



# Tools for Cell & Gene Therapy

- Immune Cell Culture
- 3D & Organoids Culture
- Primary Cell / Tumor Cell



## Order Information

For AVATAR Cell Control System		
Description	Cat #	Size
Avatar Duo	1981002	2 Module
Avatar AD	1981003	4 Module
Avatar HT	1981004	6 Module HT



ICR The Institute of Cancer Research

CANCER RESEARCH UK

UKF Helen Diller Family Comprehensive Cancer Center

PARKER INSTITUTE

Cloudz™ for Cell Activation without Magnet Beads		
Description	Cat #	Size
Hyper-Act CD3/CD28	CDZ4023	1 Kit
ExCellerate Human T Cell Expansion Media, Xeno-Free(Optimized for use with the Cloudz™ T Cell Activation Kit)	CCM030	500mL

신제품



For Cell Isolation and Selection with Bead		
Description	Cat#	

Magnet Reagents			
Description	Cat#		
MagCollect Magnet	MAG997		
MagCollect Streptavidin Ferrofluid	MAG999B		
Isolation Kits (Negative)			
	Human	Mouse	Rat
B cell Isolation Kit	MAGH103	MAGM204	MAGR303
CD3+ T Cell Isolation Kit	MAGH101	MAGM201	MAGR301B
Naïve CD4+ T Cell Isolation Kit	MAGH115	MAGM205	
CD4+ T Cell Isolation Kit	MAGH102	MAGM202	MAGR302B
Memory CD4+ T Cell Isolation Kit	MAGH116	MAGM206	
CD4+CD25+ Regulatory T Cell Isolation Kit	MAGH104	MAGM208	
CD8+ T Cell Isolation Kit	MAGH112	MAGM203	
Naïve CD8+ T Cell Isolation Kit		MAGM207	
CD14+ Cell Isolation Kit	MAGH105		
Natural Killer Cell Isolation Kit	MAGH109	MAGM210	
T Cell Enrichment Columns (Negative)			
	Human	Mouse	Rat
CD3+ T Cell Enrichment Column	HTCC	MTCC	
CD4+ T Cell Enrichment Column	GCD4C-1000	MCD4C-1000	
CD4+ T Cell Enrichment Column, Mini	HCD43	MCD43	
CD4+/CD45RA+ Memory T Cell Enrichment Column	HCD42		
CD8+ T Cell Enrichment Column	HCD8C-1000	MCD8C-1000	
CD8+/CD45RA- Memory T Cell Enrichment Column	HCD45		
CD8+/CD45RA- Naïve T Cell Enrichment Column	HCD44		

For 3D/ Organoid/ Tumor Culture		
Cat #	Description	Size
3533-001-02		1mL
3533-005-02	Cultrex Reduced Growth Factor BME, Type 2	5mL
3533-010-02		2 X5mL
3433-001-R1		1mL
3433-005-R1	Cultrex Reduced Growth Factor Basement Membrane, Type R1	5mL
3433-010-R1		2 X5mL
3445-005-01		5mL
3445-010-01	Cultrex Reduced Growth Factor 3-D BME	2 X5mL
3700-100-01	Cultrex Organoid Harvesting Solution	100mL
TWG001	VitroGel 3D Hydrogel	10mL
TWG001S	VitroGel 3D Hydrogel	2mL
TWG002	VitroGel 3D-RGD Hydrogel	10mL
TWG002S	VitroGel 3D-RGD Hydrogel	2mL

For Immune Cell Culture	
Cell 종류	Cytokines for Differentiation and Expansion
B cell	BAFF, CD40 Ligand, IFN-gamma, IL-2, IL-4, IL-10, IL-21
Dendritic Cell	Flt3-Ligand, GM-CSF, IL-3, IL-4, Thrombopoietin, TNF-alpha
Macrophages	M-CSF, IFN-gamma, IL-4, IL-13
Myeloid-derived Suppressor Cells	G-CSF, GM-CSF, IL-4, IL-6, IL-10, IL-13
NK Cell	IL-2, IL-12, IL-15, IL-18, IL-21
CIK Cell	IL-2, IFN-gamma
T Cell	IL-2, CD3 Ab, CD28 Ab
Th1 Cells	IFN-gamma, IL-2, IL-12, IL-27, IL-4 Ab, CD3 Ab, CD28 Ab
Th2 Cells	IL-2, IL-4, CD3 Ab, CD28 Ab, IFN-gamma Ab, IL-12 Ab
Th17 Cells	IL-1 beta, IL-6, IL-21, IL-23, TGF-beta1, CD3 Ab, CD28 Ab, IFN-gamma AB, IL-4 Ab
Treg Cell	IL-2, TGF-beta1, CD3 Ab, CD28 Ab

GMP Protein	Cat #		
	Human	Mouse	Rat
IL-1 beta	201-LB	401-ML	501-RL
IL-2	202-GMP	402-ML	502-RL
IL-4	204-GMP	404-ML	504-RL
IL-6	206-GMP	406-ML	506-RL
IL-10	1064-IL	417-ML	
IL-12	219-GMP	419-ML, 10051-ML	1760-RL
IL-13	213-ILB	413-ML	1945-RL
IL-15	247-GMP	447-ML	
IL-18	9124-IL, B001-5	9139-IL	B002-5
IL-21	8879-IL	594-ML	
IL-23	1290-IL	1887-ML	3136-RL
IL-27	2526-IL	2799-ML	
IFN-gamma	285-GMP	485-MI	585-IF
TNF-alpha	210-GMP	410-MT, 410-TRNC	510-RT
TGF-beta1	240-GMP	7666-MB	
Thrombopoietin	288-TPE, 288-TPN	488-TO	7864-TP
M-CSF	216-GMP	416-ML	
GM-CSF	215-GM	415-ML	518-GM
G-CSF	214-CS	414-CS	
CD40 Ligand/TNFSF5	6420-CL, 2706-CL	8230-CL	8414-CL
BAFF/Blys/TNFSF13B	7537-BF, 2149-BF	8876-BF	
Flt-3 Ligand	308-FK, 308-FKN	427-FL	

Ideal for Cell Therapy  
**GMP Products**  
 TOCRIS a biotechne brand  
 R&D SYSTEMS a biotechne brand

CellXVivo for Immune Cell		
Description	Cat#	
Culture Media		
StemXVivo Serum-Free Human DC Base Media	• Cell Type Specific Media • 각 Cell에 최적화된 Media & Supplement	CCM003
StemXVivo Serum-Free Human T Cell Base Media	• R&D의 Good Quality Products 이용 • Ready to Use	CCM010
Expansion Kits		
Human B Cell Expansion Kit		CDK005
Human CIK Expansion Kit		CDK014
Human NK Cell Expansion Kit		CDK015
Differentiation Kits		
M1 Macrophage Differentiation Kit	• 완벽히 optimization 된 Kit	CDK012
M2 Macrophage Differentiation Kit	• 실험 간의 variation 최소화	CDK013
Monocyte-derived DC Differentiation Kit	• R&D의 Good Quality Proteins 제공	CDK004
Dendritic Cell Differentiation Kit		CDK008
Th1 Cell Differentiation Kit	• 간단하고 손쉬운 검증된 Protocol	CDK018
Th2 Cell Differentiation Kit		CDK019
Th17 Cell Differentiation Kit		CDK017
Treg Cell Differentiation Kit		CDK007

# Cell Isolation & Activation (Cloudz™ GMP)

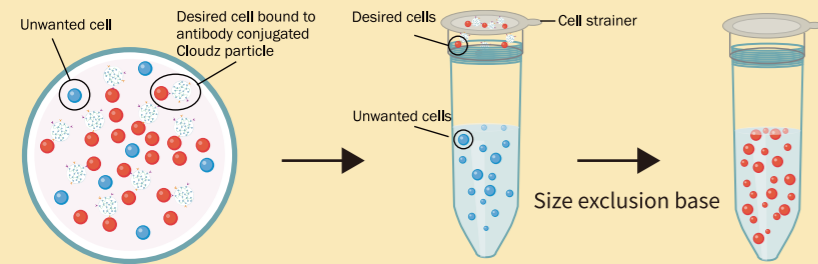
# AVATAR 산소 압력조절 Cell Incubator <Tumor 연구, Primary & Immune Cell Expansion>

# Cell Expansion & Differentiation (Kits & Proteins)

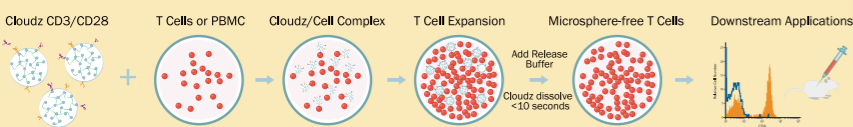
# Functional Assay for Monitoring

## GMP Cell Selection / Cloudz™

- Magnetic bead-Free
- GMP



## GMP Cell Activation / Cloudz™



## 3D / Organoids Culture

- BME**
- Similar to Matrigel
  - Gel at 37°C
  - Low Endotoxin
  - Bigger Batches

- \*Organoids 전용 Matrix**
- Cultrex® BME Type2 RGF
  - Cultrex® BME TypeR1 RGF
- \*Tumor Spheroids 전용 Matrix**
- Cultrex® BME 3D RGF

- Organoid harvesting Solution**
- for sub-culture
  - for biochemical analysis
  - non-enzymatic method

- Vitrogel 3D hydrogel**
- in vivo Tumorigenesis
  - 신개념 3D culture hydrogel
  - Room Temp. Stable
  - Cell harvest 용이
  - Injectable



## Functional Assay for QC/Monitoring

\*모두 분석서비스 가능



Quantikine® ELISAs



ELISA Gold Standard

Luminex® Assays



Luminex Multiplex

Simple Plex™ Assays / ELLA



Automated ELISA

Proteome Profiler™ Arrays



Ab Array

## The AVATAR™ Cell Control System

In Vivo와 유사 환경  
각 기관마다 다른 조건

Oxygen Pressure(psi)

Lung 12% O<sub>2</sub> 0.5 psi

bone 3% O<sub>2</sub> 1.5 psi

tumor 0.1% O<sub>2</sub> 3.0 psi

- 산소(O<sub>2</sub>)와 압력(psi) 조절
- 손쉬운 조작
- 각 기관에 맞는 primary cell 조건!
- Tumor cell도 Tumor 환경에서!!

brain 5% O<sub>2</sub> 1.0 psi

tumor 0.1% O<sub>2</sub> 3.0 psi

bone 3% O<sub>2</sub> 1.5 psi

brain 5% O<sub>2</sub> 1.0 psi

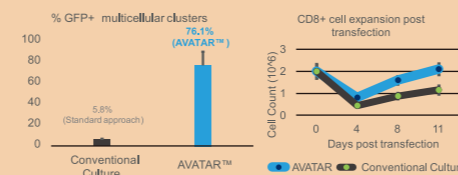
tumor 0.1% O<sub>2</sub> 3.0 psi

bone 3% O<sub>2</sub> 1.5 psi

tumor 0.1% O<sub>2</sub> 3.0 psi

### 1. High Efficiency of Transfection / Transduction

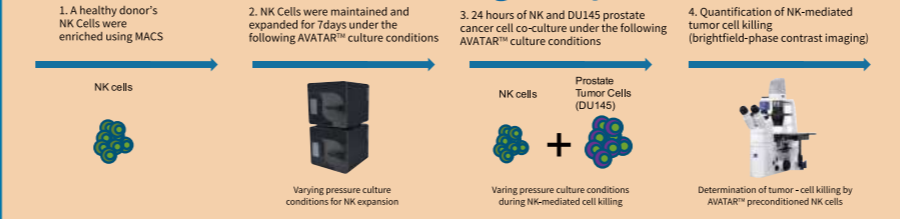
- Gene Editing을 위한 Tool
- Transfection / Transduction 효율 향상
- Cell Recovery 향상



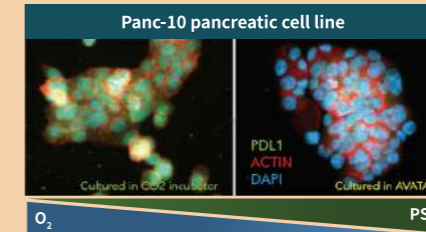
### 2. Immune Cell Culture

- Antigen Specific Cell Expansion
- DC 및 Macrophage 분화 향상
- Cell State Control
- NK/T-mediated Tumor Cell Killing Assay

### NK-mediated tumor cell killing assay



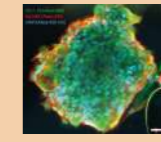
## 3. Immuno-Oncology / TME 연구



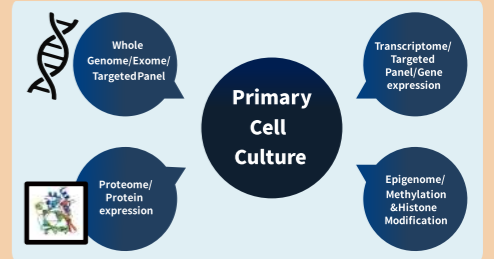
- TME에서 immune checkpoint Rc들의 발현양상 변화.
- Cold Tumor → Hot Tumor 전환연구
- Cell-Cell Communication 연구

## 4. 얼려져 있던 환자샘플의 Recovery & 활용

- 환자 Sample을 이용한 다양한 연구
- Cell recovery 및 Maintenance 향상
- Expand difficult cells.

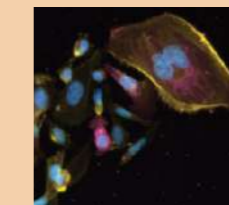


Pancreatic ductal adenocarcinoma

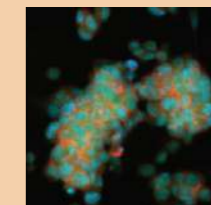


## 5. Primary Tumor Culture (in vivo mimic 환경제공)

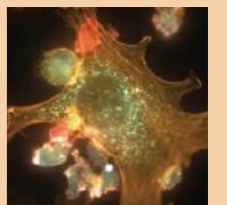
Mimic the Tumor Microenvironment with Patient-derived Tumor Samples in Vitro



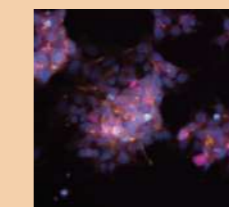
Prostate Adenocarcinoma



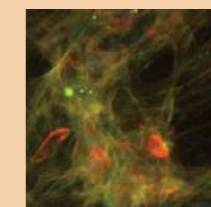
PDAC



CTC



Prostate Carcinoma



RCC

## Cell Expansion & Differentiation

### CellXVivo®

- Immune Cell 분화 및 확장에 최적화된 Media & Supplement
- 다양한 T cell, B cell, DC, NK cell 연구에 최적
- 손쉬운 Protocol + 높은 재현성
- 검증된 Protocol로 Cost & Time Saving



## Proteins for Immune Cells



### Proteins

- Most referenced
- Bioactive
- High Purity
- Low endotoxin level
- GMP grade 가능