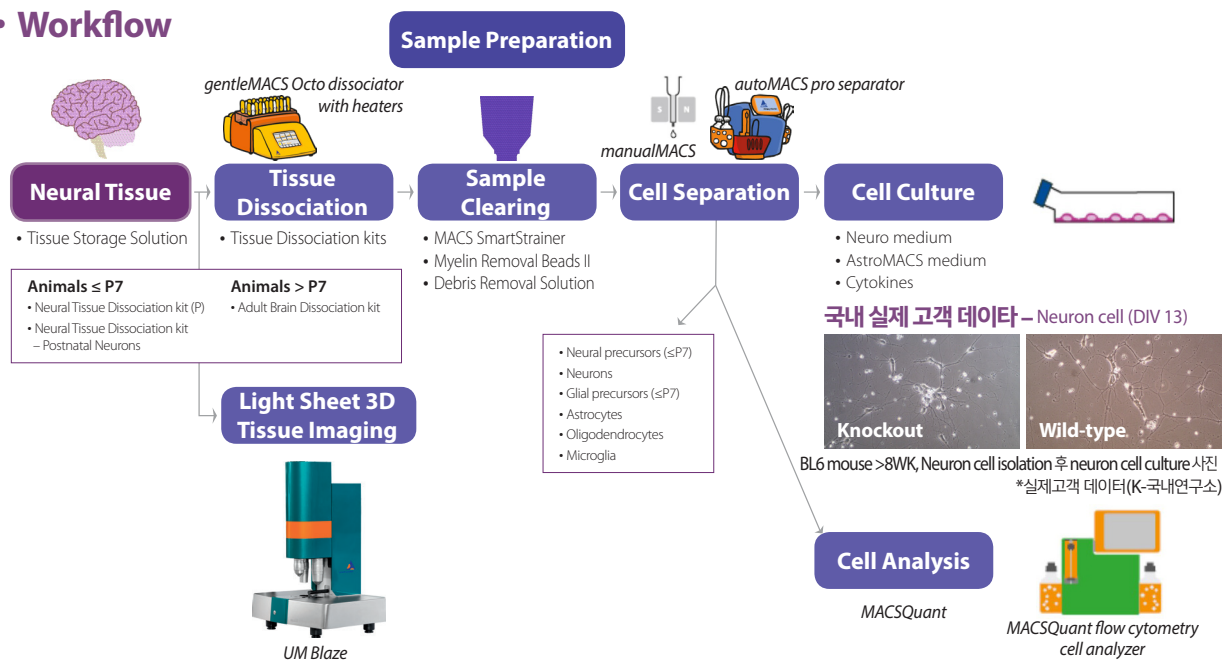
### ◆ Neonatal brain Single Cell Dissociation – Cell Separation – Cell culture

P7 이하의 animal brain을 dissociation 한 뒤 Neuronal precursors, Neurons, Glial precursors, Astrocytes, Oligodendrocytes, Microglia 등 다양한 세포 분리, Cell culture 및 Analysis 가능

### ◆ Adult Brain Single Cell Dissociation – Cell Separation – Cell culture

P7 이상의 animal brain을 dissociation한 뒤 Astrocyte, Neurons, Oligodendrocytes, Microglia 등 다양한 세포 분리, Cell culture 및 Analysis 가능

#### • Workflow



Small tissue - yield guideline (주령 또는 strain에 따른 차이는 있음)

	Tissue	Weight	yield/100mg	yield/tissue
n=2	Spinal cord	93mg ± 13.3mg	$3.41 \times 10^5 \pm 0.7 \times 10^5$	$3.24 \times 10^5 \pm 0.57 \times 10^5$
n=6	Hippocampus	49mg ± 10.4mg	$6.76 \times 10^5 \pm 1.3 \times 10^5$	$3.39 \times 10^5 \pm 0.57 \times 10^5$
n=2	subventricular zone(SVZ)	27mg ± 3mg	$3.23 \times 10^5 \pm 0.3 \times 10^5$	$8.64 \times 10^4 \pm 0.19 \times 10^4$

### ◆ Automated dissociation of formalin-fixed paraffin-embedded (FFPE) carcinoma tissue

- 유방암, 전립선암, 결장암, 폐암 및 췌장암을 비롯한 다양한 FFPE 샘플에서 Single Cell 분석이 가능
- 세포 표면의 마커의 보존으로 종양 및 비 종양세포를 분리하여 유전 분석의 민감도를 높일 수 있음
- 샘플자체에 reference cell이 포함되어 있어 별도로 준비할 필요 없음

#### • Molecular genetic Workflow

