

# Primary Normal Human Cells and Media

## In Vivo Relevance. In Vitro Results.

### Airway Epithelial Cells\*

SAEC – Small Airway Epithelial Cells (1 mm bronchiole)  
NHBE – Bronchial/Tracheal Epithelial Cells  
— SAGM™ Small Airway Epithelial Cell Growth Medium  
— BEGM® Bronchial Epithelial Cell Growth Medium  
— B-ALI™ and S-ALI™ Air-liquid Interface Medium

### Mammary Epithelial Cells

HMEC – Mammary Epithelial Cells HMEC test positive for cytokeratins 14 and 18, and negative for cytokeratin 19  
— MEGM® Mammary Epithelial Cell Growth Medium

### Endothelial Cells\*

Large vessels – Aorta, umbilical artery and vein, and coronary, iliac and pulmonary artery  
Small vessels – Dermal, cardiac, lung, single or pooled donors  
— EGM® or EGM® 2 Endothelial Media  
— EGM® 2MV Endothelial Media

### Fibroblasts

NHDF-Ad – Adult Dermal Fibroblasts  
AoAF – Aorta Adventitial Fibroblasts  
NHDF-Neo – Neonatal Dermal Fibroblasts  
NHLF – Lung Fibroblasts\*  
— FGM® 2 Fibroblast Growth Medium-2  
— FGM® 3 Fibroblast Growth Medium-3  
— SCGM™ Stromal Cell Growth Medium

### Keratinocytes\*

NHEK-Ad – Adult Epidermal Keratinocytes  
NHEK-Neo – Neonatal Epidermal Keratinocytes Cells from single or pooled donors  
— KGM® Gold Keratinocyte Growth Medium

### Melanocytes

NHEM-Neo – Neonatal Epidermal Melanocytes  
NHEM-Ad – Adult Epidermal Melanocytes  
— MGM® 4 Melanocyte Growth Medium-4  
(add ET-3 for adult melanocytes)

### Smooth Muscle Cells\*

Smooth Muscle Cells are obtained from the aorta, pulmonary artery, major bronchia, umbilical artery, coronary artery, prostate.  
— SmGM® 2 Smooth Muscle Growth Medium-2

### Mononuclear Cells

Mononuclear cells are isolated via density gradient separation from peripheral blood (PBMC), bone marrow.  
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### Renal Cells

HRE – Renal Epithelial Cells  
HRCE – Renal Cortical Epithelial Cells  
RPTEC – Renal Proximal Tubule Epithelial Cells\*

### Skeletal Muscle Cells

HSMM – Skeletal Muscle Myoblasts\*  
(post-gestational tissue, quadriceps or psoas)  
— SkGM® 2 Skeletal Muscle Cell Growth Medium-2

### Skeletal Cells

NHOS – Osteoblasts  
NHAC-kn – Articular Chondrocytes (knee)  
— OGM™ Osteoblast Growth Medium  
— OGM™ Differentiation SingleQuotes®  
— CGM™ Chondrocyte Growth Medium  
— CDM™ Chondrocyte Differentiation Medium

\*Diseased Cells also available

### Additional Media

— AGM™ Astrocyte Growth Media  
— PrEGM™ Prostate Epithelial Cell Growth Medium  
— RtEGM™ Retinal Pigment Epithelial Cell Growth Medium  
— SCGM™ Stromal Cell Growth Medium  
— SmGM® 2 Smooth Muscle Growth Medium-2

### Dental Pulp Stem Cells

Stem cells harvested from human third molars  
— DPSC Dental Pulp Stem Cell Growth Medium

### CD14<sup>+</sup> Monocytes

Monocytes are isolated from the peripheral blood of screened, healthy donors via CD14<sup>+</sup> immunomagnetic separation. 90% pure CD14<sup>+</sup> guarantee.  
— X-VIVO® 15 Serum-free Hematopoietic Cell Medium

### CD34<sup>+</sup> Cells

CD34<sup>+</sup> cells are available from bone marrow and cord blood, and are isolated via density gradient followed by immuno-magnetic separation. 90% pure CD34<sup>+</sup> guarantee.  
— X-VIVO® 10 Serum-free Hematopoietic Cell Medium

### Dendritic Cells

Dendritic cells are differentiated from isolated mononuclear cells by culturing with GM-CSF and IL-4 and are tested for expression of various markers, including CD11c<sup>+</sup> and CD86<sup>+</sup>.  
— LGM™ 3 Lymphocyte Growth Medium-3  
(serum-free medium for lymphocyte cell growth)  
— X-VIVO® 15 Serum-free Hematopoietic Cell Medium

### Peripheral Blood Mononuclear Cells (PBMCs)

PBMCs can be used to isolate and differentiate various different cell types, including T cells, monocytes, and dendritic cells.  
— X-VIVO® 15 Serum-free Hematopoietic Cell Medium  
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### T Cells

CD4<sup>+</sup> and CD8<sup>+</sup> T cells are isolated from peripheral blood via immunomagnetic separation. 90% pure CD4<sup>+</sup> guarantee.  
— X-VIVO® 15 Serum-free Hematopoietic Cell Medium

### Natural Killer (NK) Cells

NK cells are isolated from peripheral blood of normal donors via positive or negative immunomagnetic separation and tested for various markers, including CD56<sup>+</sup> and CD16<sup>+</sup>. 90% pure CD56<sup>+</sup> guarantee.  
— LGM™ 3 Lymphocyte Growth Medium-3  
(serum-free medium for lymphocyte cell growth)  
— X-VIVO® 15 Serum-free Hematopoietic Cell Medium

### Pancreatic Islets

Pancreatic Islets are made-to-order through Lonza's CellBio Service.

### Fresh Bone Marrow

Unprocessed human bone marrow is available from normal donors and can be used to isolate various cell types. Matched bone marrow and peripheral blood from the same donor are also available.

### Mesenchymal Stem Cells

Cells are cryopreserved at passage 2, express CD73, CD90, CD105, CD166 and CD44, but not CD14, CD19, CD34, CD45 and HLA-DR, and can successfully differentiate towards adipogenic, chondrogenic and osteogenic lineages  
— MSCGM™ Mesenchymal Stem Cell Growth Medium  
— hMSC Chondrogenic Differentiation Medium  
— hMSC Osteogenic Differentiation Medium  
— hMSC Adipogenic Differentiation Medium

### Hepatocytes

Purified hepatocytes are available fresh or cryopreserved. Cryopreserved cells are pre-qualified for plateability and suitability for metabolism studies.  
— HCM™ Hepatocyte Culture Medium  
— HMM Hepatocytes maintenance medium

### Preadipocyte Cells\*

Subcutaneous preadipocytes  
Visceral preadipocytes  
Matched donor samples are available  
— PGM™ 2 Preadipocyte Growth Medium-2

### Osteoclast Precursor Cells

Cells differentiate into mature osteoclasts and then stain positive for TRAP, resorb bone, and express the calcitonin receptor.  
— OCP Osteoclast Precursor Medium

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### Contact Us

North America  
Customer Service: +1 800 638 8174 (toll free)  
order.us@lonza.com  
Scientific Support: +1 800 521 0390 (toll free)  
scientific.support@lonza.com

Europe  
Customer Service: +32 87 321 611  
order.europe@lonza.com  
Scientific Support: +49 221 99199 400  
scientific.support.eu@lonza.com

International  
Contact your local Lonza distributor  
Customer Service: +1301 898 7025  
scientific.support@lonza.com

International Offices  
Australia +61 1300 657 508  
Belgium +32 87 321 611  
Brazil +55 11 4028 8000  
China +86 21 6302 8866  
France 0800 91 19 81 (toll free)  
Germany 0800 182 52 87 (toll free)

India +91 124 6052941  
Japan +81 3 6264 0660  
Luxemburg +32 87 321 611  
Singapore +65 6521 4379  
The Netherlands 0800 022 4525 (toll free)  
United Kingdom 0808 234 97 88 (toll free)

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