

NEXEL

hiPSC-derived Cell Products

www.nexel.co.kr

Cardiosight®-S

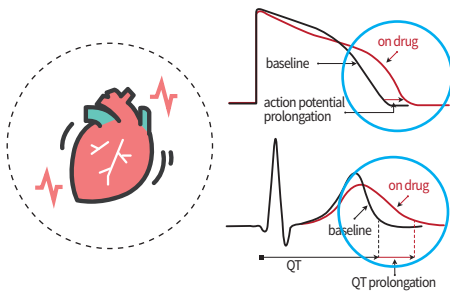
hiPSC-derived Cardiomyocytes

Product Specification

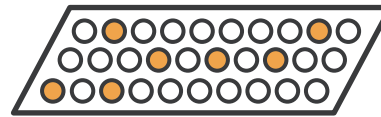
Cell Type	hiPSC-derived Cardiomyocytes
Organism	Human
Tissue Source	Fibroblast (reprogrammed in NEXEL)
Purity	> 90% cardiomyocytes
Shipped	Frozen



Product Applications



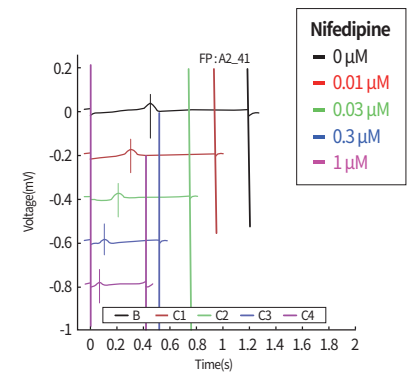
Cardiotoxicity Test



Drug Screening Test



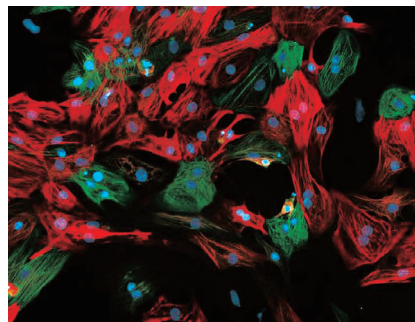
Safety Pharmacology



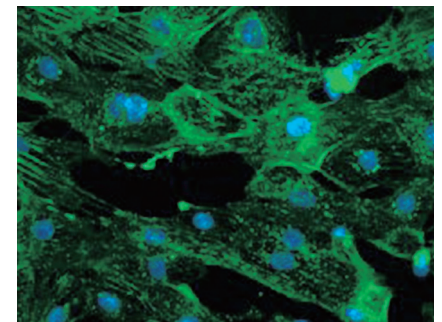
Drug dose-dependent Test



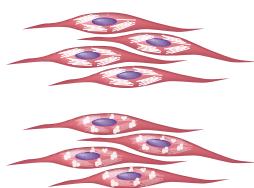
Cell-based Experiments



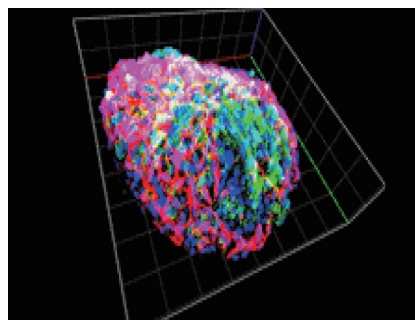
Cardiomyocyte Subtype Analysis



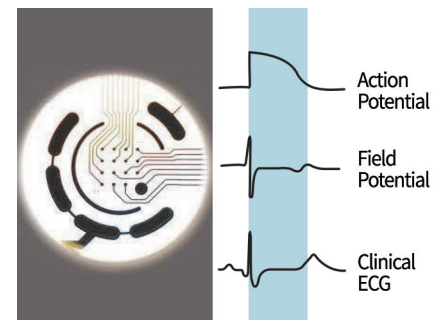
α -actinin Fragmentation Test



Disease Modeling



3D Organoid Bio Printing

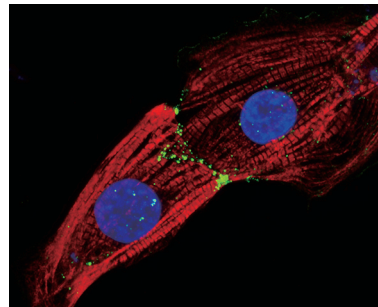


Electrophysiology Experiments

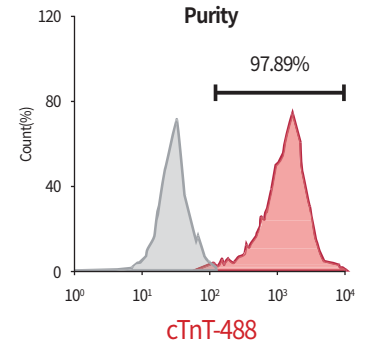


Product Characteristics

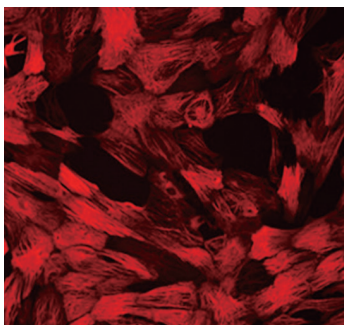
- Human Cardiac Electrophysiology Model
- High Purity (> 90% cTNT Flow cytometry)
- Stable, Spontaneous & Synchronic Beating
- Correct localization of Connexin43 (Cx43)
- Ratio of Ventricular : Atrial : Nodal cells = 80 ~ : ~19 : ~1
- High Sensitivity to Cardiotoxic Drugs



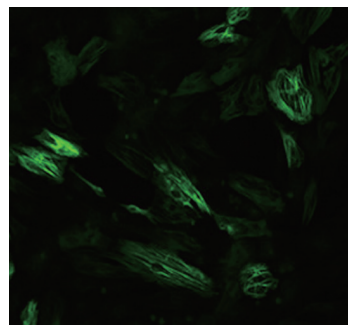
α -actinin Cx43 DAPI



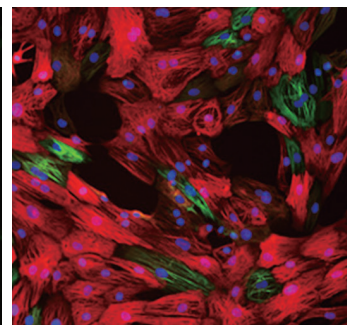
Pure Population of Ventricular Cardiomyocytes



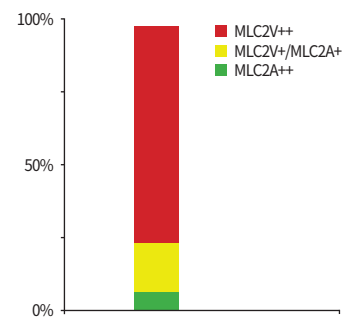
MLC2V



MLC2A



Merge



Cardiosight®-S

Immunostaining : MLC2V & MLC2A indicate Ventricular & Atrial type of cells ratio.

The Cardiosight®-S expresses typical ventricular cardiomyocyte markers and structural characteristics which are indicative of appropriate contractile functionality of these cells.



• Alternatives to Animal Experiment

Global Trend is changing. There is a growing demand for cell-based testing methods to replace animals due to inaccurate results from animal testing and animal welfare problems. iPSC-derived cells can solve these problems.



• iPSC Cardiac Safety Committee member

NEXEL is a member of the HESI CiPA working group and is currently participating in the ICH guideline revision making novel assays including iPSC-derived Cardiomyocytes mandatory to preclinical toxicity testing. Our iPSC-derived Cardiomyocytes has been extensively validated to provide accurate results based on the most recent standards.

Ready to Use

- **Quick recovery** after thawing
- Start to beat synchronously within **2~3 days**
- Ready for most assay by **day 7**

Consistent Quality

- **Consistently high** quality, **ISO9001** certified
- Self-developed QC process focusing on **electrophysiology**
- **Low** batch-to-batch, vial-to-vial variability

High Sensitivity

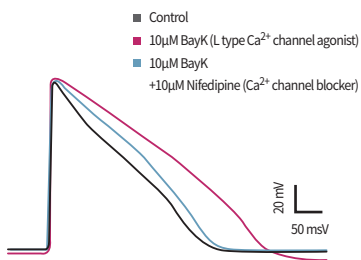
- Easy **detection of changes** to electrophysiology by drug treatment
- **Serum-free media** prevents unwanted interactions

Validation

- **Electrophysiology** validated on multiple platforms
- Multiple **Collaborations**

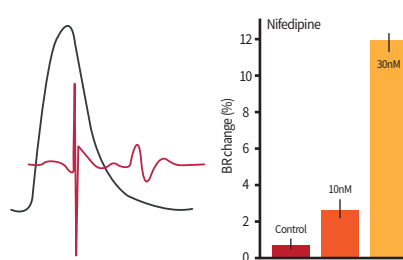
Electrophysiology validated on multiple platforms

Patchliner w/Dynamite⁸



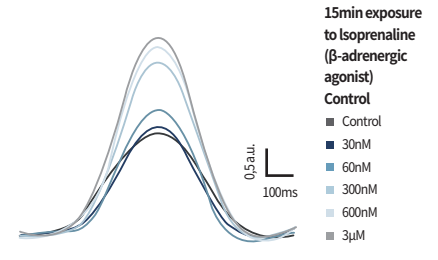
High Drug Sensitivity

CardioExcyte 96

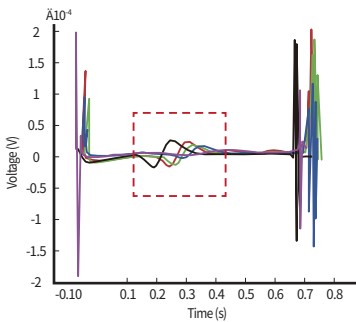


Reliable pharmacology

FLEXcyte 96

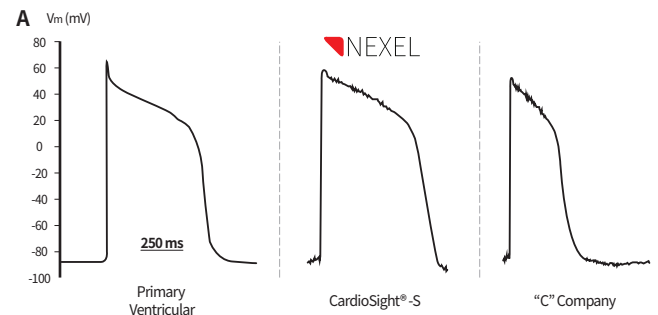
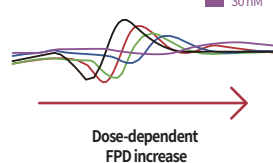


Contraction Amplitude Increase



E4031 (hERG channel blocker) induces lengthening of the FPD

AXION
BIOSYSTEMS
explore life's circuitry™
Maestro



Closer to the Primary Cardiomyocytes compared to other companies

■ Certificate of Analysis

Contents	Passage Criteria
Cell Count (Viability)	> 2.5 or 5 million live cells (> 50%)
Purity/Identity	about 95% cTnT + (over 20 lots average) > 90% cTnT + (minimum)
Drug Response (on DIV7)	
E4031	FPDcF increase at 0.01 μ M > 15%
Dofetilide	FPDcF increase at 0.001 μ M > 15%
Nifedipine	FPDcF decrease at 0.1 μ M > 30%
Mexiletine	Spike amplitude decrease at 10 μ M > 15%
Sterility	
Mycoplasma	Negative
Virus	Negative
Other	Negative
Electrophysiology (on DIV7)	
Beat Interval(Beating rate)	1 ~ 2 (30 ~ 60 beats/min)
FPD(FPDcF)	200 ~ 500 ms
Average FPDcF (over 20 lots)	252.9 \pm 37.7 ms
Average Beat Interval (over 20 lots)	1.59 \pm 0.14 s (37.81 \pm 3.26 bpm)

■ Product Catalog

Cat No.	Description	Volume
C-001	NEXEL Cardiosight®-S, Small 1. Cryopreserved hiPSC-derived Cardiomyocytes	$\geq 2.5 \times 10^6$ Viable cells / Vial
C-002	NEXEL Cardiosight®-S, Large 1. Cryopreserved hiPSC-derived Cardiomyocytes	$\geq 5 \times 10^6$ Viable cells / Vial
CMS-001A	1. Plating Media & Supplement Kit (30 ml) 2. Maintenance Media & Supplement Kit (100 ml)	30 + 100 ml
CMS-002A	1. Plating Media & Supplement Kit (45 ml) 2. Maintenance Media & Supplement Kit (200 ml)	45 + 200 ml

Hepatosight®-S | hiPSC-derived Hepatocytes

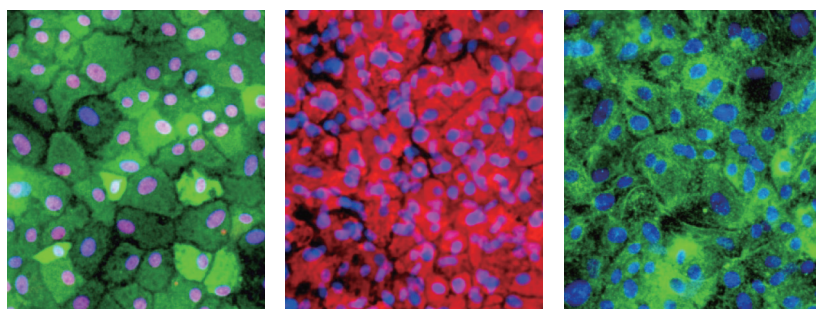
Product Specification

Cell Type	hiPSC-derived Hepatocytes
Organism	Human
Tissue Source	Fibroblast (reprogrammed in NEXEL)
Purity	> 95% Hepatocytes
Shipped	Frozen



Product Characteristics

- Human Liver Functional Model
- Accurate Human Toxicity
- Long-term 3D Organoid Culture

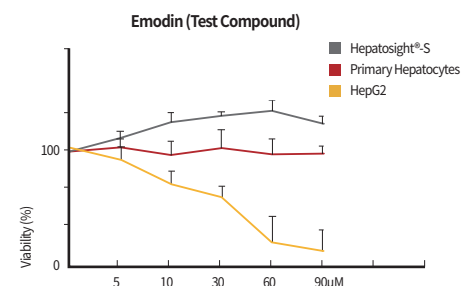
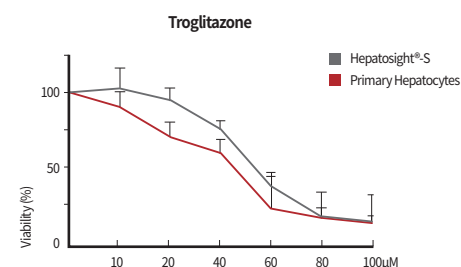


Alb HNF4α A1AT DAPI ASGPR1

Immunostaining

Alb : Albumin, HNF4α : Hepatocyte Nuclear Factor 4 alpha

A1AT : Alpha-1 Antitrypsin / ASGPR1 : Asialoglycoprotein Receptor 1



Correct Modeling of Human Hepatotoxicity

Correct Modeling of Human Hepatotoxicity

Product Catalog

Cat No.	Description	Volume
H-002	NEXEL Hepatosight®-S Kit 1. Hepatosight®-S, Cryopreserved hiPSC-derived Hepatocytes 2. Hepatosight®-S Media Kit (HM-002, 120 ml)	≥ 10 × 10 ⁶ Viable cells / Vial
HMS-001	Media (HM-001, 70 ml) Maintenance Supplement 1 (HS-001, 0.7 ml) Maintenance Supplement 2 (HS-002, 0.6 ml)	70 ml
HMS-002	Media (HM-002, 120 ml) Maintenance Supplement 1 (HS-003, 1.2 ml) Maintenance Supplement 2 (HS-004, 1.2 ml)	120 ml

Neurosight®-S | hiPSC-derived Neurons

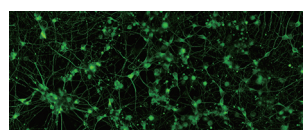
Product Specification

Cell Type	hiPSC-derived Neurons
Organism	Human
Tissue Source	Fibroblast (reprogrammed in NEXEL)
Purity	> 95% Neurons
Shipped	Frozen

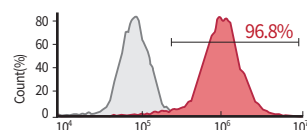


Product Specification

- Human Neuronal Electrophysiology Model
- Fast Neuronal Network Formation
- Long-term Maturation and Synchrony

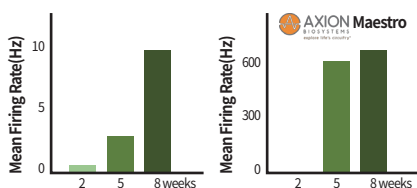


TUJ1

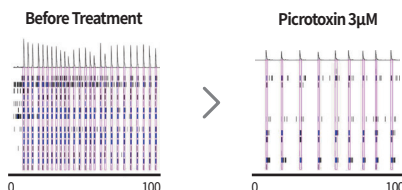


TUJ1-488

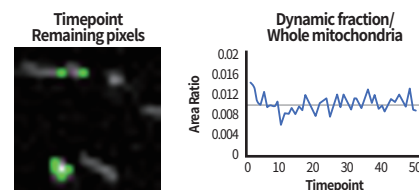
Pure Population of Cortical Neurons



Formation of Highly Mature Neuronal Networks



Seizure Liability Testing
HESI NeuTox Compound



Analysis of Mitochondrial Dynamics

Product Catalog

Cat No.	Description	Volume
N-001	NEXEL Neurosight®-S Kit, Small 1. Neurosight®-S, Cryopreserved hiPSC-derived Neurons 2. Select NMS-001 or NMS-003	≥ 2 × 10 ⁶ Viable cells / Vial
N-002	NEXEL Neurosight®-S Kit, Large 1. Neurosight®-S, Cryopreserved hiPSC-derived Neurons 2. Select NMS-002 or NMS-004	≥ 4 × 10 ⁶ Viable cells / Vial
NMS-001	Media & Maintenance Supplement Kit (50 ml)	50 ml
NMS-002	Media & Maintenance Supplement Kit (100 ml)	100 ml
NMS-003	EP Media & Supplement Kit (50 ml) Plating Media (20 ml) Maintenance Supplement (0.15 ml) * We recommend on MEA plates	20 + 50 ml
NMS-004	EP Media & Supplement Kit (100 ml) Plating Media (20 ml) Maintenance Supplement (0.25 ml) * We recommend on MEA plates	20 + 100 ml

We Make Human Cells



The innovation of iPSC-derived human cells

Specialists in iPSC Technology

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