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provitro

member of Mex group



# catalogue 2024/25



catalogue 2024/2025

whole blood, leukopaks  
and blood cells

stem cells

primary cells

cell culture media,  
reagents and 3D matrices

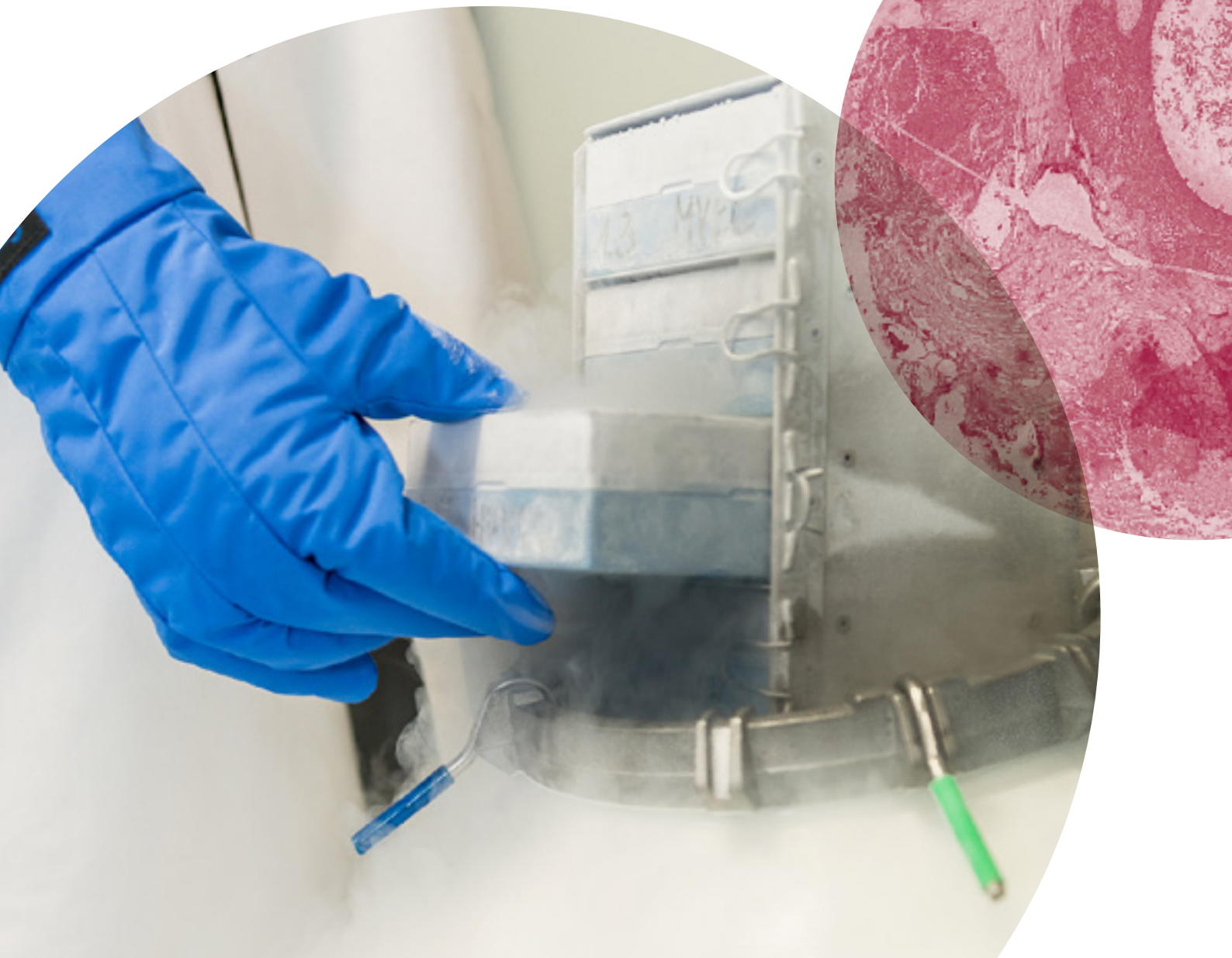
pathological and clinical  
biospecimens

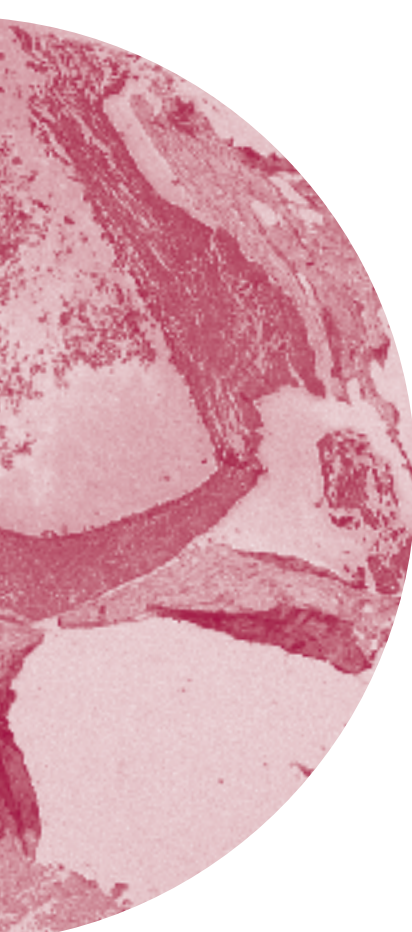
histological, molecular  
and bioassay services

# contents

whole blood, leukopaks and blood cells	4
stem cells	16
primary cells	20
cell culture media and 3D matrices	36
pathological and clinical biospecimens	68
histological, molecular and bioassay services	82
certificates and product information	94
ordering information	96
alphabetical product index	97
general standard terms and conditions	100

# whole blood, leukopaks and blood cells





Our whole blood products stand as a versatile resource, presenting an unadulterated representation of peripheral blood ideal for an array of research and development endeavors. Within our offerings, we furnish whole blood drawn from healthy donors with various preservation options available to suit specific research needs. Moreover, responding to specific research inquiries, we extend our services to include prospective collections of blood samples from individuals afflicted with various conditions upon request.

whole blood	7
leukopaks	8
peripheral blood mononuclear cells (PBMC)	9
specific subsets of PBMC (prospective)	11
immunogenicity and immunotoxicity assays	14

[\*← back to main contents\*](#)



### **Ethical integrity underpinning our life science solutions**

Ethical integrity serves as the backbone of our operations, guiding every facet of our endeavor within the life sciences realm. Whether delineating between stock and prospective products, navigating ethical considerations, obtaining informed consent (ICF), establishing plasma centers, or engaging with healthcare professionals, our unwavering commitment to ethical principles remains steadfast.

### **Endorsement by a prestigious institutional review board (IRB)**

Our affiliation with a renowned Institutional Review Board (IRB) underscores our dedication to upholding ethical standards and regulatory compliance. This independent body meticulously scrutinizes our research and manufacturing practices, ensuring they align with the highest ethical benchmarks. Approval from such a respected entity serves as validation of our steadfast commitment to safeguarding the rights, welfare, and safety of all individuals involved in our processes.

### **Transparency and accountability**

Transparency and accountability are integral to our ethos. We operate with full transparency, offering customers comprehensive insight into our processes and procedures. This transparency fosters confidence in the integrity of our products and the ethical principles guiding their development.

### **Building trust through ethical consistency**

At BIOMEX/provitro, we recognize that trust is paramount. We understand that trust is earned through unwavering adherence to ethical principles. When you choose our products, you're not only selecting high-quality goods but also aligning with a company that prioritizes ethics and integrity above all else. Your trust is our utmost priority, and we remain steadfast in upholding the highest ethical standards across all facets of our operations within the life sciences sector.



# whole blood

whole blood, leukopaks  
and blood cells

7

Our product line boasts a flexible range, accommodating projects of differing scopes and requirements, with volumes ranging from 9 ml to 450 ml. This diversity in volume options ensures that our offerings can cater to the varying needs and dimensions of our clientele's projects, fostering a seamless integration into their research and development initiatives.



Freshly collected blood samples

Prospective collection of whole blood of healthy donors*		
OFFER NO.	PRODUCT	SPECIFICATION
111 91101 009	Human whole blood, healthy donor	Fresh, 9 ml
111 91101 018	Human whole blood, healthy donor	Fresh, 18 ml
111 91101 027	Human whole blood, healthy donor	Fresh, 27 ml
111 91101 036	Human whole blood, healthy donor	Fresh, 36 ml
111 91101 045	Human whole blood, healthy donor	Fresh, 45 ml
111 91101 054	Human whole blood, healthy donor	Fresh, 54 ml
111 91101 063	Human whole blood, healthy donor	Fresh, 63 ml
111 91101 072	Human whole blood, healthy donor	Fresh, 72 ml
111 91101 081	Human whole blood, healthy donor	Fresh, 81 ml
111 91101 090	Human whole blood, healthy donor	Fresh, 90 ml
111 91101 100	Human whole blood, healthy donor	Fresh, 100 ml
111 91101 500	Human whole blood, healthy donor	Fresh, 450 ml

Prospective collection of whole blood of diseased donors*		
OFFER NO.	PRODUCT	SPECIFICATION
111 91201 999	Human whole blood, Serum, Plasma, diseased donor	Fresh
121 91201 999	Human whole blood, Serum, Plasma, diseased donor	Cryo

\*Donors are screened and tested negative for HIV 1/2, Hepatitis B and C. Additional tests can be ordered separately.

# leukopaks

Our highly cell concentrated Leukopak stands as a specialized product derived from leukapheresis procedures conducted with the Spectra Optia® apheresis system. This cutting-edge technology utilizes advanced centrifugal mechanisms to facilitate continuous blood flow, enabling the selective extraction of white blood cells from normal peripheral blood. These cells are then directed into a sterile collection bag supplemented with ACD-A anticoagulant. The resulting enriched product comprises a diverse array of blood components, including monocytes, lymphocytes, platelets, plasma, and erythrocytes.

Our offerings encompass Leukopaks sourced from our existing inventory, alongside the provision for prospective collections tailored to specific research inquiries. This versatile range ensures a breadth of options to suit a variety of research requirements, whether drawing from our readily available stock or arranging for custom collections based on unique project needs.

Stock collection of Leukopak*		
OFFER NO.	PRODUCT	SPECIFICATION
121 92100 025	Human Leukopak, healthy donor	Cryo, $2.5 \times 10^9$ cells/bag
121 92100 050	Human Leukopak, healthy donor	Cryo, $5 \times 10^9$ cells/bag
121 92100 100	Human Leukopak, healthy donor	Cryo, $10 \times 10^9$ cells/bag
121 92100 200	Human Leukopak, healthy donor	Cryo, $20 \times 10^9$ cells/bag
111 92100 025	Human Leukopak, healthy donor	Fresh, $2.5 \times 10^9$ cells/bag
111 92100 050	Human Leukopak, healthy donor	Fresh, $5 \times 10^9$ cells/bag
111 92100 100	Human Leukopak, healthy donor	Fresh, $10 \times 10^9$ cells/bag
111 92100 200	Human Leukopak, healthy donor	Fresh, $20 \times 10^9$ cells/bag

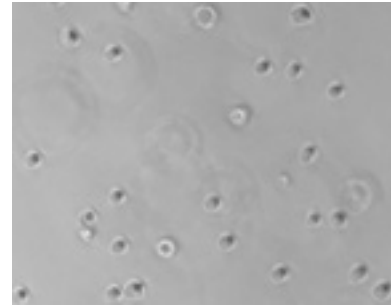
Prospective collection of Leukopak*		
OFFER#	PRODUCT	SPECIFICATION
121 92200 999	Human Leukopak, diseased donor	Cryo
111 92200 999	Human Leukopak, diseased donor	Fresh

\*Donors are screened and tested negative for HIV 1/2, Hepatitis B and C. Additional tests can be ordered separately.

# peripheral blood mononuclear cells (PBMC)

Human Peripheral Blood Mononuclear Cells (PBMCs) are utilized as source material for isolating lymphocytes (T cells, B cells and NK cells) and monocytes in research and across fields such as immunology, immuno-oncology, and cell and gene therapies. All PBMCs are isolated through Ficoll density gradient separation from freshly obtained leukapheresis ACD-A packs and directly cryopreserved.

Our offerings encompass distinct options tailored to meet diverse research requirements. These options include PBMCs sourced from our existing inventory, categorized into two groups, each offering unique features and application possibilities. Additionally, we provide PBMCs of diseased from prospective collections, available in both Cryo and fresh formats, ensuring flexibility and suitability for various research needs.



PBMC – Peripheral blood mononuclear cells

## Our offering of PBMC:

1. PBMC-standard includes basic donor information and serological tests. Additional optional information and tests can be provided for an extra fee.
2. PBMC-discovery includes donor information (e.g., smoking status, chronic diseases, allergies, medications), serological tests, mycoplasma/bacterial/fungal contamination, HLA Class I and II, FCGR3A Polymorphisms, pre-freeze hemato logical analyses, immunophenotyping post-thaw, T-cell activation test after PMA/ Ionomycin stimulation. In addition, matched plasma or serum are available from the same patient in 1ml cryopreserved aliquots.
3. PBMCs diseased are categorized based on disease types, including Inflammatory, Oncology, Neurology, and Autoimmune disease.

Stock collection of PBMC		
OFFER NO.	PRODUCT	SPECIFICATION
121 93101 010	Human PBMC, healthy donor, standard	Cryo, $10 \times 10^6$ cells/vial
121 93101 020	Human PBMC, healthy donor, standard	Cryo, $20 \times 10^6$ cells/vial
121 93101 040	Human PBMC, healthy donor, standard	Cryo, $40 \times 10^6$ cells/vial
121 93102 010	Human PBMC, healthy donor, discovery	Cryo, $10 \times 10^6$ cells/vial
121 93102 020	Human PBMC, healthy donor, discovery	Cryo, $20 \times 10^6$ cells/vial
121 93102 040	Human PBMC, healthy donor, discovery	Cryo, $40 \times 10^6$ cells/vial
239 10050	Human serum, PBMC matched donor	Cryo, 1 ml
239 20050	Human plasma, PBMC matched donor	Cryo, 1 ml

Prospective collection of PBMC*		
OFFER NO.	PRODUCT	SPECIFICATION
121 93101 050	Human PBMC, healthy donor, standard	Cryo, $50 \times 10^6$ cells/vial
121 93101 100	Human PBMC, healthy donor, standard	Cryo, $100 \times 10^6$ cells/vial
121 93200 999	Human PBMC, diseased** donor	Cryo
111 93103 999	Human PBMC, healthy donor	Fresh

\*PBMCs are batch-tested negative for bacteria and Mycoplasma via PCR.

\*\*PBMCs are categorized based on disease types, including Inflammatory, Oncology, Neurology, and Autoimmune disease.

# specific subsets of PBMC (prospective)

In the realm of research, efficiency is crucial for achieving productivity. Simplify cell isolation processes to allocate more time to driving scientific breakthroughs! At BIOMEX, we grasp the unique requirements of each application and are ready to support you in making customized decisions. With our premium products and prompt delivery, we are committed to expediting biomedical research, enhancing data integrity, and easing laboratory workloads. Our range includes various positively or negatively selected cell types sourced from peripheral blood, establishing us as the leading provider in mainland Europe.

In our Certificate of Analysis (CoA), we meticulously outline the viability of isolated cells, reinforcing our dedication to transparency and quality assurance.

## B cells

B cells have been isolated from mononuclear cells through either positive or negative selection using immunomagnetic cell separation techniques.

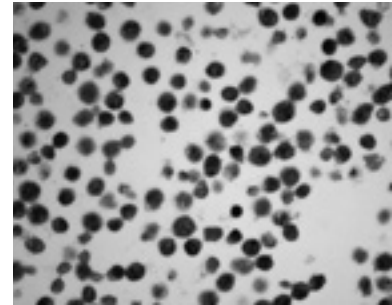
In positive selection, the targeted isolation of CD19+ B cells was performed, while in negative selection, other cell types were removed to obtain pure CD19+ B cells. These differentiated procedures provide our B-cell products with high specificity.

Derived from mononuclear cells, CD19+ B cells play a central role in the immune response by responding to potential threats through the release of antibodies specific to antigens such as bacteria and viruses. The expression of CD19+ facilitates the identification of these B-cells

## T cells

Isolated T cells, including CD3+ pan-T cells, CD4+ and CD8+ subgroups, have been obtained through immunomagnetic cell separation techniques employing positive or negative selection from mononuclear cells.

These differentiated procedures ensure the precise isolation of the intended T-cell groups. CD4+ T cells play a role in coordinating immune responses, while CD8+ T cells exert a cytotoxic function.



PBMC – Peripheral blood mononuclear cells



Taking a test sample

### NK cells

Natural Killer cells (NK cells) constitute a lymphocytic subset of the immune system and play a crucial role in immunological surveillance and host defense. Their significance spans across various areas such as bone marrow transplantation, cancer, pregnancy, autoimmune diseases, viral infections, and increasingly in adaptive immunity. The common identification of NK cells is achieved through the surface marker CD56. These cells are isolated using negative or positive selection through immunomagnetic cell separation procedures.

### Monocytes

CD14+ T cells, obtained from mononuclear cells, are isolated through either negative or positive selection using immunogenetic cell separation techniques. These cells play a crucial role in the immune response against infections and are valuable for the investigation and diagnosis of immune reactions, particularly in infections and inflammation.

Their ability to act as detectors for bacterial presence and respond to lipopolysaccharides (LPS) underscores their significance in combating infections through phagocytosis, as well as in maintaining immune balance and defending against microbial threats.

Prospective collection of specific subsets of PBMC*		
OFFER NO.	PRODUCT	SPECIFICATION
121 94101 010	Human CD19+ B Cells (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94101 010	Human CD19+ B cells (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94102 010	Human CD19+ B cells (pos. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94103 010	Human CD14+ Monocytes (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94104 010	Human CD14+ Monocytes (pos. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94105 010	Human CD56+ NK cells (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94106 010	Human CD56+ NK cells (pos. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94107 010	Human Pan-T cells (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94108 010	Human Pan-T cells (pos. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94109 010	Human CD4+ T cells (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94110 010	Human CD4+ T cells (pos. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94111 010	Human CD8+ T cells (neg. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94112 010	Human CD8+ T cells (pos. selection), healthy donor	Cryo, 10 × 10 <sup>6</sup> cells/vial
121 94113 010	Human PBMC, healthy donor, ImmunoSafe-HLA1	Cryo, 10 Vials PBMCs/10 Patients
121 94114 010	Human PBMC, healthy donor, ImmunoSafe-HLA2	Cryo, 10 Vials PBMCs/10 Patients

\*PBMCs are batch-tested negative for bacteria and Mycoplasma via PCR.

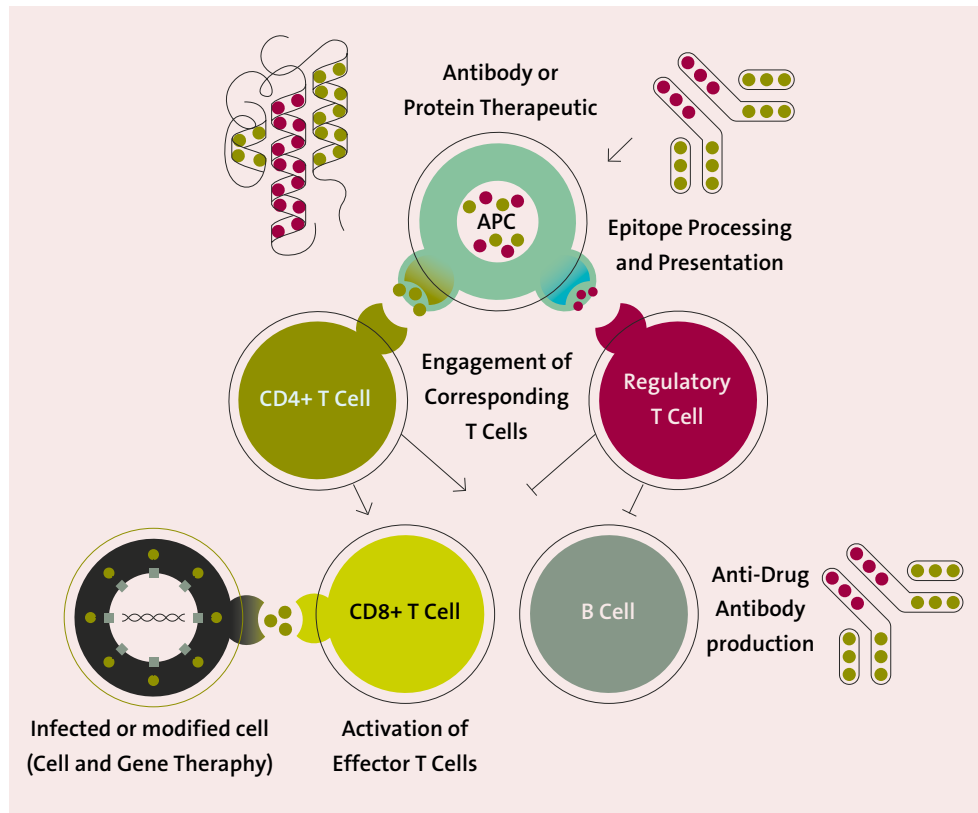


# immunogenicity and immunotoxicity assays

Our ImmunoSafe-HLA I and ImmunoSafe-HLA II panels are meticulously designed to enhance the predictivity of your preclinical assays. With 10 HLA Class I- or HLA Class II-matched donors, these panels can be tailored to suit your specific assay requirements. By providing a comprehensive resource to mimic diverse immunological responses, they empower researchers to achieve more accurate and relevant experimental outcomes. Their versatility and adaptability ensure seamless integration into existing research protocols, making them invaluable tools for deciphering the complexities of the immune system and driving groundbreaking discoveries in biomedical research.

Prospective collection of specific subsets of PBMC*		
OFFER NO.	PRODUCT	SPECIFICATION
133 94113 010	Human PBMC, healthy donor, ImmunoSafe-HLA1	Cryo, $10 \times 10^6$ cells/vial
133 94113 020	Human PBMC, healthy donor, ImmunoSafe-HLA1	Cryo, $20 \times 10^6$ cells/vial
134 94114 010	Human PBMC, healthy donor, ImmunoSafe-HLA2	Cryo, $10 \times 10^6$ cells/vial
134 94114 020	Human PBMC, healthy donor, ImmunoSafe-HLA2	Cryo, $20 \times 10^6$ cells/vial

\*PBMCs are batch-tested negative for bacteria and Mycoplasma via PCR.



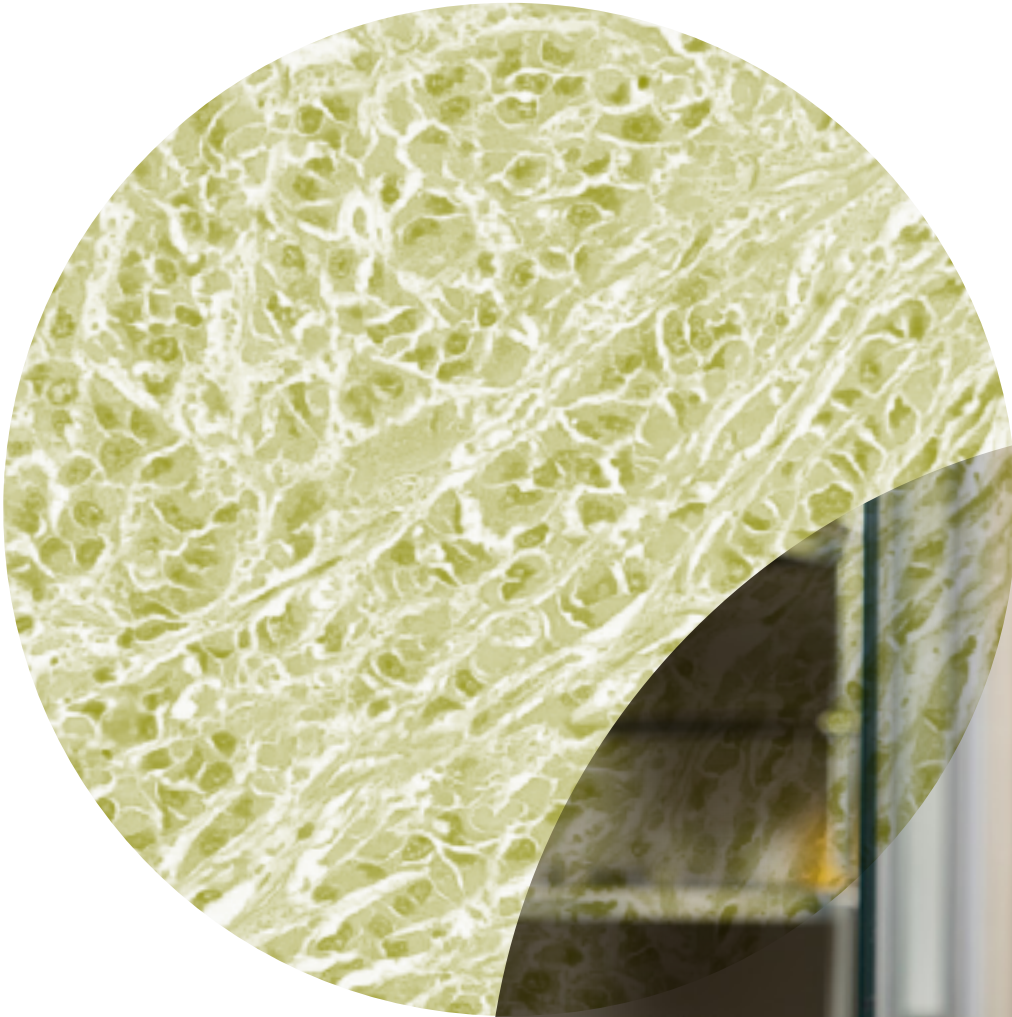
The evaluation of the immunogenicity risk of novel protein therapeutics is pivotal for guaranteeing their safety and efficacy, and it is subject to several challenges including variations in immunogenic response between different populations, the change in the immunogenicity of vaccines with age, and the general unsuitability of animal models in predicting immune responses in humans.

Immunogenicity may be a desired (wanted) or undesired (unwanted) effect in novel protein therapeutics:

- **Wanted Immunogenicity** is a central aspect of vaccine efficacy, as the injection of the desired antigen stimulates an immune response against it, thus creating a protection against the active pathogen
- **Unwanted immunogenicity** constitutes the undesired immune response against protein therapeutics, often resulting in the production of anti-drug-antibodies (ADAs) with inactivating or neutralizing properties against the therapeutic agent.

Because of the potential unwanted effects of immunogenicity, regulators expect that developers of non-vaccine biological therapeutics employ validated immunogenicity assays to detect and characterize the risk of ADAs formation in the clinical development phases.

# stem cells



Our portfolio features a diverse range of human stem cells, each uniquely sourced and characterized for various scientific and medical applications. These stem cells are crucial for research and therapeutic purposes, contributing to advancements in hematopoiesis, immune response modulation, and regenerative medicine. We offer the following stem cell types, all available in cryopreserved form to ensure maximum viability and convenience for your research and clinical needs.



Human hematopoietic stem cells from cord blood	18
Human mesenchymal stem cells from bone marrow	18
Human mesenchymal stem cells from dental pulpa	18
Human mesenchymal stem cells from adipose tissue	19

[← back to main contents](#)

**Human hematopoietic stem cells from cord blood**

CD34+ stem and progenitor cells from umbilical cord blood are crucial for hematopoiesis and modulation of the immune response. These unique cells contribute to the formation of various blood cells, including immune effectors such as natural killer cells and cytotoxic T-cells, shaping both the adaptive and functional aspects of the immune system.

**Human mesenchymal stem cells from bone marrow**

Bone Marrow CD34+ cells, enriched with CD34+ markers, are pivotal for hematopoiesis and immune modulation. These unique cells play a crucial role in hematopoietic stem cell transplantation and immune reconstitution. They contribute to the formation of various blood cell lineages, including immune effectors such as natural killer cells and cytotoxic T-cells, shaping both the adaptive and functional aspects of the immune system.

**Human mesenchymal stem cells from dental pulp**

Dental Pulp Stem Cells (DPSCs) are primarily sourced from the pulp tissues of deciduous teeth, primary incisors, and permanent third molars. The dental pulp, especially from third molars, is noted for its rich reservoir of stem cells. DPSCs derived from third molars express key pluripotency-associated transcription factors including oct4, sox2, klf4, nanog, and c-myc. Flow cytometry analysis confirms DPSCs are positive for mesenchymal markers CD73, CD90, CD105, and CD166, while negative for hematopoietic markers CD34, CD45, and CD133. DPSCs exhibit versatile differentiation potential under specific culture conditions, capable of forming osteogenic, adipogenic, and neurogenic cell types, and demonstrating angiogenic activity in Matrigel® assays

### Human mesenchymal stem cells from adipose tissue

Human Adipose-Derived Stem Cells (ADSCs) are extracted from human lipoaspirate tissue obtained during elective liposuction surgeries. These cells are available from both healthy donors and patients. ADSCs exhibit phenotypic and functional characteristics similar to bone marrow-derived mesenchymal stem cells.

Extensive research has been conducted on ADSCs, referred to by various terms such as preadipocytes, adipose-derived mesenchymal stem cells (AD-MSCs), adipose MSCs (AMSCs), adipose-derived adult stem (ADAS) cells, and adipose stromal/stem cells (ASCs). Normal human ADSCs have demonstrated the ability to differentiate into multiple lineages, including chondrogenic, osteogenic, adipogenic, and neural.

ADSCs have been widely utilized in studies focused on stem cell differentiation, regenerative medicine, and cell therapy.



Cell confluence assessment

Stock collection of Stem Cells*		
OFFER NO.	PRODUCT	SPECIFICATION
121 96101 005	Human Stem Cells from Cord Blood, healthy donor	Cryo, $5 \times 10^5$ cells/vial
121 96101 005	Human Hematopoietic stem cells from Cord Blood, healthy donor	Cryo, $5 \times 10^5$ cells/vial
121 96101 010	Human Hematopoietic stem cells from Cord Blood, healthy donor	Cryo, $1 \times 10^6$ cells/vial
121 96102 005	Human mesenchymal stem cells from Bone Marrow, healthy donor	Cryo, $5 \times 10^5$ cells/vial
121 96102 010	Human mesenchymal stem cells from Bone Marrow, healthy donor	Cryo, $1 \times 10^6$ cells/vial
121 96103 005	Human mesenchymal stem cells from Dental Pulpa, healthy donor	Cryo, $5 \times 10^5$ cells/vial
121 96103 010	Human mesenchymal stem cells from Dental Pulpa, healthy donor	Cryo, $1 \times 10^6$ cells/vial
121 96106 005	Human mesenchymal stem cells from Adipose Tissue, healthy donor	Cryo, $5 \times 10^5$ cells/vial
121 96106 010	Human mesenchymal stem cells from Adipose Tissue, healthy donor	Cryo, $1 \times 10^6$ cells/vial

Prospective collection of Stem Cells*		
OFFER NO.	PRODUCT	SPECIFICATION
121 96100 999	Human mesenchymal stem cells from Bone Marrow, diseased donor	Cryo

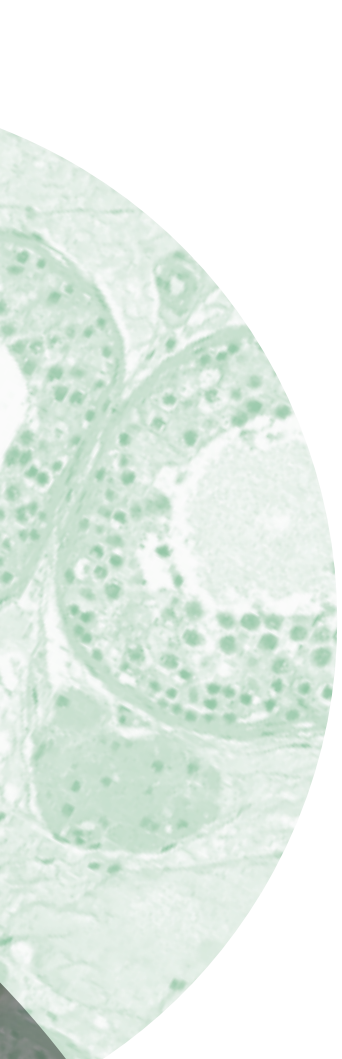
\*stem cells are batch-tested negative for bacteria and Mycoplasma via PCR.



# primary cells







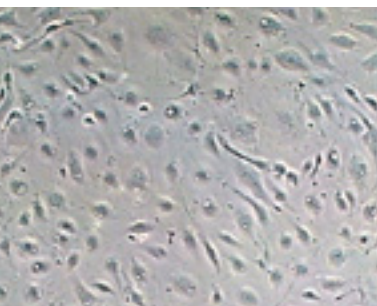
Each unit (vital = proliferating flask, or cryo = cryopreserved) contains more than 500,000 cells. Each cell strain is performance tested by extensive growth assays and inspection of cell morphology. Provitro guarantees a minimum of 10 population doublings of most normal human cell culture. Cell tests are negative for HIV-1 DNA, hepatitis B DNA, hepatitis C DNA, mycoplasma, bacteria, yeast and fungi. Provitro guarantees the homogeneity of each cell type according to cell type-specific test markers. Each unit comes with a certificate specifying the results of quality control for this cell culture.

human endothelial cells	22
human chondrocytes	24
human osteoblasts	25
human fibroblasts	26
human keratinocytes	27
human melanocytes	28
human myocytes	29
human epithelial cells	31
cell culture services	33
ScienCell products	34



[← back to main contents](#)

# human endothelial cells



HMVEC-Da – Human microvascular endothelial cells, dermis, adult

Endothelium is the cover term to identify the blood-oriented cells in the innermost layer of the vascular wall (intima). Functioning as physiological barrier to tissue, the CD31- and vWF-positive cells express nitrogen oxide (NO) which plays a role in regulating the tonus of the vascular musculature. Damage to the endothelial cell layer has been assumed to be possibly a causative factor in the development of arteriosclerosis. Endothelium plays an equally important role in inflammatory processes and may be locally activated by various endogenous or microbial substances.

## Culture media

Provitro's culture media are designed to meeting various needs of our customers. Culture media, therefore, are provided in different combinations of basal media and supplements:

- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

Another type of media variation concerns the serum type used as supplement:

In the case of human cell types, the culture media may be supplemented either with foetal calf serum (FCS) or human serum of AB blood group (HuS). The whole range of culture media provided by provitro will be found in the chapter »culture media« of this catalogue.

Human endothelial cells derived from umbilical blood vessels				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0111	HUVEC	Human umbilical vein endothelial cells	Vital, $5 \times 10^5$ cells/flask	→
121 0111	HUVEC	Human umbilical vein endothelial cells	Cryo, $5 \times 10^5$ cells/vial	→
111 0112	HUAEC	Human umbilical artery endothelial cells	Vital, $5 \times 10^5$ cells/flask	→
121 0112	HUAEC	Human umbilical artery endothelial cells	Cryo, $5 \times 10^5$ cells/vial	→
111 0113	HUVEC-p	Human umbilical vein endothelial cells, pooled	Vital, $5 \times 10^5$ cells/flask	→
121 0113	HUVEC-p	Human umbilical vein endothelial cells, pooled	Cryo, $5 \times 10^5$ cells/vial	→

## Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0001	Endothelial cell proliferation medium, FCS	→
201 1101	Endothelial cell growth medium, advanced, FCS	→
204 0002	Passage kit 2	→

Human endothelial cells derived from adult blood vessels				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0121	HSVEC	Human saphenous vein endothelial cells	Vital, $5 \times 10^5$ cells/flask	→
121 0121	HSVEC	Human saphenous vein endothelial cells	Cryo, $5 \times 10^5$ cells/vial	→
111 0131	HCAEC	Human coronary artery endothelial cells	Vital, $5 \times 10^5$ cells/flask	→
121 0131	HCAEC	Human coronary artery endothelial cells	Cryo, $5 \times 10^5$ cells/vial	→
111 0132	HPAEC	Human pulmonary artery endothelial cells	Vital, $5 \times 10^5$ cells/flask	→
121 0132	HPAEC	Human pulmonary artery endothelial cells	Cryo, $5 \times 10^5$ cells/vial	→
111 0151	HAOEC	Human aortic endothelial cells	Vital, $5 \times 10^5$ cells/flask	→
121 0151	HAOEC	Human aortic endothelial cells	Cryo, $5 \times 10^5$ cells/vial	→

#### Recommended standard culture media/subculturing system

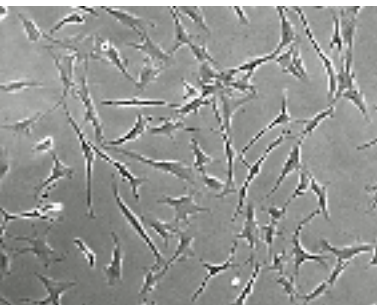
OFFER NO.	PRODUCT	PDF
201 0001	Endothelial cell proliferation medium, FCS	→
201 1101	Endothelial cell growth medium, advanced, FCS	→
204 0002	Passage kit 2	→

Human microvascular endothelial cells				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0141	HMVEC-F	Human microvascular endothelial cells, foreskin	Vital, $5 \times 10^5$ cells/flask	→
121 0141	HMVEC-F	Human microvascular endothelial cells, foreskin	Cryo, $5 \times 10^5$ cells/vial	→
111 0142	HMVEC-Dj	Human microvascular endothelial cells, dermis, juvenile	Vital, $5 \times 10^5$ cells/flask	→
121 0142	HMVEC-Dj	Human microvascular endothelial cells, dermis, juvenile	Cryo, $5 \times 10^5$ cells/vial	→
111 0143	HMVEC-Da	Human microvascular endothelial cells, dermis, adult	Vital, $5 \times 10^5$ cells/flask	→
121 0143	HMVEC-Da	Human microvascular endothelial cells, dermis, adult	Cryo, $5 \times 10^5$ cells/vial	→
111 0144	HMVEC-L	Human microvascular endothelial cells, lung	Vital, $5 \times 10^5$ cells/flask	→
121 0144	HMVEC-L	Human microvascular endothelial cells, lung	Cryo, $5 \times 10^5$ cells/vial	→

#### Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0102	Microvascular endothelial cell growth medium, FCS	→
201 1102	Microvascular endothelial cell growth medium, advanced, FCS	→
204 0002	Passage kit 2	→

# human chondrocytes



HCHON – Human chondrocytes

A chondrocyte (also known by the name of cartilage cell) is a cell originating from chondroblasts and located in cartilaginous tissue. Chondrocytes produce the extracellular matrix of cartilaginous tissue. Their high synthetic performance is attributable to an advanced Golgi apparatus and plenty of rough endoplasmic reticulum. Their cellular structure is maintained by vimentin filaments of reticular arrangement within the cytoplasm. Chondrocytes are singularly scattered in cartilage cavities, with cartilage height being delimited from surrounding tissue by collagen fibres (Type II). Blood supply to chondrocytes is through the perichondrium and synovial fluid. In regenerative medicine, chondrocyte cultures are fixed on carrier material and are used for regeneration of cartilage.

## Culture media

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- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

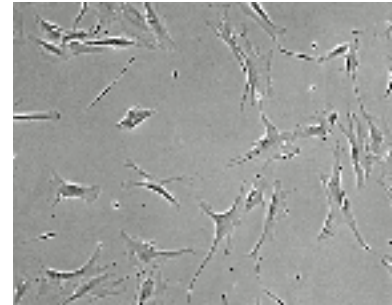
Another type of media variation concerns the serum type used as supplement: In the case of human cell types, the culture media may be supplemented either with foetal calf serum (FCS) or human serum of AB blood group (HuS). The whole range of culture media provided by provitro will be found in the chapter »culture media« of this catalogue.

Human chondrocytes				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0211	HCHON	Human chondrocytes	Vital, $5 \times 10^5$ cells/flask	→
121 0211	HCHON	Human chondrocytes	Cryo, $5 \times 10^5$ cells/vial	→

## Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0201	Chondrocyte growth medium, FCS	→
201 1201	Chondrocyte growth medium, advanced, FCS	→
204 0002	Passage kit 2	→

Osteoblasts develop from undifferentiated mesenchymal cells or embryonic connective tissue cells and are responsible for osteogenesis by getting deposited onto bones like dermal layers thus providing the basis for new bone substance, i.e. bone matrix. In this process, they tend to undergo change to a framework of osteocytes which are no longer divisible, with that framework being gradually mineralised and filled up with calcium. Osteoclasts are antagonists to osteoblasts.



HOB – Human osteoblasts

## Culture media

Provitro's culture media are designed to meeting various needs of our customers. Culture media, therefore, are provided in different combinations of basal media and supplements:

- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

Another type of media variation concerns the serum type used as supplement:

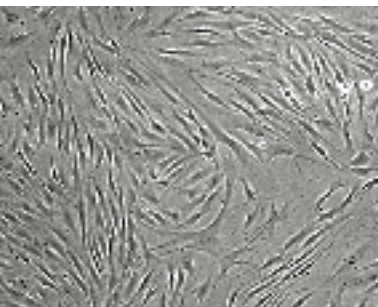
In the case of human cell types, the culture media may be supplemented either with foetal calf serum (FCS) or human serum of AB blood group (HuS). The whole range of culture media provided by provitro will be found in the chapter »culture media« of this catalogue.

Human osteoblasts				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0311	HOB	Human osteoblasts	Vital, $5 \times 10^5$ cells/flask	→
121 0311	HOB	Human osteoblasts	Cryo, $5 \times 10^5$ cells/vial	→

## Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0301	Osteoblast growth medium, FCS	→
201 1301	Osteoblast growth medium, advanced, FCS	→
204 0002	Passage kit 2	→

# human fibroblasts



HFIB – Human fibroblasts

Fibroblast is the cover term for cells which are of mesenchymal origin and are located in connective tissue. They play an important role in the synthesis of intercellular substance, extracellular matrix. Collagen is one of the major fibroblast products and, together with contemporaneously formed proteoglykanes, provides for enhanced strength of the extracellular matrix. Damage to tissue is capable of stimulating proliferation of fibroblasts and increasing discharge of cytokines which have a positive impact on repair of such damage.

## Culture media

Provitro's culture media are designed to meeting various needs of our customers. Culture media, therefore, are provided in different combinations of basal media and supplements:

- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

Another type of media variation concerns the serum type used as supplement:

In the case of human cell types, the culture media may be supplemented either with foetal calf serum (FCS) or human serum of AB blood group (HuS). The whole range of culture media provided by provitro will be found in the chapter »culture media« of this catalogue.

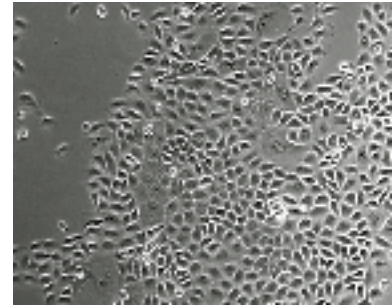
Human fibroblasts				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0411	HFIB-D	Human fibroblasts, dermis	Vital, $5 \times 10^5$ cells/flask	→
121 0411	HFIB-D	Human fibroblasts, dermis	Cryo, $5 \times 10^5$ cells/vial	→
111 0412	HFIB-G	Human fibroblasts, gingiva	Vital, $5 \times 10^5$ cells/flask	→
121 0412	HFIB-G	Human fibroblasts, gingiva	Cryo, $5 \times 10^5$ cells/vial	→

## Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0401	Fibroblast growth medium, FCS	→
203 0401	Defined fibroblast maintenance medium, serum-free	→
204 0002	Passage kit 2	→

# human keratinocytes

Primary epidermal keratinocytes not only build a physical barrier between organism and environment but also contribute to qualitative and quantitative regulation of dermally initiated immune response. Scientific research potentials include wide-ranging areas. The cosmetic industry, wound healing, skin replacement as well as studies into absorption of environmental substances by the human organism are just some of them.



HKER – Human keratinocytes

## Culture media

Provitro's culture media are designed to meeting various needs of our customers. Culture media, therefore, are provided in different combinations of basal media and supplements:

- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

Human keratinocytes				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0512	HKER-D	Human keratinocytes, dermis	Vital, $5 \times 10^5$ cells/flask	→
121 0512	HKER-D	Human keratinocytes, dermis	Cryo, $5 \times 10^5$ cells/vial	→
111 0511	HKER-F	Human keratinocytes, foreskin	Vital, $5 \times 10^5$ cells/flask	→
121 0511	HKER-F	Human keratinocytes, foreskin	Cryo, $5 \times 10^5$ cells/vial	→

## Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
203 0501	Keratinocyte growth medium, serum-free	→
204 0002	Passage kit 2	→



# human melanocytes



HMEF – Human melanocytes

Melanocytes are dendritic cells of neuro-ectodermal origin within which melanin is produced of tyrosine. The latter is passed to surrounding keratinocytes in the form of so-called melanosomes. Melanin provides for effective protection of skin against ultraviolet radiation. Melanin production is regulated through both UV radiation and melanocyte-stimulating hormone (MSH). Increased amounts of MSH, for example, are produced in concomitance with Addison's disease, which grows manifest by intensified brownish discoloration of skin (tanning). An important role is played by melanocytes or melanocyte precursors in the following diseases: vitiligo (or white-spot disease), melanoma, dysplastic naevus, lentigo, melasma, BK-mole syndrome and albinism.

## Culture media

Provitro's culture media are designed to meeting various needs of our customers. Culture media, therefore, are provided in different combinations of basal media and supplements:

- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

Human melanocytes				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0522	HMEF-F	Human melanocytes, foreskin	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0522	HMEF-F	Human melanocytes, foreskin	Cryo, 5×10 <sup>5</sup> cells/vial	→

## Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
203 0502	Melanocyte growth medium	→
204 0002	Passage kit 2	→

Unstriated (smooth) musculature includes contractile tissue of many hollow organs, blood vessels, lymphatic vessels and other structures in the human body. It differs from striated muscles, in that it is not subject to voluntary control. Actin, myosin and intermediary filaments of the desmin group (desmin, vimentin) are its predominant filaments. Smooth muscle cells are capable of synthesising collagen and other components of the extracellular matrix, such as proteoglycans, elastin and laminin, and are probably involved in electromechanical coupling.

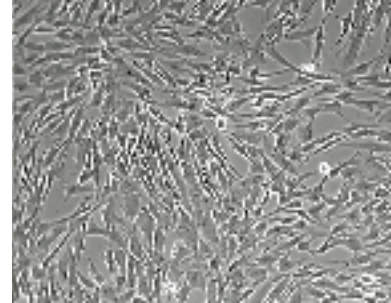
## Culture media

Provitro's culture media are designed to meeting various needs of our customers. Culture media, therefore, are provided in different combinations of basal media and supplements:

- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version**

Another type of media variation concerns the serum type used as supplement:

In the case of human cell types, the culture media may be supplemented either with foetal calf serum (FSC) or human serum of AB blood group (HuS). The whole range of culture media provided by provitro will be found in the chapter »culture media« of this catalogue.



HTSMC – Human tracheal smooth muscle cells

Human smooth muscle cells				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0611	HUASMC	Human umbilical artery smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0611	HUASMC	Human umbilical artery smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0612	HCASMC	Human coronary artery smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0612	HCASMC	Human coronary artery smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0613	HPASMC	Human pulmonary artery smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0613	HPASMC	Human pulmonary artery smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0614	HAOSMC	Human aortic smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0614	HAOSMC	Human aortic smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0631	HUSMC	Human urothelial smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0631	HUSMC	Human urothelial smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0632	HBSMC	Human bronchial smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0632	HBSMC	Human bronchial smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0633	HTSMC	Human tracheal smooth muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0633	HTSMC	Human tracheal smooth muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→

Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0601	Smooth muscle cell growth medium, FCS	→
204 0002	Passage kit 2	→

Human skeletal muscles				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0691	HSKMC	Human skeletal muscle cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0691	HSKMC	Human skeletal muscle cells	Cryo, 5×10 <sup>5</sup> cells/vial	→

Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
201 0602	Skeletal muscle cell growth medium, FCS	→
203 0603	Skeletal muscle cell differentiation medium, serum-free	→
204 0002	Passage kit 2	→

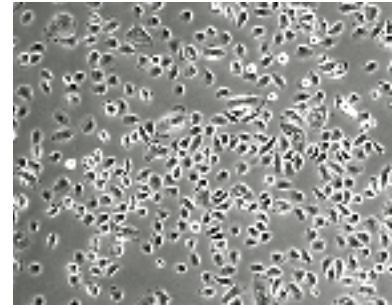
# human epithelial cells

Epithelial cells form the cover of all internal and exterior body surfaces. They are positioned in close density and are characterised by plenty of cellular contacts. They do not contain blood vessels. Their polarity is another property which all of them have in common. They have an outer apical surface which is oriented to the exterior (e.g. of skin) or to the lumen (e.g. of intestine or glands) and a basal surface connected through basal lamina to the tissue layers beneath. The polarity of epithelial cells is characterised by structural and functional differences between their apical and basal membranes.

## Culture media

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- **Culture media with one single premix of all supplements attached**
- **Culture media with individual vials for each single supplement attached, i.e. as kit version.**



HSAEPC – Human small airway epithelial cells

Human airway epithelial cells				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0711	HNEPC	Human nasal epithelial cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0711	HNEPC	Human nasal epithelial cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0712	HBEP	Human bronchial epithelial cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0712	HBEP	Human bronchial epithelial cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0713	HTEPC	Human tracheal epithelial cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0713	HTEPC	Human tracheal epithelial cells	Cryo, 5×10 <sup>5</sup> cells/vial	→
111 0714	HSAEPC	Human small airway epithelial cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0714	HSAEPC	Human small airway epithelial cells	Cryo, 5×10 <sup>5</sup> cells/vial	→

#### Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
203 0701	Airway epithelial cell growth medium, serum-free	→
204 0004	Passage kit 4	→

Human urothel epithelial cells:				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0721	HUEPC	Human urothelial epithelial cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0721	HUEPC	Human urothelial epithelial cells	Cryo, 5×10 <sup>5</sup> cells/vial	→

#### Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
203 0702	Urothel epithelial cell growth medium, serum-free	→
204 0004	Passage kit 4	→

Human mammary epithelial cells:				
OFFER NO.	PRODUCT	DESCRIPTION	SPECIFICATION	PDF
111 0731	HMEPC	Human mammary epithelial cells	Vital, 5×10 <sup>5</sup> cells/flask	→
121 0731	HMEPC	Human mammary epithelial cells	Cryo, 5×10 <sup>5</sup> cells/vial	→

#### Recommended standard culture media/subculturing system

OFFER NO.	PRODUCT	PDF
203 0703	Mammary epithelial cell growth medium, serum-free	→
204 0004	Passage kit 4	→

## Customised cell isolation

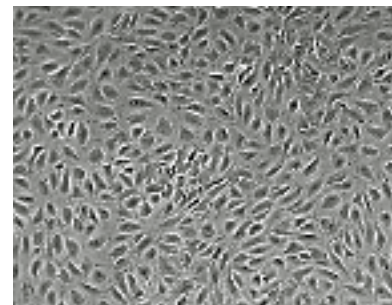
Provitro provides customised isolation of primary cells from tissue supplied by the customer. Included are not only standard cell types listed in this catalogue but other cell types as well. Please, contact us for a quotation in conformity with your specific needs. Should certain desired cell types not be included in our standard programme, we shall be glad to perform the first test trial of cell isolation free of charge.

## Cell culture test of new/toxic substances on primary cells and defined cell lines, respectively

Cytotoxicity testing is based on the general assumption that any substance, depending on its concentration, may have toxic effects on human cells. The test concerned will define and identify basal cytotoxicity, independent of metabolic effects. The test system may be used to check all aqueous or water-soluble samples as well as eluates of solids for their toxicity on human cells.

## Individual training course on cell culture methods

Provitro offers specialised training courses for techno-scientific staff and thus is prepared to transfer its proprietary experience with regard to cell culture systems. Provided is basic theoretical knowledge together with an opportunity to obtain practical skills in isolating and maintaining cell cultures. We also provide tuition in maintaining cell and tissue cultures in our perfusion culture systems, PCS<sup>3c</sup>, TCS<sup>2c</sup> and FCS<sup>1c</sup>.



HPAEC – Human pulmonary artery endothelial cells

Customised cell culture services	
OFFER NO.	PRODUCT
901 0101	Customised cell isolation of primary cells
901 0201	Cell culture test of new/toxic substances on primary cells
901 0202	Cell culture test of new/toxic substances on defined cell lines
901 0203	Establishing of pellet culture, induction of cell differentiation and FFPE preservation
901 0205	Preparation of FFPE blocks from formalin-fixed cell pellets
901 0901	Individual training course on cell culture methods, 1 day, first person
901 0911	Individual training course on cell culture methods, 1 day, accompanying person
905 0601	Final report including detailed protocol and representative photos

# ScienCell products



Provitro is part of ScienCell's team of sales specialists around the world who are dedicated to providing you with the best service. Provitro is listed as official distributor for ScienCell products. ScienCell Research Laboratories (ScienCell) is a biotechnology company whose mission is the research and development of cell and cell-related products for experimental use. ScienCell provides a variety of high quality normal human and animal cells, cell culture media and reagents, medium supplements, cell-derived RNA, cDNA and proteins for the research community. The Scientists at ScienCell are studying and developing cell therapeutic strategies to significantly improve the quality of life for patients with degenerative diseases. Established in 1999, ScienCell is based in San Diego, California.

**To get detailed order and pricing information please contact us by phone +49.30.450 578 358 or mail [sales@provitro.de](mailto:sales@provitro.de).**



ScienCell provides a variety of high quality normal human and animal cells, cell culture media and reagents, gene analysis tools, cell-derived molecular biology products, cell-based assay kits, and stem cell products for the research community:

- Human neural system
- Human dermal system
- Human lymphatic system
- Human adipose-derived cells
- Human alimentary system
- Human endocrine system
- Human respiratory system
- Human musculoskeletal system
- Human renal system
- Human hepatic system
- Human cardiovascular system
- Human ocular system
- Human male reproductive system
- Human female reproductive system
- Human umbilical cord-derived cells
- Miscellaneous stem cells
- Miscellaneous mammalian cells
- Reagents of cell culture
- Miscellaneous assays and kits
- 3D cell culture
- GeneQuery™
- Cytokines, chemokines, growth factors
- ELISA Kits

→ The detailed product list appears in the appendix to the catalog and can be accessed directly via this link.



cell culture  
media and 3D  
matrices



Provitro developed its culture media as unit assembly systems which contain supplements specific of each cell type. Therefore, you can get our media as:

- defined basal media without any growth factors, mitogens or proteins
- culture media with one single premix of all supplements
- culture media with individual vials for each single supplement as kit version

In order to give you the opportunity to work very closely to the in vivo situation, we created an additional human medium version for all low serum containing media supplemented with human serum of AB blood group (HuS).

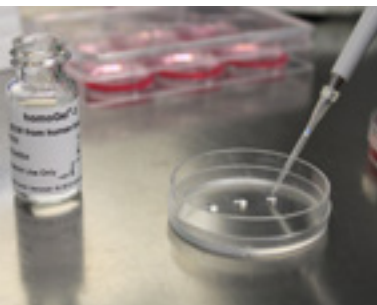
The FCS tests negative for mycoplasma, bacterial L-forms and virus contamination. HuS has shown to be free from mycoplasma, Hbs antigen and antibodies to HCV, HIV-1 and HIV-2.

homoGel®	38
our cell growth kits	40
our media label	39
cell culture media	42
reagents for cell culture handling	63
cytokines, chemokines, growth factors	64

[← back to main contents](#)

# homoGel®

## a human-derived ECM



Pipetting homoGel® aliquots

homoGel® is an innovative, native human-derived extracellular matrix (ECM) that sets a new standard for biomedical research and tissue engineering. Designed to address the limitations of traditional mouse-derived scaffolds like Matrigel®, homoGel® offers unparalleled biological relevance, consistency, and ethical alignment, making it the ideal choice for researchers focused on developing accurate, human-specific tissue models.

### Key Features and Benefits

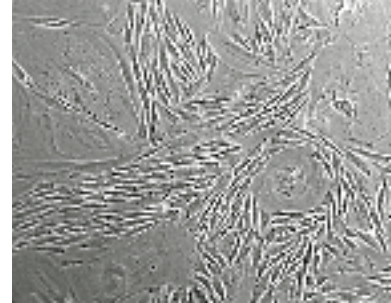
- 1. Human Specificity:** homoGel® is derived from native human tissues, providing the precise biochemical and structural support necessary for human cells. This ensures that tissue models closely mimic the natural human environment, leading to more reliable and predictive outcomes in drug testing, disease modeling, and other critical research areas.
- 2. Consistency:** homoGel® is produced under strict quality control measures, ensuring minimal batch-to-batch variability. This consistency is crucial for reproducibility, a cornerstone of scientific research, enabling more reliable and validated results across different studies and laboratories.
- 3. Ethical Advancement:** homoGel® is an animal free product and thus reduces the reliance on animal-derived products, aligning with the growing demand for humane and sustainable research practices. This ethical approach not only addresses concerns about animal welfare but also enhances the scientific validity of research by focusing on human-relevant models.

### Applications


- **Organoid Culture:** homoGel® supports the growth of organoids that more accurately replicate human organ structures and functions, leading to better disease models and more effective drug testing platforms.
- **Cancer Research:** Provides a human-specific environment that is critical for understanding tumor-ECM interactions, aiding in the development of new cancer treatments.
- **Angiogenesis and vascularization:** homoGel® is not merely a passive scaffold; it actively regulates and guides angiogenesis by storing angiogenic factors and influencing the process through mechanical cues based on its physical stiffness.
- **Regenerative Medicine:** homoGel® is the scaffold for MSC and iPSC growth, serving as a cornerstone in preclinical medical testing and the development of therapeutic models for regenerative diseases and tissue repair.
- **Tissue Engineering and Organ Reconstruction:** homoGel® is designed to support a robust platform for in vitro organ and tissue reconstruction, as well as advancements in bioprinting development.

# our media label

Our media label displays all important information about the contents, expiry date and Lot-No. of the culture medium plus a box to be ticked and useful lines reserved for your internal quality management purposes.



HPC – Human periosteal cells

provitro 	
<b>Endothelial cell proliferation medium</b>	
Order No.: 201 1102 Ready to use with supplements, only.	
FCS	
Addition by user: <input type="checkbox"/> Supplement 218 0001	
Date: _____	
User-Lot No.: _____	
Culture medium expires within 30 days of supplementation. In vitro laboratory use only. Not intended for any human or animal diagnostic or therapeutic use.	
Basal medium	Cat No.: 200 0001
Lot No.: MC1217P-EC	500 ml
Exp.: 12/2025	Store at +4°C to +8°C

← fill in the date you have added the supplements

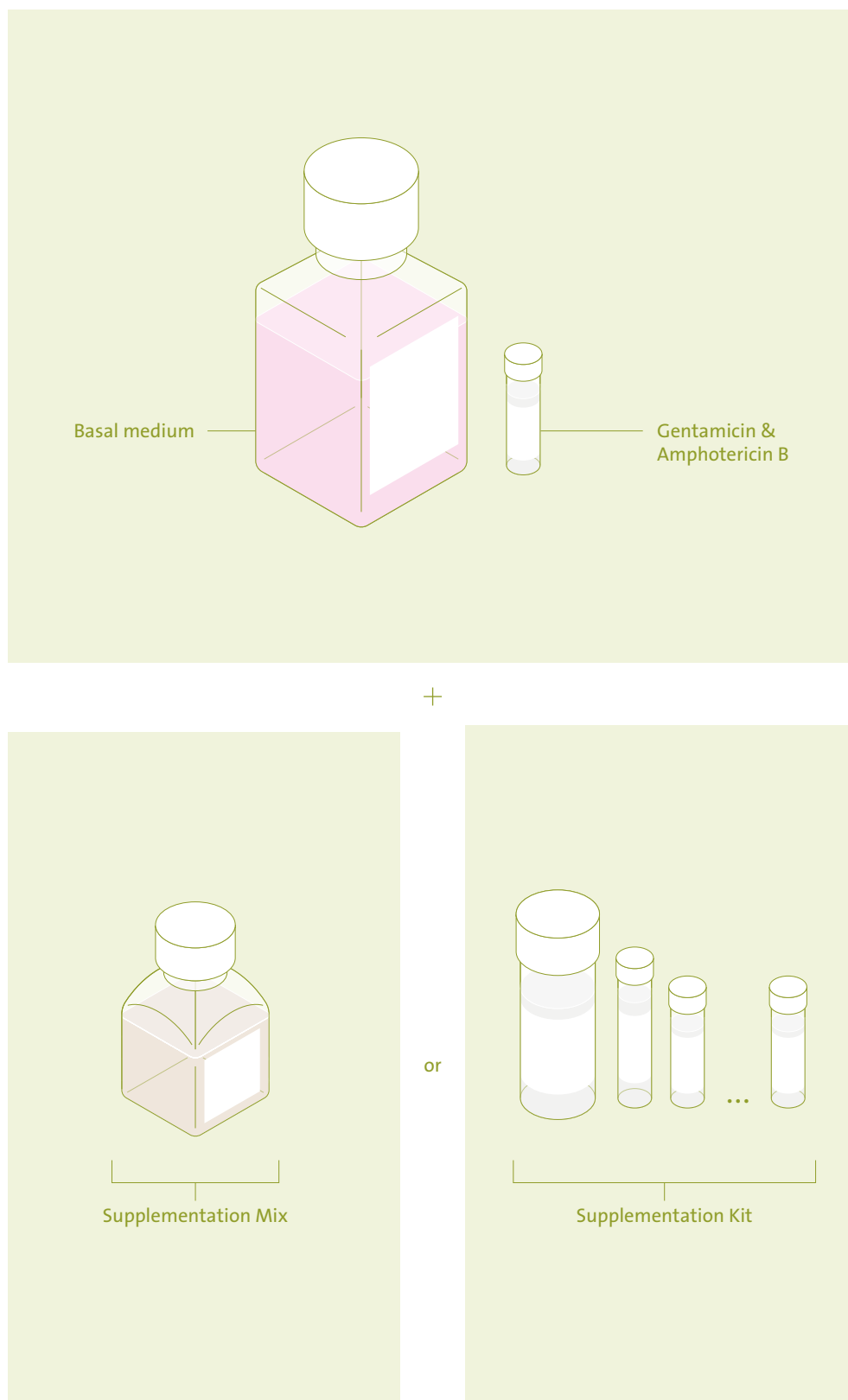
← fill in your internal lot number

## our cell growth kits

The packaging of the culture media reflects the preference of many customers to opt for the addition of antibiotics and fungicides themselves.

For this reason, the antibiotic and fungicide supplements are always supplied as separate aliquots, irrespective of the two supplement filling variants.

The supplement mix therefore contains the growth factors, hormones, heparin or other substances in addition to the serum in accordance with the information in the respective data sheet, whereas the serum and the other supplements are aliquoted individually in the kit version.



\* This illustration is only an example. Appearance and quantity may vary depending on specification.



# endothelial cell growth media



Endothelial cell growth medium  
with individually aliquoted  
supplements

Provitro's endothelial cell growth media were developed to provide endothelial cells with optimal growth conditions in a low-serum environment. Provitro's basal growth media will be supplemented with FCS less than 5%, an endothelial growth supplement, recombinant human EGF and bFGF and hydrocortisone according to the specification of the growth media.

Based on the expertise of provitro and some of our customers, our two endothelial cell growth media are recommended for the cell types listed below:

## **Endothelial cell growth medium, low serum**

### **Endothelial cell growth medium, advanced, low serum**

→ HUVEC, human pulmonary artery and human saphenous vein endothelial cells and endothelial cells derived from mouse, rat, rabbit, pig or cattle.

### **Microvascular endothelial cell growth medium, low serum**

### **Microvascular endothelial cell growth medium, advanced, low serum**

→ HMVEC; human coronary, lung, brain and aortic endothelial cells. Also useful with endothelial cells derived from mouse, rat, rabbit, pig or cattle.

Provitro's endothelial cell growth media are supplied in three variants of unit assembly:

#### → **Defined basal growth media without any growth factors, mitogens or proteins**

Therefore, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the adherent cells are able to survive over a time period of one up to three days but they starve during this time and they do not proliferate.

#### → **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need always the complete growth medium for cell culture one should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium you have to thaw the premixed supplements and add the whole tube to the basal growth medium.

Whereas frozen supplements and cooled media may be stored for nine months, one should use the ready-to-use growth medium within 30 days after adding the supplements.

#### → **Growth media with individual vials for each single supplement as kit version**

If you need flexibility in your experiments we are able to provide you with a medium that enables you only to add that supplement you really want to give into the basal growth medium.



Endothelial cell medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0001	Endothelial cell proliferation medium, basal	Basal	→
200 0001-prf	Endothelial cell proliferation medium, basal	Basal-prf	→

Endothelial cell proliferation medium			
201 0001	Endothelial cell proliferation medium	FCS	→
201 0001-prf	Endothelial cell proliferation medium, phenol red free	FCS-prf	→
211 0001	Endothelial cell proliferation medium	FCS kit	→
211 0001-prf	Endothelial cell proliferation medium, phenol red free	FCS kit-prf	→

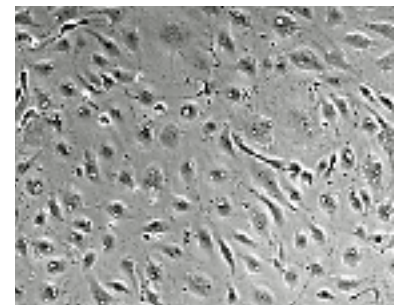
Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS	0.07 ml
Heparin	10.00 µg
human rec. EGF	10.00 ng
human rec. bFGF	5.00 ng
human rec. R3 IGF-1	5.00 ng
human rec. VEGF	0.50 ng
Ascorbic acid	1.00 µg
Hydrocortison	0.20 µg
Gentamicin	50.00 µg
Amphotericin B	50.00 µg

Endothelial cell growth medium, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 1101	Endothelial cell growth medium, advanced	FCS	→
201 1101-prf	Endothelial cell growth medium, advanced, phenol red free	FCS-prf	→
211 1101	Endothelial cell growth medium, advanced	FCS kit	→
211 1101-prf	Endothelial cell growth medium, advanced, phenol red free	FCS kit-prf	→
212 1101	Endothelial cell growth medium, advanced	Hus kit	→
212 1101-prf	Endothelial cell growth medium, advanced, phenol red free	Hus kit-prf	→
262 1101	Endothelial cell growth medium, GMP	Hus kit	

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS	0.02 ml
Heparin	22.50 µg
human rec. EGF	5.00 ng
human rec. bFGF	10.00 ng
human rec. VEGF	0.50 ng
human rec. R3 IGF-1	20.00 ng
Ascorbic acid	1.00 µg
Hydrocortison	0.20 µg
Gentamicin	50.00 µg
Amphotericin B	50.00 µg



HUVC - Human umbilical vein endothelial cells

Microvascular endothelial cell growth medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0102	Microvascular endothelial cell growth medium, basal	Basal	→
200 0102-prf	Microvascular endothelial cell growth medium, basal, phenol red free	Basal-prf	→

Microvascular endothelial cell growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 0102	Microvascular endothelial cell growth medium	FCS	→
201 0102-prf	Microvascular endothelial cell growth medium, phenol red free	FCS-prf	→
211 0102	Microvascular endothelial cell growth medium	FCS kit	→
211 0102-prf	Microvascular endothelial cell growth medium, phenol red free	FCS kit-prf	→
212 0102	Microvascular endothelial cell growth medium	Hus kit	→
212 0102-prf	Microvascular endothelial cell growth medium, phenol red free	HuS kit-prf	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS	0.05 ml
ECGS/H (3 mg/ml)	4.00 µl
human rec. EGF	10.00 ng
Hydrocortison	1.00 µg
Gentamicin	50.00 µg
Amphotericin B	50.00 µg

Microvascular endothelial cell growth medium, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 1102	Microvascular endothelial cell growth medium, advanced	FCS	→
201 1102-prf	Microvascular endothelial cell growth medium, advanced, phenol red free	FCS-prf	→
211 1102	Microvascular endothelial cell growth medium, advanced	FCS kit	→
211 1102-prf	Microvascular endothelial cell growth medium, advanced, phenol red free	FCS kit-prf	→
212 1102	Microvascular endothelial cell growth medium, advanced	Hus kit	→
212 1102-prf	Microvascular endothelial cell growth medium, advanced, phenol red free	Hus kit-prf	→
262 1102	Microvascular endothelial cell growth medium, GMP	Hus kit	

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS	0.05 ml
human rec. EGF	5.00 ng
human rec. bFGF	10.00 ng
human rec. R3 IGF-1	20.00 ng
human rec. VEGF	0.50 ng
Ascorbic acid	1.00 µg
Hydrocortison, 0.1 mg	0.20 µg
Gentamicin	50.00 µg
Amphotericin B	50.00 µg

■ premix of all supplements (mix version) or individual vials for each supplement (kit version)

# chondrocyte cell growth media

Provitro's chondrocyte growth media were developed to provide chondrocytes with optimal growth conditions.

Based on the expertise of provitro and some of our customers, our chondrocyte growth media are recommended for chondrocytes of the species listed below:

## **Chondrocyte growth media**

### **Chondrocyte growth media, advanced**

→ Human chondrocytes and those derived from mouse, rat, or cattle.

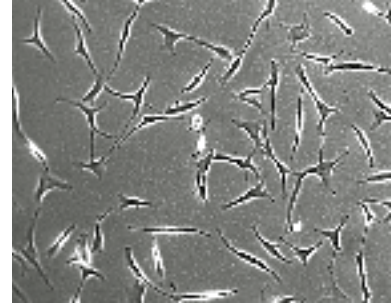
Provitro's chondrocyte growth media will be supplied in two variants of unit assembly:

#### → **Defined basal growth medium/defined basal growth medium, advanced without any growth factors, mitogens or proteins**

Therefore, to get a growth medium you have to add your own supplements or use our growth media with premixed supplements. Using the basal growth medium, the adherent cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.

#### → **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need at any time the complete growth medium for cell culture you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months, whereas ready-to-use growth medium should be used within 30 days from addition of supplements .



HCHON – Human chondrocytes

Chondrocyte growth medium, basal & basal, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0201	Chondrocyte growth medium, basal	Basal	→
200 0201-prf	Chondrocyte growth medium, basal, phenol red free	Basal-prf	→
200 1201	Chondrocyte growth medium, basal, advanced	Basal-a	→

Chondrocyte growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 0201	Chondrocyte growth medium	FCS	→
201 0201-prf	Chondrocyte growth medium, phenol red free	FCS-prf	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS or HuS	0.10 ml
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

Chondrocyte growth medium, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 1201	Chondrocyte growth medium, advanced	FCS	→
262 1201	Chondrocyte growth medium, GMP	HuS	

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS or HuS	0.10 ml
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

■ premix of all supplements (mix version) or individual vials for each supplement (kit version)

# osteoblast cell growth media

Provitro's osteoblast growth media were developed to give osteoblasts optimal growth conditions.

Based on the expertise of provitro and some of our customers, our osteoblast growth media are recommended for osteoblasts from species listed below.

## **Osteoblast growth media**

### **Osteoblast growth media, advanced**

→ Human osteoblasts and those derived from mouse, rat, or cattle.

Provitro's osteoblast growth media are supplied in two variants of unit assembly:

→ **Defined basal growth medium/defined basal growth medium, advanced without any growth factors, mitogens or proteins**

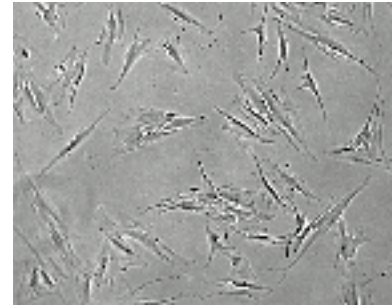
Therefore, to get a growth medium you have to add your own supplements or use our growth media with premixed supplements. Using the basal growth medium, the adherent cells are able to survive over a time period of one up to three days but they starve during this time and they do not proliferate.

→ **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need always the complete growth medium for cell culture one should choose the premix version.

You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium you have to thaw the premixed supplements and add the whole tube to the basal growth medium.

Whereas frozen supplements and cooled media may be stored for nine months, one should use the ready-to-use growth medium within 30 days after adding the supplements.



HOB – Human osteoblasts

Osteoblast growth medium, basal & basal, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0301	Osteoblast growth medium, basal	Basal	→
200 1301	Osteoblast growth medium, basal, advanced	Basal-a	→

Osteoblast growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 0301	Osteoblast growth medium	FCS	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS or HuS	0.10 ml
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

Osteoblast growth medium, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 1301	Osteoblast growth medium, advanced	FCS	→
262 1301	Osteoblast growth medium, GMP	HuS	

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS or HuS	0.10 ml
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

■ premix of all supplements (mix version) or individual vials for each supplement (kit version)

Provitro's fibroblast growth media were developed to give fibroblasts optimal growth conditions. For working under serum-free, defined conditions provitro has developed a defined fibroblast growth medium, that contains no unknown compound. For routine work, we offer a serum-containing version of fibroblast growth medium that can be used with all fibroblasts, including those frozen before in a high serum containing medium.

Based on the expertise of provitro and some of our customers, our fibroblast growth media are recommended for fibroblasts of the species listed below:

**Fibroblast growth media, complete**

**Serum-free fibroblast growth media**

→ Human fibroblasts and those derived from mouse, rat or cattle.

Provitro's fibroblast growth media are supplied in three variants of unit assembly:

→ **Defined basal growth media without any growth factors, mitogens or proteins**

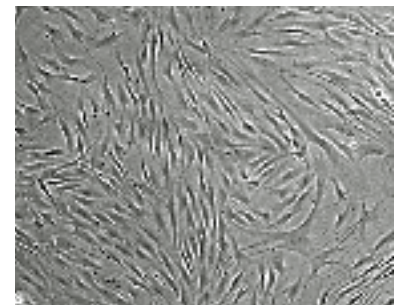
Therefore, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the adherent cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.

→ **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need the complete growth medium for cell culture at any time, you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months, whereas ready-to-use growth medium should be used within 30 days from addition of supplements.

→ **Growth media with individual vials for each single supplement as kit version**

For more flexibility in your experiments, you should use our medium that will help you to add only the very supplement you really want to add to the basal growth medium.



HFIB – Human fibroblasts

Fibroblast growth medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0401	Fibroblast growth medium, basal	Basal	→
200 0401-prf	Fibroblast growth medium, basal, phenol red free	Basal-prf	→

Fibroblast growth medium, complete			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 0401	Fibroblast growth medium	FCS	→
201 0401-prf	Fibroblast growth medium, phenol red free	FCS-prf	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS or HuS	0.10 ml
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

Defined fibroblast maintenance medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
203 0401	Defined fibroblast maintenance medium	Serum-free	→
213 0401	Defined fibroblast maintenance medium	Serum-free kit	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
human rec. bFGF	1.00 ng
Insulin	5.00 µg
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

■ premix of all supplements (mix version) or individual vials for each supplement (kit version)



# keratinocyte growth media

Provitro's keratinocyte media were developed to ensure optimal growth conditions for keratinocytes in a serum-free environment. Provitro's keratinocyte basal media are supplemented with BPE as an epithelial growth supplement, recombinant human EGF, insulin, adrenalin, calcium chloride and hydrocortisone.

Based on the expertise of provitro and some of our customers, our keratinocyte growth media are recommended for keratinocytes of the species listed below:

→ **Keratinocyte growth media, advanced, serum-free**

Human neonatal, juvenile and adult keratinocytes and keratinocytes derived from mouse, rat, horse, pig or cattle grow in our media.

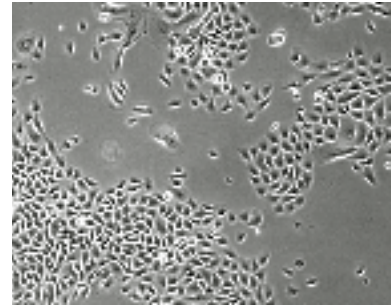
Provitro's keratinocyte growth media are supplied in two variants of unit assembly:

→ **Defined basal growth media without any growth factors, mitogens or proteins**

Therefore, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the adherent cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.

→ **Growth media with one single premix of all supplements.**

If you want to store some media longer than 30 days but need the complete growth medium for cell culture at any time, you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months, whereas ready-to-use growth medium should be used within 30 days from addition of supplements.



HKER – Human keratinocytes

Keratinocyte growth medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0501	Keratinocyte growth medium, basal	Basal	→

Complete keratinocyte growth medium, advanced			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
203 0501	Keratinocyte growth medium	Serum-free	→
263 0501	Keratinocyte growth medium, GMP	Serum-free	

# melanocyte growth media

Provitro's melanocyte growth media were developed to provide melanocytes with optimal growth conditions in a serum-free environment. Provitro's melanocyte basal media are supplemented with BPE as an epithelial growth supplement, recombinant human EGF, insulin, adrenalin, calcium chloride and hydrocortisone.

Based on the expertise of provitro and some of our customers, our melanocyte growth media are recommended for melanocytes of the species listed below:

**Melanocyte growth medium, serum-free**

- Human neonatal, juvenile and adult melanocytes and melanocytes derived from mouse, rat, horse, pig or cattle grow in our media.

Provitro's melanocyte growth media are supplied in three variants of unit assembly:

→ **Defined basal growth media without any growth factors, mitogens or proteins**

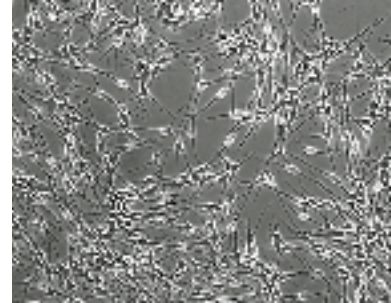
Therefore, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the adherent cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.

→ **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need the complete growth medium for cell culture at any time you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months whereas ready-to-use growth medium should be used within 30 days from addition of supplements.

→ **Growth media with individual vials for each single supplement as kit version**

For more flexibility in your experiments, you should use our medium that will help you to add only the supplement you really want to add to the basal growth medium.



HME1 – Human melanocyte

Melanocyte growth medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0502	Melanocyte growth medium, basal	Basal	→

Melanocyte growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
203 0502	Melanocyte growth medium	Serum-free	→
213 0502	Melanocyte growth medium	Serum-free kit	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
BPE 26 mg Protein/2 ml	4.00 µl
human rec. bFGF	1.00 ng
Hydrocortisone	0.50 µg
Insulin	5.00 µg
PMA	10.00 ng
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

premix of all supplements (mix version) or individual vials for each supplement (kit version)

# smooth muscle cell growth media

cell culture media,  
reagents and 3D matrices

55

Provitro's smooth muscle cell growth media were developed to provide smooth muscle cells with optimal growth conditions in a low serum environment. Provitro's smooth muscle cell basal medium is supplemented with FCS 5%, recombinant human EGF and bFGF, and insulin.

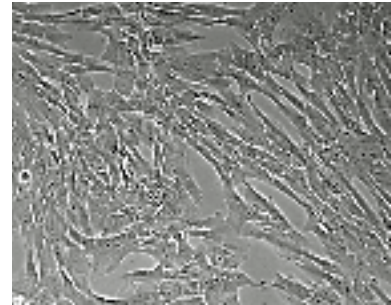
Based on the expertise of provitro and some of our customers, our smooth muscle cell growth media are recommended for smooth muscle cells of the species listed below:

**Smooth muscle cell growth medium, low serum**

- Human pulmonary artery, human coronary artery, human aortic, urothelial, tracheal, and bronchial smooth muscle cells and smooth muscle cells derived from mouse, rat, pig or cattle.

Provitro's smooth muscle cell growth media are supplied in three variants of unit assembly:

- **Defined basal growth media without any growth factors, mitogens or proteins**  
Hence, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the adherent cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.
- **Growth media with one single premix of all supplements**  
If you want to store some media longer than 30 days but need the complete growth medium for cell culture at any time you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months whereas ready-to-use growth medium should be used within 30 days from addition of supplements.
- **Growth media with individual vials for each single supplement as kit version**  
For more flexibility in your experiments, you should use our medium that will help you to add only the supplement you really want to add to the basal growth medium.



HUASMC – Human umbilical artery smooth muscle cells

Smooth muscle cell growth medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0601	Smooth muscle cell growth medium, basal	Basal	→

Smooth muscle cell growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 0601	Smooth muscle cell growth medium	FCS	→
211 0601	Smooth muscle cell growth medium	FCS kit	→
212 0601	Smooth muscle cell growth medium	Hus kit	→
262 0601	Smooth muscle cell growth medium, GMP	Hus kit	

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS	0.05 ml
human rec. bFGF	2.00 ng
human rec. EGF	0.50 ng
Insulin	5.00 µg
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

Smooth muscle cell growth medium, phenol red free			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0601-prf	Smooth muscle cell growth medium, basal, phenol red free	Basal-prf	→
201 0601-prf	Smooth muscle cell growth medium, phenol red free	FCS-prf	→
211 0601-prf	Smooth muscle cell growth medium, phenol red free	FCS kit-prf	→
212 0601-prf	Smooth muscle cell growth medium, phenol red free	Hus kit-prf	→

premix of all supplements (mix version) or individual vials for each supplement (kit version)

# skeletal muscle cell growth and differentiation media

Provitro's skeletal muscle cell growth media were developed to provide skeletal muscle cells with optimal growth conditions in a low serum environment. After confluence, following addition of differentiation medium, the proliferating satellite cells start to form syncytia. Provitro's skeletal muscle cell basal media are supplemented with FCS 5%, recombinant human EGF and bFGF, fetuin, dexamethasone and insulin for the growth medium and with insulin for the differentiation medium, respectively.

Based on the expertise of provitro and some of our customers, our skeletal muscle cell growth media are recommended for skeletal muscle cells of the species listed below:

## **Skeletal muscle growth medium, low serum**

→ Human skeletal muscle cells.

Provitro's skeletal muscle cell growth media are supplied in three variants of unit assembly:

### → **Defined basal growth media without any growth factors, mitogens or proteins**

Hence, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the adherent cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.

### → **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need the complete growth medium for cell culture at any time you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months whereas ready-to-use growth medium should be used within 30 days from addition of supplements.

### → **Growth media with individual vials for each single supplement as kit version**

For more flexibility in your experiments, you should use our medium that will help you to add only the supplement you really want to add to the basal growth medium.



Skeletal muscle cell growth medium with supplement mix

Skeletal muscle cell growth medium, basal			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0602	Skeletal muscle cell growth medium, basal	Basal	→

Skeletal muscle cell growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
201 0602	Skeletal muscle cell growth medium	FCS	→
211 0602	Skeletal muscle cell growth medium	FCS kit	→
212 0602	Skeletal muscle cell growth medium	Hus kit	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
FCS or HuS	0.05 ml
Fetuin	50.00 µg
human rec. EGF	10.00 ng
human rec. bFGF	1.00 ng
Insulin	10.00 µg
Dexamethasone	400.00 ng
Gentamicin	50.00 µg
Amphotericin B	50.00 ng

Skeletal muscle cell differentiation medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
203 0603	Skeletal muscle cell differentiation medium	Serum-free	→
213 0603	Skeletal muscle cell differentiation medium	Serum-free kit	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
Insulin	10.0 µg
Gentamicin	50.0 µg
Amphotericin B	50.0 ng

premix of all supplements (mix version) or individual vials for each supplement (kit version)



Provitro's epithelial cell growth media were developed to provide each subtype of epithelial cells with optimal growth conditions in a serum-free environment. Provitro has developed several variations of epithelial cell growth media to enable your use, under all circumstances, of the best subtype-specific formulation.

Based on the expertise of provitro and some of our customers, our epithelial cell growth media are recommended for epithelial cells of the species listed below:

**Airway epithelial cell growth medium, serum-free**

→ Human nasal, tracheal and bronchial epithelial cells and similar cells derived from rat and pig.

**Urothelial cell growth medium, serum-free**

→ Human urothelial cells and similar cells derived from cattle.

**Mammary epithelial cell growth medium, serum-free**

→ Human normal mammary gland cells, human tumour-derived cells and similar cells from mouse or rat.

Provitro's epithelial growth media are supplied in three variants of unit assembly:

→ **Defined basal growth media without any growth factors, mitogens or proteins**

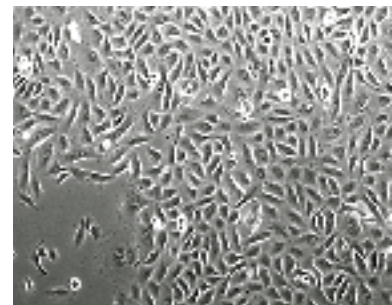
Therefore, to get a growth medium you have to add your own supplements or use our supplement kits. Using the basal medium, the cells are able to survive over a period of one up to three days, but they starve during this time and do not proliferate.

→ **Growth media with one single premix of all supplements**

If you want to store some media longer than 30 days but need the complete growth medium for cell culture at any time you should choose the premix version. You get one tube with frozen mixed supplements attached to the bottle of basal growth medium. To obtain a ready-to-use growth medium, you have to thaw the premixed supplements and add the whole tube to the basal growth medium. Frozen supplements and cooled media may be stored for nine months, whereas ready-to-use growth medium should be used within 30 days from addition of supplements.

→ **Growth media with individual vials for each single supplement as kit version**

For more flexibility in your experiments, you should use our medium that will help you to add only the supplement you really want to add to the basal growth medium.



HUEPC – Human urothelial epithelial cells

Airway epithelial cell growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0701	Airway epithelial cell growth medium, basal	Basal	→
203 0701	Airway epithelial cell growth medium	Serum-free	→

Urothelial cell growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0702	Urothelial cell growth medium, basal	Basal	→
203 0702	Urothelial cell growth medium	Serum-free	→

Mammary epithelial cell growth medium			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0703	Mammary epithelial cell growth medium, basal	Basal	→
203 0703	Mammary epithelial cell growth medium	Serum-free	→

Supplementation with:

SUBSTANCE	FINAL CONC./ML GROWTH MEDIUM
human rec. EGF	10.0 ng
Hydrocortisone	0.5 µg
Insulin	5.0 µg
BPE (13mg/ml)	4.0 µl
Gentamicin	50.0 µg
Amphotericin B	50.0 ng

premix of all supplements (mix version) or individual vials for each supplement (kit version)

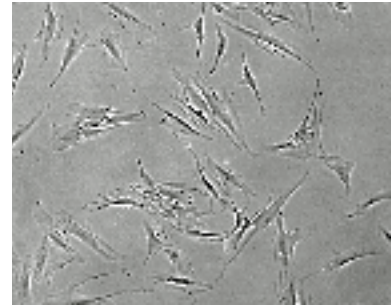
# mesenchymal stem cell media

cell culture media,  
reagents and 3D matrices

61

Adult stem cells are undifferentiated cells found among specialised or differentiated cells in a tissue or organ after birth. They appear to possess a limited ability to produce different cell types and to self-renew, different from embryonic stem cells. Based on current research, adult stem cells may serve as a source for tissue repair, e.g. for regeneration of damaged heart tissue, or for repair of eroded cartilage in rheumatoid arthritis.

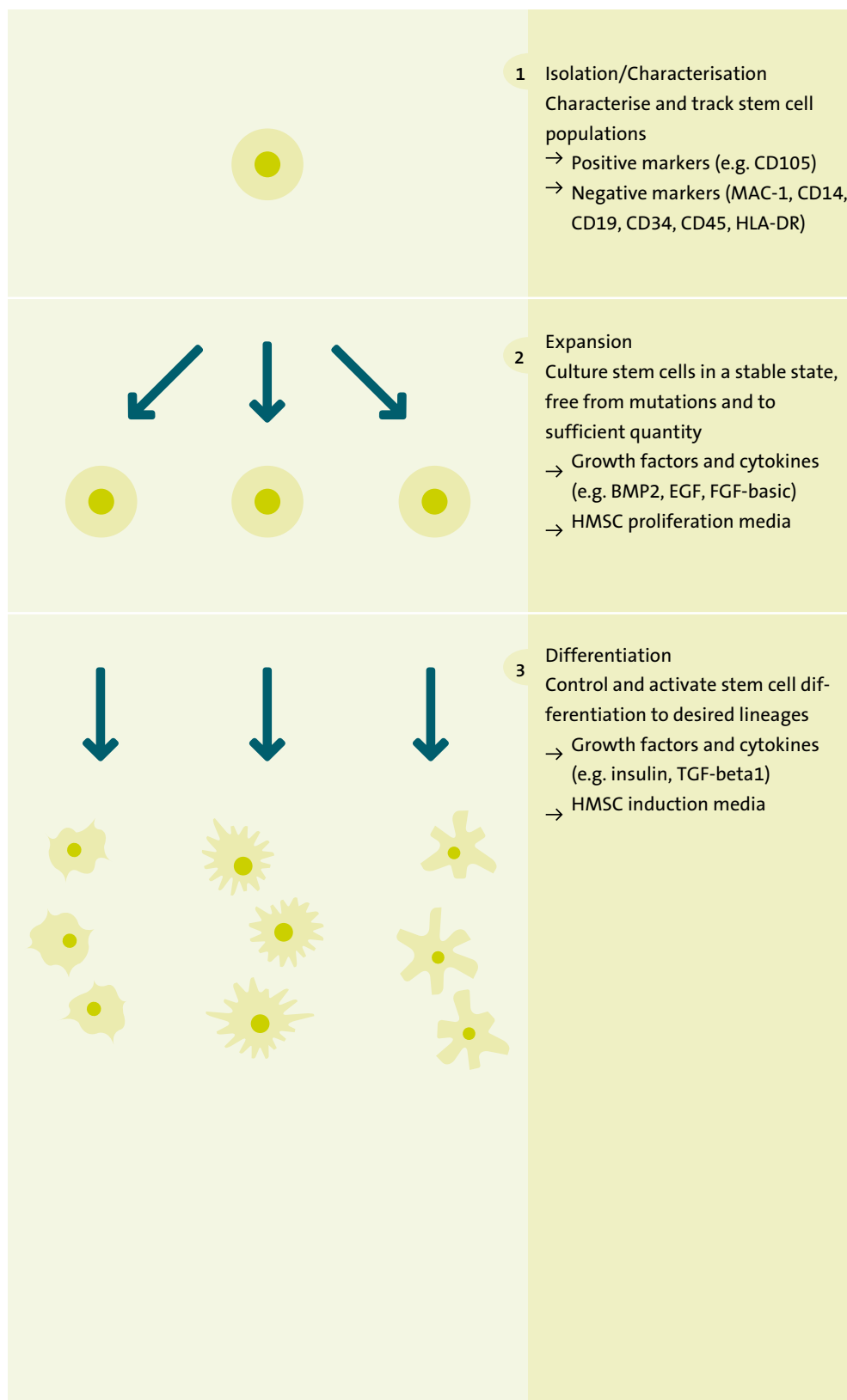
In addition to the already offered products for isolation and characterisation of stem cells, provitro extends its portfolio with new culture media for proliferation and differentiation of stem cells developed and optimised by our academic partners, the Tissue Engineering Laboratories at Charité Universitätsmedizin Berlin.



HOB – Human osteoblasts

Mesenchymal stem cell media			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
200 0901	HMSC proliferation medium, basal	Basal	→
201 0901	HMSC proliferation medium	FCS	→
211 0901	HMSC proliferation medium	FCS kit	→
200 0902	HMSC chondrogenesis induction medium, basal	Basal	→
213 0902	HMSC chondrogenesis induction medium	Serum-free kit	→
200 0903	HMSC osteogenesis induction medium, basal	Basal	→
211 0903	HMSC osteogenesis induction medium	FCS kit	→
200 0904	HMSC adipogenesis induction medium, basal	Basal	→
211 0904	HMSC adipogenesis induction medium	FCS kit	→
200 1001	Cancer stem cell medium, basal	Basal	→
213 1001	Cancer stem cell medium (BIT-100)	Serum-free	→

# application of provitro's stem cell media



# reagents for cell culture handling

## Passage kit

Serum contains trypsin inhibitors. Thus it is important to remove traces of serum using solution 1. The incubation time for the trypsin (solution 2 of passage kit 1 & 2) and the degree of force required to get the cells into single cell suspension varies between cell types. Solution 3 will inactivate the remaining trypsin and prevent cell damage. Since solution 3 (of passage kit 2) contains soybean trypsin inhibitor, it may be used for cultures in serum-free medium, too.

**Passage kits 1 & 2 are recommended for the cell types listed below:**

→ Endothelial cells, chondrocytes, osteoblasts, periost cells, fibroblasts, myocytes, Keratinocytes, melanocytes

**Passage kit 3 contains dispase to detach cells highly sensitive to trypsin and is recommended for:**

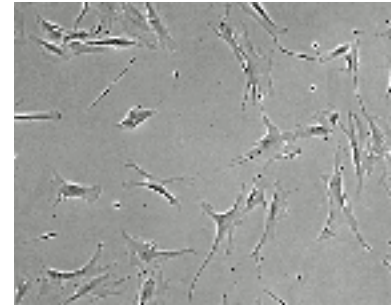
→ Epithelial cells

## Cryo solution

Cryopreservation is a process of preserving cells by cooling to low sub-zero temperatures. At these low temperatures, any biological activity is effectively stopped. However, when cryo solutions are not used, the cells being preserved are often damaged due to freezing during the approach to low temperatures or warming to room temperature. Phenomena which can cause damage to cells during cryopreservation are solution effects, extracellular ice formation, dehydration and intracellular ice formation.

## Supplement kits

Provitro's cell culture media are supplied in several variations of unit assembly system. Among those, we offer culture media with individual vials for each single supplement as kit version. If you need flexibility in your experiments, we are able to provide you with supplement kit that enables you only to add that supplement you really want to give into your basal culture medium.



HOB – Human osteoblasts

# cytokines, chemokines, growth factors

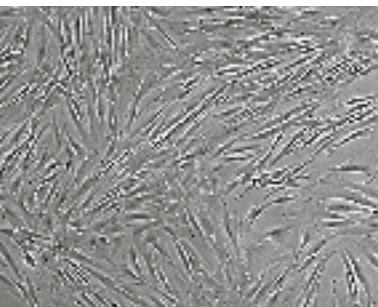
Provitro provides one of the widest ranges of recombinant proteins produced in *E. coli*, insect cells and various mammalian cell types. To give you the most active proteins, we subcontracted qualified suppliers with many years of experience in producing bacterial and mammalian-derived recombinant proteins, and established an in-house quality control. Most of our proteins come without carrier proteins or other additives, because we respect the wishes of our customers who prefer preparations without such compounds. Some of the products need buffer, salts or protein as additives for stability over a long period of time. You should, therefore, carefully read our instructions for reconstitution for easier handling and use. Our cytokines, chemokines and growth factors, in general, are above 95% in purity. They have been detected by SDS-Page analysis and exhibit very high activity levels approved by WHO-standardised cell test systems where applicable. We are sure to meet your needs and expectations if you decide to use one of our cytokines, chemokines or growth factor products.

→ The detailed product list appears in the appendix to the catalog and can be accessed directly via [this link](#).

Supplement kit for culture media			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
215 0001	Supplement kit for endothelial cell proliferation medium	FCS-kit	→
216 0001	Supplement kit for endothelial cell proliferation medium	Hus kit	→
215 1101	Supplement kit for endothelial cell growth medium, advanced	FCS kit	→
216 1101	Supplement kit for endothelial cell growth medium, advanced	Hus kit	→
215 0102	Supplement kit for microvascular endothelial cell growth medium	FCS kit	→
216 0102	Supplement kit for microvascular endothelial cell growth medium	Hus kit	→
215 1102	Supplement kit for microvascular endothelial cell growth medium, advanced	FCS kit	→
216 1102	Supplement kit for microvascular endothelial cell growth medium, advanced	Hus kit	→
217 0401	Supplement kit for defined fibroblast maintenance medium	Serum-free kit	→
217 0502	Supplement kit for melanocyte growth medium	Serum-free kit	→
215 0601	Supplement kit for smooth muscle cell growth medium	FCS kit	→
216 0601	Supplement kit for smooth muscle cell growth medium	Hus kit	→
215 0602	Supplement kit for skeletal muscle cell growth medium	FCS kit	→
216 0602	Supplement kit for skeletal muscle cell growth medium	Hus kit	→
217 0603	Supplement kit for skeletal muscle cell differentiation medium	Serum-free kit	→

Reagents of cell culture			
OFFER NO.	PRODUCT	SPECIFICATION	PDF
204 0001	50 ml PBS + 25 ml Tryp./EDTA + 25 ml neutral.sol. (with FCS)	Passage kit 1	→
204 0002	50 ml PBS + 25 ml Tryp./EDTA + 25 ml neutral.sol. (serum-free)	Passage kit 2	→
204 0003	50 ml PBS + 25 ml Dispase II solution	Passage kit 3	→
204 0004	50 ml PBS + 25 ml detachment solution	Passage kit 4	→
204 0101	Cryo solution, 125 ml (serum-free)	Cryo-SFM	→
204 0102	Cryo solution, 30 ml (serum-free)	Cryo-SFM	→
204 3100	BIT-100 supplement		

## customised culture media



HFIB – Human fibroblasts

For more than ten years, provitro has been working for various scientists who need flexibility up to the composition of the basal medium. Therefore, we offer our customer service. You tell us the modifications needed, and we produce five or more units of your personal cell growth medium. Ask for detailed terms of conditions for this service.

Customised culture media services	
OFFER NO.	PRODUCT
902 0101	Customised manufacturing of culture media
902 0201	Media testing on primary cells
902 0202	Media testing on defined cell lines
905 0601	Final report including detailed protocol and representative photos





# pathological and clinical biospecimens



As a leading provider of premium human biospecimens, we boast an extensive global network spanning over 30 clinical and research centers across Europe, South America, and Africa. Our in-house repository houses over 3,000,000 human tissue samples, primarily in the form of formalin-fixed paraffin-embedded (FFPE) blocks, representing more than 300,000 individual cases.

We adhere to stringent standards for the procurement and quality control of human biospecimens, offering a diverse range of human tissue samples and clinical biospecimens accompanied by detailed socio-demographic, histopathological, and clinical information.



FFPE tissue samples	70
standard TMA	72
iCon TMA	79
clinical samples and healthy donors	81

[\*← back to main contents\*](#)

# FFPE tissue

Formalin-Fixed Paraffin-Embedded (FFPE) tissues are expertly preserved specimens treated with formalin to maintain tissue integrity and embedded in paraffin wax for long-term storage. This preservation method ensures that the structural and molecular characteristics of the tissue remain intact for detailed analysis.

FFPE tissues are extensively used in various research and diagnostic applications, including histopathology, molecular biology, and oncology studies. These tissues provide a reliable source for examining morphological features and conducting genetic, protein, and molecular analyses.

With a wide range of available tissue types and conditions, FFPE samples are invaluable for retrospective studies and comparative research, enabling scientists to explore disease mechanisms, identify biomarkers, and develop targeted therapies.

**Our FFPE tissues come with comprehensive information, including:**

- Tumor content
- Presence of necrotic tissue
- Adjacent normal and other tissue types

**We offer matched sets such as:**

- Primary and metastatic FFPE tissue
- FFPE tissue paired with serum, plasma, and buffy coat

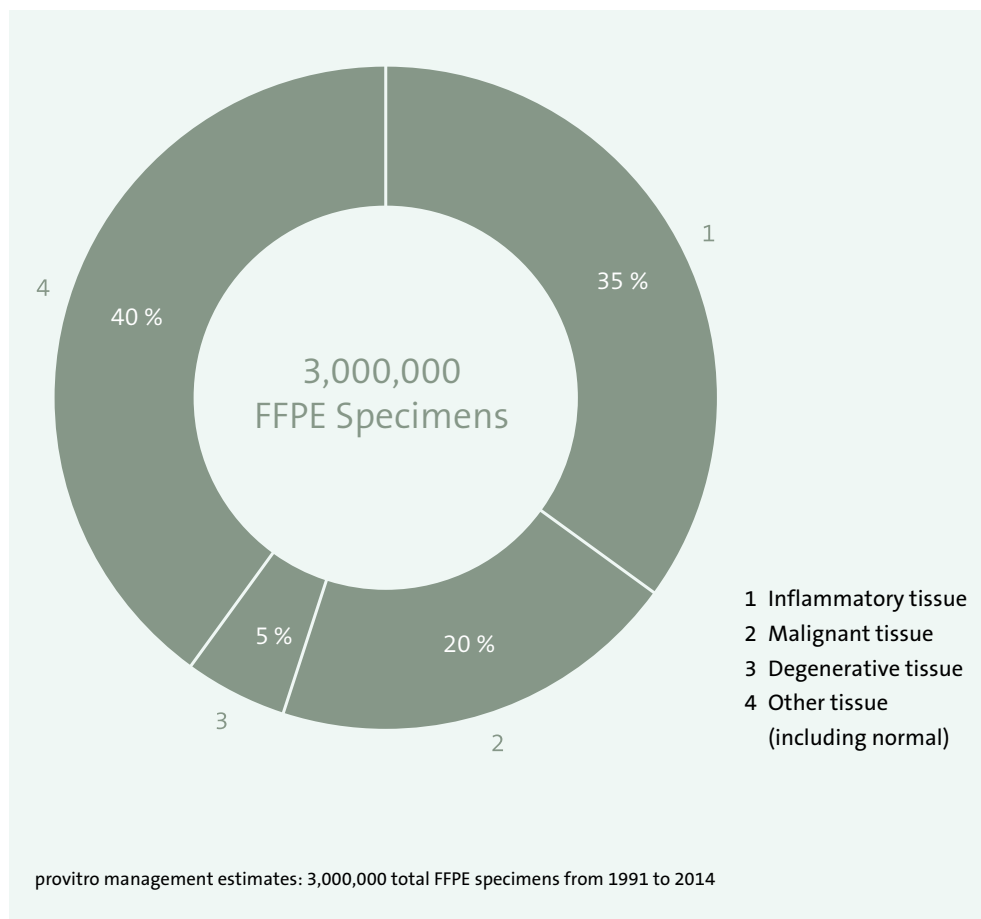
Additionally, we provide clinical sets that include cfDNA, serum, plasma, buffy coat, and more, catering to a broad spectrum of research and diagnostic needs. These well-documented and high-quality samples are ideal for advancing scientific discovery and medical innovation.

Human tissue is the 21<sup>st</sup> century “gold standard” for the development of new drugs, new biotechnologies and new in vitro diagnostics.

The pharmaceutical, diagnostics and biotech industries do not have significant biobanks of their own, so they have traditionally relied on collaborations with institutions to gain access to human tissue, for example.

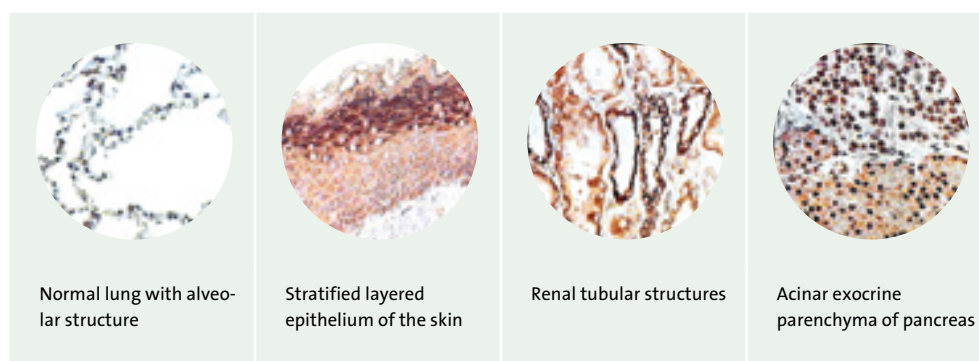
With more than one million tissue blocks, provitro’s tissue bank is one of the largest FFPE tissue banks and probably the largest privately owned FFPE tissue bank in the world.

Samples are collected from epidemiologically uniform age groups, representing the patient population of Europe’s largest university pathology unit over a period of more than 20 years.



## normal TMA

Normal TMA include normal tissue samples from a wide range of different human organs or matched organs from different species on one single slide.

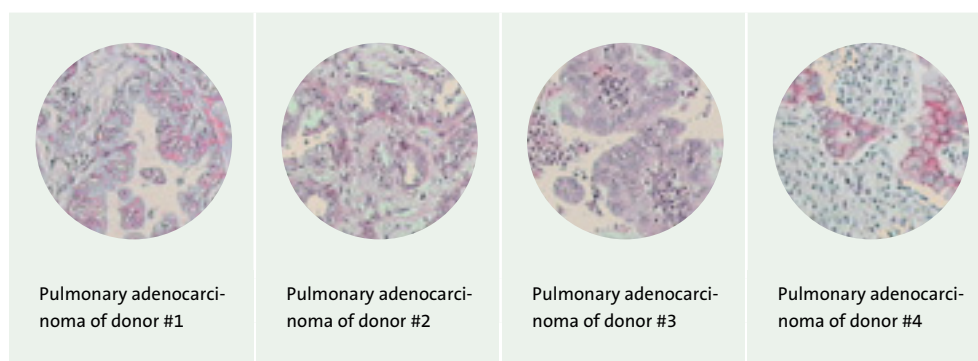


Normal tissue TMA			
OFFER NO.	PRODUCT	SPECIFICATION*	PDF
401 1110	Normal adult tissue I	31×2.0 mm	→
401 1120	Normal adult tissue II	70×2.0 mm	→
401 1130	FDA-recommended normal tissue panel (44 tissue types, 3 donors each)	132×1.5 mm	→
401 1210	Normal adult brain tissue	09×1.5 mm	→
401 1211	Normal adult and foetal bone tissue	20×2.0 mm	→
401 1221	Normal adult cartilage tissue I	20×2.0 mm	→
401 1222	Normal embryonic and foetal cartilage tissue II	20×2.0 mm	→
401 1223	Normal adult and neonatal cartilage tissue	40×2.0 mm	→
401 1310	Normal tissue, multi-species	48×1.5 mm	→
401 1401	Stem cell rich tissue	18×2.0 mm	→

\*No. of spots & diameter

# tumour TMA

Tumour TMA include various tumours which are precisely graded, typed and classified according to WHO and/or UICC criteria.

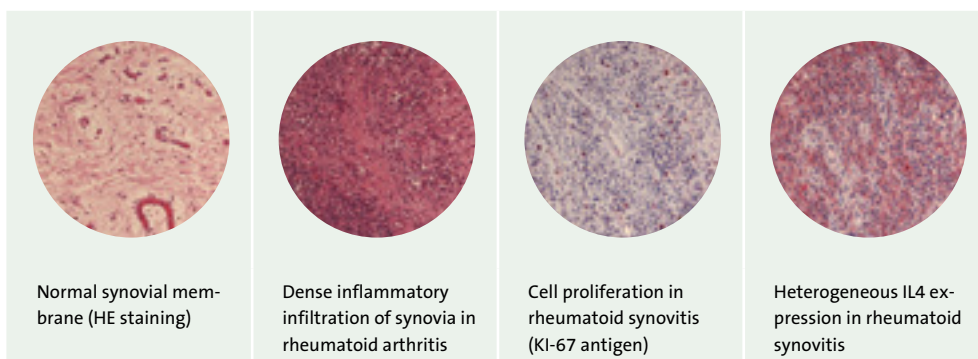


Tumour tissue TMA			
OFFER NO.	PRODUCT	SPECIFICATION*	PDF
401 2101	Lymphoma	20×2.0 mm	→
401 2201	Colon carcinoma	60×1.5 mm	→
401 2202	Mamma carcinoma	59×1.5 mm	→
401 2203	Cervical carcinoma	52×2.0 mm	→
401 2204	Lung carcinoma	60×1.5 mm	→
401 2205	Thyroid carcinoma, matched normal tissue and Morbus Basedow	101×1.5 mm	→
401 2206	Pancreatic carcinoma, matched normal tissue and pancreatitis	96×1.5 mm	→
401 2207	Esophageal carcinoma	63×2.0 mm	→
401 2208	Cholangiocarcinoma, matched lymph node metastasis and normal liver	86×2.0 mm	→
401 2209	Prostate carcinoma, matched intraepithelial neoplasia and normal tissue	80×1.5 mm	→
401 2210	Endometrial carcinoma	60×2.0 mm	→
401 2211	Colon-UICC	71×2.0 mm	→
401 2212	Skeletal carcinomas	54×2.0 mm	→
401 2213	Ovarian carcinoma, matched normal	85×1.5 mm	→
401 2214	Neuroendocrine differentiated Lung Tumor	55×1.5 mm	→
401 2215	Gastric Cancer TMA	106×1.5 mm	→
401 2216	Hepatocellular Carcinoma TMA	64×1.5 mm	→
401 2217	Bladder Cancer TMA	52×1.5 mm	→
401 2218	Head & Neck Squamous Cell Carcinoma TMA	52×2×1.5 mm	→
401 2401	Multitumour - 4 organs	12×2.0 mm	→
401 2402	Multitumour - 10 organs	22×2.0 mm	→
401 2403	Multitumour - 12 organs	24×2.0 mm	→

\*No. of spots & diameter

# inflammatory and autoimmune TMA

Inflammatory and autoimmune TMA include normal and disease tissue samples for synovitis (according to synovitis score by Krenn), colitis and autoimmune diseases (Hashimoto thyroiditis, Sjögren sinusitis & eosinophilia, rheumatoid arthritis, psoriasis and others).

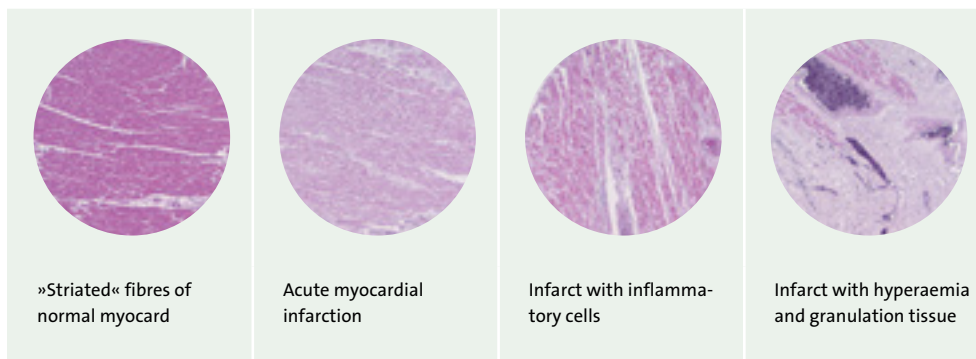


Inflammatory and autoimmune tissue TMA			
OFFER NO.	PRODUCT	SPECIFICATION*	PDF
401 3101	Colitis	(36+1) × 2.0 mm	→
401 3201	Synovitis	28 × 2.0 mm	→
401 3301	Autoimmune diseases	43 × 2.0 mm	→

\*No. of spots & diameter



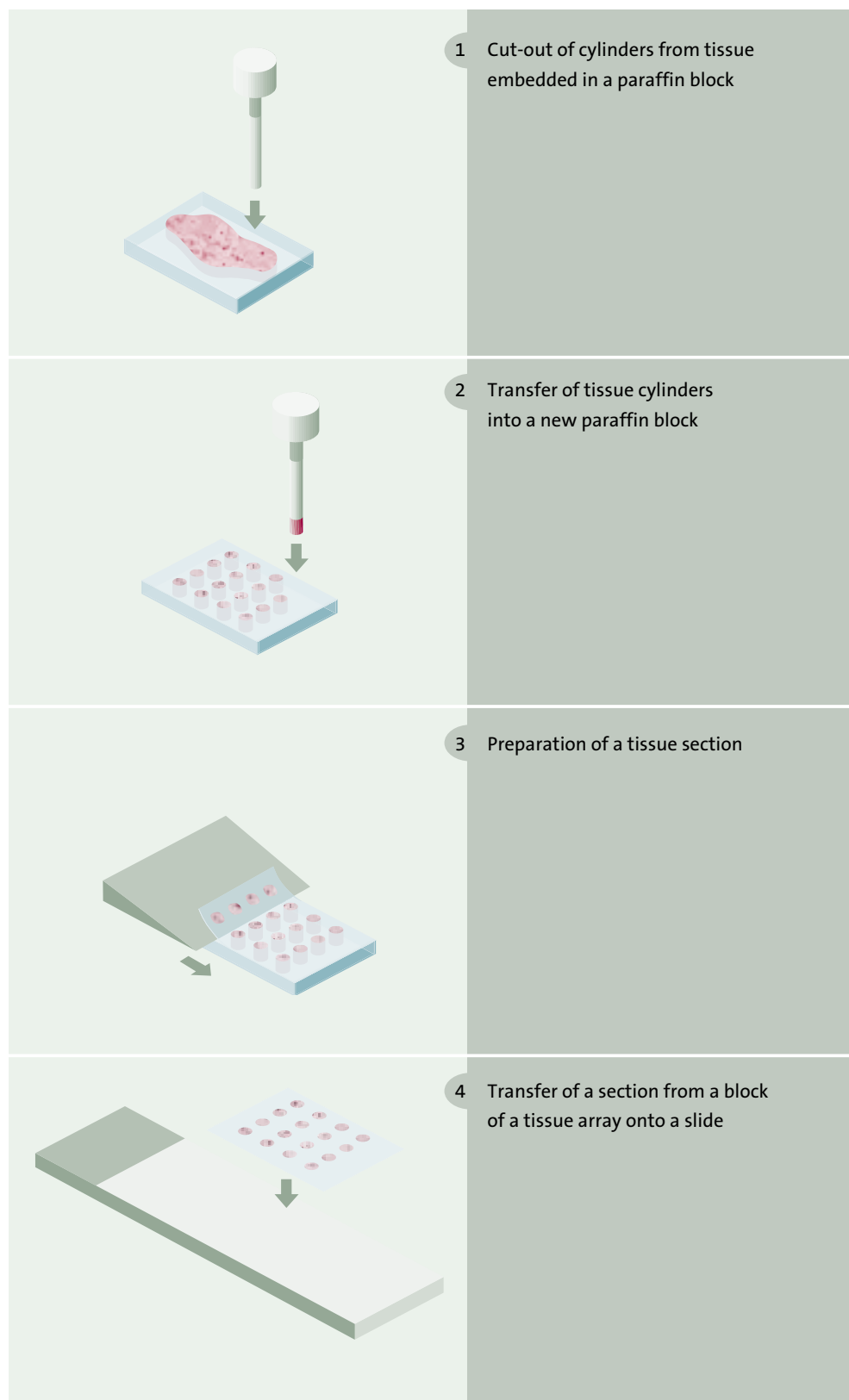
Cardiovascular TMA include samples from cardiovascular normal tissue and myocardial infarction, myocardial hypertrophy of left heart /right heart and vascular tissue samples including classification of arteriosclerosis according to Stary.



Cardiovascular tissue TMA			
OFFER NO.	PRODUCT	SPECIFICATION*	PDF
401 4101	Myocardial infarction	50 × 2.0 mm	→
401 4102	Myocardial hypertrophy I – left heart	22 × 2.0 mm	→
401 4103	Myocardial hypertrophy II – right heart	22 × 2.0 mm	→
401 4201	Vascular tissue	50 × 2.0 mm	→

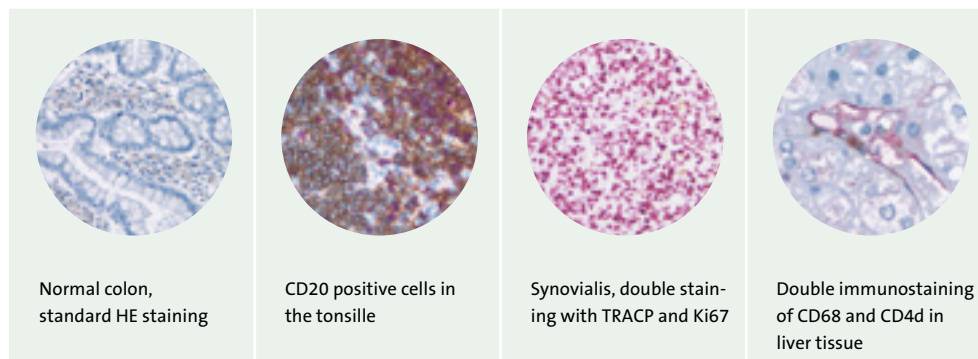
\*No. of spots & diameter

# manufacture of custom TMA



# customised TMA

Customised TMA include service of tissue microarray manufacturing and slides cutting according to customer's needs. Additional immunohistochemistry service is available on request.

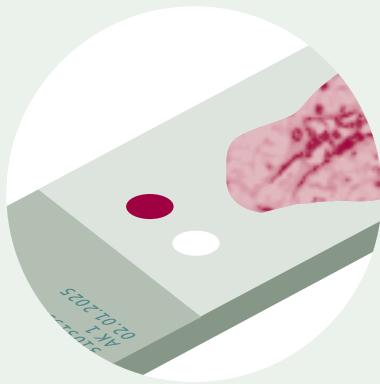


Customised TMA		
OFFER NO.	PRODUCT	SPECIFICATION*
401 5320	Manufacturing of iConTMA block	2 × 1.5 mm
401 5340	Manufacturing of iConTMA block	4 × 1.5 mm
904 0101	Array block preparation up to 180 customer tissue samples with 1.0 mm diameter	180 × 1.0 mm
904 0102	Array block preparation up to 115 customer tissue samples with 1.5 mm diameter	115 × 1.5 mm
904 0103	Array block preparation up to 80 customer tissue samples with 2.0 mm diameter	80 × 2.0 mm
904 0105	Array block preparation from samples of provitro tissue bank	
904 0211	Manufacturing of 1 slide of TMA block	Price per slide
904 0300	Manufacturing of recipient block, designing of TMA layout and corresponding data sheet	
904 0302	Transfer of marking of relevant tissue areas from H&E slide to donor block	Price per core
904 0303	Punching & transfer of tissue core from marked donor block to recipient block	Price per core
904 0304	Selection of relevant FFPE tissue samples; transfer of basic clinical data into new data base	Price per donor block
904 0402	TMA slide scanning using automated digital histology system	Price per slide
904 0505	Quality check and approval by Pathologist	Price per spot
904 0506	Evaluation by Pathologist, IRS score for one cell compartment	Price per spot
904 0507	Evaluation by Pathologist, H Score for one cell compartment	Price per spot
904 0508	Evaluation by Pathologist, % positive cells	Price per spot
904 0604	Data collection and compilation in EXCEL spreadsheets	Price per case
904 1301	Manufacturing and provision of FFPE tissue core, normal tissue	1.0 mm diameter

OFFER NO.	PRODUCT	SPECIFICATION*
904 1302	Manufacturing and provision of FFPE tissue core, normal tissue	1.5 mm diameter
904 1303	Manufacturing and provision of FFPE tissue core, normal tissue	2.0 mm diameter
904 2301	Manufacturing and provision of FFPE tissue core, pathological tissue	1.0 mm diameter
904 2302	Manufacturing and provision of FFPE tissue core, pathological tissue	1.5 mm diameter
904 2303	Manufacturing and provision of FFPE tissue core, pathological tissue	2.0 mm diameter

\*No. of spots & diameter; detailed data sheets available at [www.provitro.com](http://www.provitro.com)

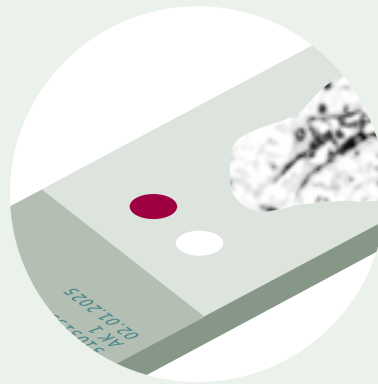
# iCon TMA – an effective IHC calibration tool



A

## Correct positive reaction

The antibody stained both the positive control spot and the examined tissue section whereas the negative control spot remained unstained, i.e. did not react with the antibody



B

## Correct negative reaction

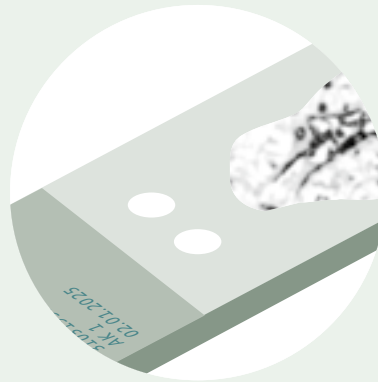
The expected reaction of the control spots confirms the absence of the antigen from the tissue section under examination



C

## Unspecific positive reaction

Staining of both control spots and the tissue section indicates an unspecific reaction during the staining process. Possible causes: endogenous tissue reaction to the detection system, inefficient antigen demasking

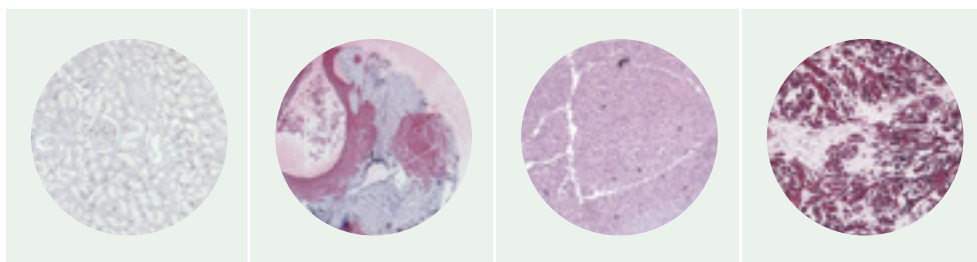


D

## Malfunction

No reaction of the positive control spot shows that the staining process was interrupted or incomplete. The presence of the antigen cannot be evaluated

Tissue slides for internal control of immunohistochemistry or in situ hybridisation. The slides contain specific positive and negative tissue spots providing enough space to add your tissue under investigation. The specificity of the reaction can be determined and the reactivity can be scored by comparing your sample with the iCon TMA spots.



iCon (internal control) TMA			
OFFER NO.	PRODUCT	SPECIFICATION*	PDF
401 5320	Manufacturing of iConTMA block	2 x 1.5 mm	
401 5340	Manufacturing of iConTMA block	4 x 1.5 mm	
401 5101	Antibody control TMA - Her2	2 x 1.5 mm	→
401 5201	Antibody control TMA - Her2	4 x 1.5 mm	→
401 5102	Antibody control TMA - CK7	2 x 2.0 mm	→
401 5103	Antibody control TMA - BCL2	2 x 2.0 mm	→
401 5104	Antibody control TMA - CD20	2 x 2.0 mm	→
401 5105	Antibody control TMA - CD117 (c-kit)	2 x 1.5 mm	→
401 5106	Antibody control TMA - S100	2 x 1.5 mm	→
401 5107	Antibody control TMA - p16	2 x 1.5 mm	→
401 5108	Antibody control TMA - p53	2 x 1.5 mm	→
401 5109	Antibody control TMA - p63	2 x 1.5 mm	→
401 5110	Antibody control TMA - ER	2 x 2.0 mm	→
401 5111	Antibody control TMA - PgR	2 x 1.5 mm	→
401 5112	Antibody control TMA - CK20	2 x 1.5 mm	→
401 5113	Antibody control TMA - CK5/6	2 x 1.5 mm	→
401 5114	Antibody control TMA - FLI	2 x 1.5 mm	→
401 5115	Antibody control TMA - actin	2 x 1.5 mm	→
401 5116	Antibody control TMA - PSA	2 x 1.5 mm	→
401 5117	Antibody control TMA - EGFR	2 x 1.5 mm	→
401 5222	Antibody control TMA - MUC1	4 x 1.5 mm	→
401 5223	Antibody control TMA - Ki67	4 x 1.5 mm	→
401 5224	Antibody control TMA - survivin	4 x 1.5 mm	→
401 5225	Antibody control TMA - W6/32	4 x 1.5 mm	→

# clinical samples and healthy donors

We offer a comprehensive range of clinical samples and healthy donors, carefully selected to meet the exacting standards of biomedical research and diagnostic applications. Our catalog features fully anonymized clinical samples with meticulous traceability, sourced from an extensive network of study sites.

**Clinical Samples:** We provide a diverse selection of clinical samples sourced from a variety of disease states and conditions. These samples are meticulously collected and preserved to maintain their integrity, ensuring they are suitable for detailed analysis. Our clinical samples support a wide spectrum of studies, from biomarker discovery to investigations into disease mechanisms and therapeutic development.

**Healthy Donors:** Our collection from healthy donors serves as an invaluable resource for comparative studies and normal physiological assessments. Each sample undergoes rigorous screening and selection to meet stringent quality standards, offering reliable reference materials for research in human biology, drug safety evaluations, and therapeutic efficacy studies.

## Key Features:

- **Fully Anonymized:** Clinical samples are provided with complete traceability and anonymization.
- **Extensive network:** Sourced from a wide network of study sites to ensure diversity and reliability.
- **Prospective Sample Collection:** Includes over 400 healthy donors aged 18-65, facilitating easy recall for ongoing research needs.
- **Customized Collections:** Annually, we conduct over 80 collections tailored to specific research requirements, supporting diverse biomedical investigations and diagnostic studies.

Discover how our diverse range of clinical samples can support and advance your research goals with confidence and precision.

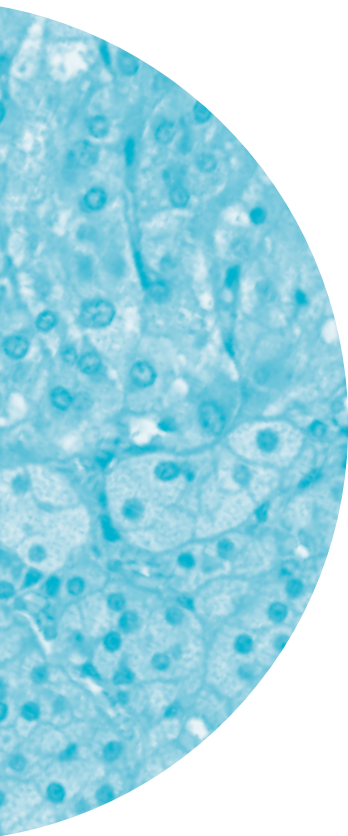


View into the FFPE block archive



histological,  
molecular  
and bioassay  
services

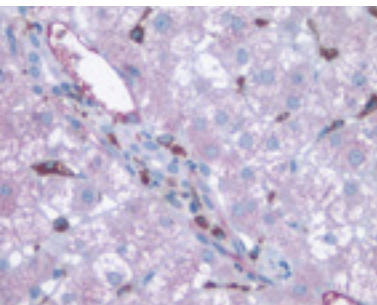




Provitro stands at the forefront of histological innovation, specializing in the development of both manual and automated IHC staining protocols. Our capabilities extend to antibody target validation on normal and tumor tissues, leveraging our proprietary tissue bank. Ensuring the highest accuracy, our advanced in-process control system (iConTMA®) virtually eliminates the risk of false-negative results. Beyond immunohistochemistry, Provitro offers a diverse suite of specialized services, including in situ hybridization, digital pathology, N-Terminal sequencing, and bioassays (RUO/GLP), catering to the complex needs of cutting-edge research.

immunohistochemical services	82
in situ hybridisation services	87
digital pathology	88
DNA and RNA extraction	90
n-terminal sequencing	91
bioassay (RUO/GLP)	92

# immunohistochemical services



Liver tissue, stained with CD68 and C4d

## Standard histological staining

The morphological structure of tissue can be depicted with high accuracy by means of histological sections. Staining results depend on numerous factors, including pH of the buffer solution, staining time and method of fixation. Haematoxylin, for example, is used to stain cell and tissue structures, such as cell nuclei, mitochondria, myelin, elastin and collagen fibres. Additional information may be obtained from counterstaining (differential staining), using a dyestuff in high contrast to hematoxylin stain. Counterstaining, using eosin, is a classical approach for which cationic structures are stained (e.g. proteins).

## Immunohistochemical staining

Identification of antisera, immunoglobulin fractions and monoclonal antibodies to a growing number of clinically relevant tissue antigens has led to an enormous enlargement of immunohistochemical analyses in both quality and quantity. Antibody titre and dilution as well as incubation time and temperature are closely linked to each other with regard to their influence on the quality of immunohistochemical staining. These factors are varied either separately of each other or each of them in itself to achieve clearly recordable differences in staining quality. Parameters are varied primarily for the purpose of accomplishing staining of optimum specificity against minimum background.

Immunohistochemistry		
OFFER NO.	PRODUCT	SPECIFICATION
901 0204	Paraffin embedding of formalin fixed tissue sample	
901 0205	Preparation of FFPE blocks from formalin-fixed cell pellets	
905 0101	Standard histological staining of 1 slide	Price per slide
905 0201	Immunohistochemistry service - target validation	Price per slide
905 0202	Immunohistochemistry service - antibody testing	Price per slide
905 0204	Peptide competition reaction	Price per reaction
905 0205	Verification of clinical status for defined study case	Price per case
905 0206	Systematic literature search for relevant antibodies	Price per antibody
905 0207	Development of staining protocol for a new antibody	Test samples included
905 0208	Adjustment of customer's staining protocol for defined antibody	Test samples included
905 0211	Manufacturing of 1 slide of tissue block	Price per slide
905 0401	Tissue slide scanning using automated digital histology system	Price per slide
905 0500	Evaluation by Pathologist	Price per slide

OFFER NO.	PRODUCT	SPECIFICATION
905 0501	Evaluation and encircling of relevant tissue area by pathologist	Price per slide
905 0502	Evaluation by Pathologist, IRS score for one cell compartment	Price per slide
905 0503	Evaluation by Pathologist, H Score for one cell compartment	Price per slide
905 0504	Evaluation by Pathologist, % positive cells	Price per slide
905 0505	Quality check and approval by Pathologist	Price per slide
905 0510	Handling and documentation of customer samples	Price per sample
905 0511	Case retrieval from provitro tissue bank	Price per block
905 0512	Selection of relevant FFPE tissue samples; transfer of basic clinical data into new data base	Price per block
905 0513	Selection of relevant cryo tissue samples; transfer of basic clinical data into new data base	Price per block
905 0514	Selection of relevant FFPE tissue samples with advanced clinical or pathological data	Price per block
905 0601	Final report including detailed staining protocol and representative photos	
905 0602	Report including data documentation	
905 0603	Report including photo and data documentation	
905 0604	Data collection and compilation in EXCEL spreadsheets	Price per case
905 1211	Manufacturing and provision of 1 FFPE tissue slide, normal tissue	Price per slide
905 1221	Manufacturing and provision of 1 cryo tissue slide, normal tissue	Price per slide
905 1311	Manufacturing and provision of FFPE tissue block, normal tissue	
905 1321	Manufacturing and provision of cryo tissue block, normal tissue	
905 2211	Manufacturing and provision of 1 FFPE tissue slide, pathological tissue	Price per slide
905 2214	Manufacturing and provision of 1 FFPE tissue slide, pathological tissue with advanced data	Price per slide
905 2221	Manufacturing and provision of 1 cryo tissue slide, pathological tissue	Price per slide
905 2311	Manufacturing and provision of FFPE tissue block, pathological tissue	
905 2321	Manufacturing and provision of cryo tissue block, pathological tissue	
909 0101	Hourly rate, scientific personnel	
909 0102	Hourly rate, technical personnel	
909 0200	Handling fee for preparing export documentation	

# staining process



Manual immunohistochemical staining  
Development of protocols accomplishing  
staining of optimum specificity against  
minimum background



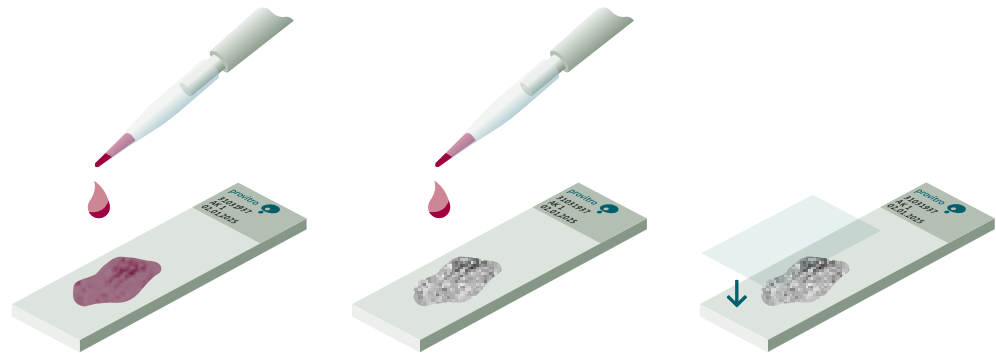
Automated immunohistochemical staining  
High throughput target validation with  
antibodies on normal and tumour tissue  
samples which may be provided from our  
own tissue bank



**1**  
Complete deparaffinisation  
of tissue section with xylol  
followed by descending  
ethanol series.

**2**  
Heat-induced or alternative  
demasking of FFPE tissue section  
(optimal thickness: 1  $\mu$ m)

**3**  
Incubation with antibody  
of interest (defined concen-  
tration and time of incuba-  
tion are essential)



**4**  
Application of detection  
system (substrate-  
chromogen-reaction)

**5**  
Counterstaining to colour  
the components that  
are not visualised by the  
principal stain

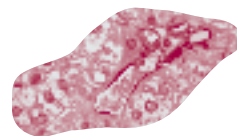
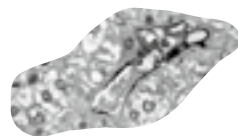
**6**  
Protection and conservation  
of the stained tissue section  
with embedding medium  
and cover slip



Selective antibody binding  
to specific antigens but not  
revealing the structural  
correlation yet

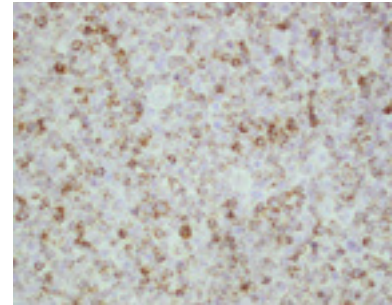


Counterstaining allows the  
allocation of antigens within  
the structural elements of the  
tissue sample investigated



# RNA in situ hybridisation

RNAscope® Technology is an in situ hybridisation (ISH) assay for detection of target RNA within intact cells. The assay represents a major advance in RNA ISH with its proprietary probe design to amplify target-specific signals but not background noise from non-specific hybridisation. And, the double Z probe design with its relatively short target region allows for successful hybridisation of partially degraded RNA.

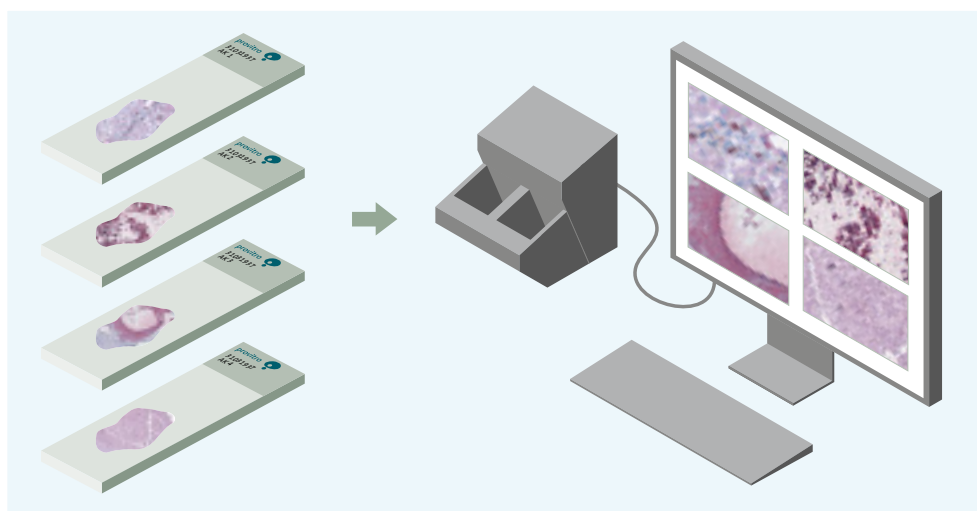


LRRC15 in mamma carcinoma

RNA in situ hybridisation		
OFFER NO.	PRODUCT	SPECIFICATION
905 1211	Manufacturing and provision of 1 FFPE tissue slide, normal tissue	Price per slide
905 1221	Manufacturing and provision of 1 cryo tissue slide, normal tissue	Price per slide
905 2211	Manufacturing and provision of 1 FFPE tissue slide, pathological tissue	Price per slide
905 2214	Manufacturing and provision of 1 FFPE tissue slide, pathological tissue with advanced data	Price per slide
905 2221	Manufacturing and provision of 1 cryo tissue slide, pathological tissue	Price per slide
906 0701	FISH analysis	Price per slide
906 0801	RNAscope CISH analysis, manual, w/o probe or controls	Price per slide
906 0802	RNAscope CISH analysis, automated, w/o probe or controls	Price per slide
906 0807	Development of RNAscope CISH protocol	Price per probe
906 0808	Adjustment of RNAscope CISH protocol	Price per probe
906 0851	Evaluation of CISH with specific probe by pathologist (microscope objective scoring)	Price per slide
906 0852	Evaluation of ISH RNA positive control (strong/mediate/weak/negative)	Price per slide
906 0853	Evaluation of ISH negative control (positive/negative)	Price per slide

# slide scanning, management and evaluation of slide images

Scan related services		
OFFER NO.	PRODUCT	SPECIFICATION
907 0401	Tissue slide scanning, standard, 20 × magnification	Price per slide
907 0402	TMA slide scanning, standard, 20 × magnification	Price per slide
907 0403	ISH analysis slide scanning, 40 × magnification	Price per slide
907 0301	Handling and documentation of customer scans	Price per scan
907 0302	Quality check of customer scans	Price per scan
907 0303	Checking of histopathological relevance of customer scans	Price per scan
907 0306	Access to digital scans in CaseCenter (limited to 3 month)	Price per scan
907 0307	Access to digital scans in CaseCenter (access renewal)	Price per scan
907 0500	Evaluation by Pathologist – tissue section	Price per slide
907 0501	Evaluation and annotation of relevant tissue area by Pathologist	Price per slide
907 0502	Evaluation by Pathologist, IRS score for one cell compartment	Price per slide
907 0503	Evaluation by Pathologist, H Score for one cell compartment	Price per slide
907 0504	Evaluation by Pathologist, % positive cells	Price per slide
907 0505	Evaluation by pathologist – TMA	Price per spot
907 0506	Evaluation by Pathologist, IRS score for one cell compartment – TMA	Price per spot
907 0507	Evaluation by Pathologist, H Score for one cell compartment – TMA	Price per spot
907 0508	Evaluation by Pathologist, % positive cells – TMA	Price per spot
907 0520	Teleconsulting with pathologist	

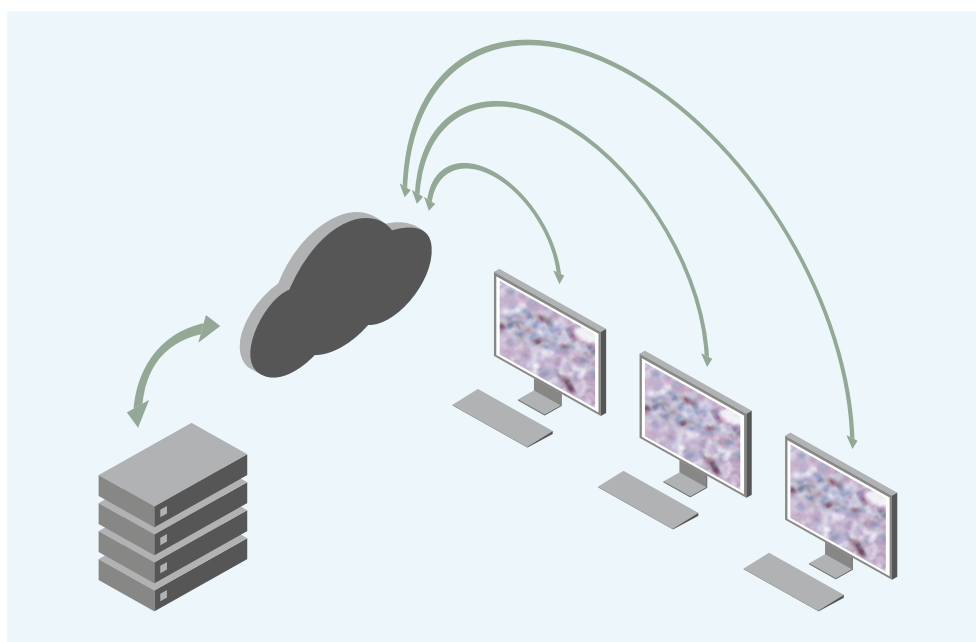


## Scanning process

To benefit from the advantages of digital pathology, IHC, ISH or otherwise stained slides and TMA will be scanned using an automated digital histology system, and the images will be uploaded to the web-based provitro CaseCenter.

## Key features

- Digitizing of up to 150 slides in one run
- Achieving up to 86x resolution
- Integrated bar code reader
- Automated detection of the sample on the slide

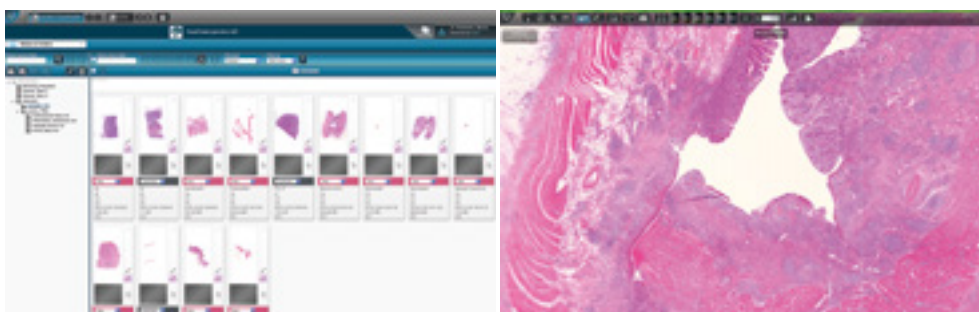


### provitro CaseCenter

The user has access to the scan images using the provitro platform for viewing and sharing the scan images. Offered multi viewer sessions enable our customers not only to view the slides simultaneously but to benefit from the in-program chat and teleconsulting functions.

### Key features

- Secure database
- Multiplatform slide viewer application
- Case report can be created or edited
- Server side barcode parsing



### CaseViewer

A digital microscope application named CaseViewer that enables the user to view and annotate the images. A maximum of nine slides of a single case can be viewed simultaneously on the main screen. The annotations, the current view image and the whole slide image can be exported either as a high-resolution TIFF image or as a JPEG snapshot.

# DNA and RNA extraction

Provitro offers services for total DNA or RNA isolation from cells and various tissue types. Purified DNA or RNA will be aliquoted as necessary for further investigation according to the customer's need and will be stored clearly labelled at -80°C. All processes are accomplished according to standard operation procedures (SOP). Quality control and product release are arranged according to clearly defined criteria.

Nucleic acid processing		
OFFER NO.	PRODUCT	SPECIFICATION
906 0101	RNA extraction from primary cells, cells not included	
906 0102	DNA extraction from primary cells, cells not included	
906 0201	RNA extraction from cell lines, cells not included	
906 0202	DNA extraction from cell lines, cells not included	
906 0311	Provisional gene targeting by RNAi in primary cells	
906 0312	Provisional gene targeting by RNAi in cell lines	
906 1211	Manufacturing and provision of 1 FFPE tissue slide, normal tissue	Price per slide, 5 µm section
906 1221	Manufacturing and provision of 1 cryo tissue slide, normal tissue	Price per slide, 5 µm section
906 2211	Manufacturing and provision of 1 FFPE tissue slide, pathological tissue	Price per slide, 5 µm section
906 2221	Manufacturing and provision of 1 cryo tissue slide, pathological tissue	Price per slide, 5 µm section
906 0501	RNA extraction from FFPE tissue	
906 0502	DNA extraction from FFPE tissue	
906 0601	Microdissection of relevant tissue area	Price per slide
906 1501	RNA extraction from FFPE tissue including quality control	Electrophoresis and Agilent
906 1502	DNA extraction from FFPE tissue including quality control	PCR GAPDH, real time PCR
906 1511	RNA extraction from cryo tissue including quality control	Electrophoresis and Agilent
906 1512	DNA extraction from cryo tissue including quality control	PCR GAPDH, real time PCR
906 2501	RNA quality control	Electrophoresis and Agilent
906 2502	DNA quality control	PCR GAPDH, real time PCR



Our N-Terminal Sequencing services specialize in determining the amino acid sequence at the N-terminus of proteins with high precision and accuracy. This technique is invaluable for identifying protein fragments, determining post-translational modifications, and elucidating protein structure-function relationships.

**Key features:**

- Amino Acid Sequence Determination: We provide detailed analysis to determine the sequence of amino acids at the N-terminus of proteins, crucial for understanding protein composition and function.
- Post-Translational Modification Identification: N-Terminal sequencing helps identify post-translational modifications, aiding in the characterization of protein variants and their biological activities.
- Expertise: Our team consists of experienced professionals skilled in N-Terminal sequencing techniques, ensuring reliable and reproducible results.
- Customized Solutions: Tailored services are available to meet specific research and development needs, accommodating diverse experimental requirements and objectives.

# bioassay (RUO/GLP)

## BIOASSAY (RUO/GLP)

Our Bioassay services offer robust capabilities for both Research Use Only (RUO) and Good Laboratory Practice (GLP) applications, providing essential insights into cellular and molecular interactions.

### Key Assays Offered:

- PBMC-Stimulation / Proliferation of CD3+ CD4+ Cells: Assessing immune response by stimulating and measuring proliferation of CD3+ CD4+ cells derived from Peripheral Blood Mononuclear Cells (PBMCs).
- DC:CD4+ Proliferation Assay (MLR): Evaluation of dendritic cell (DC) stimulation and subsequent proliferation of CD4+ T cells in Mixed Lymphocyte Reaction (MLR) assays.
- Restimulation Assay: Analysis of immune memory response through restimulation of previously exposed cells to antigens or stimuli.
- Cytotoxicity Assay: Measurement of cellular toxicity or killing capacity against target cells, crucial for evaluating immunological responses and potential therapies.
- Phospholipidosis Assay: Assessment of drug-induced phospholipidosis, aiding in drug safety evaluation and mechanism studies.

### Quality Assurance and Expertise:

- GLP Compliance: Bioassays conducted under GLP guidelines ensure data integrity and regulatory compliance for preclinical and clinical research.
- Customized Protocols: Tailored assay protocols to meet specific research objectives, optimizing sensitivity, specificity, and reproducibility.
- Scientific Excellence: Supported by a team of experienced scientists proficient in bioassay techniques, delivering reliable and insightful data interpretation.



# certificates and product information

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**Tissue Microarray**

Normal Tissue according to FDA panel  
Cat.-No.: TMA 401 1130 Lot: 439P

Slide Label									
	a	b	c	d	e	f	g	h	i
1	●	●	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●	●	●
3	●	●	●	●	●	●	●	●	●
4	●	●	●	●	●	●	●	●	●
5	●	●	●	●	●	●	●	●	●
6	●	●	●	●	●	●	●	●	●
7	●	●	●	●	●	●	●	●	●
8	●	●	●	●	●	●	●	●	●
9	●	●	●	●	●	●	●	●	●
10	●	●	●	●	●	●	●	●	●
11	●	●	●	●	●	●	●	●	●
12	●	●	●	●	●	●	●	●	●
13	●	●	●	●	●	●	●	●	●
14	●	●	●	●	●	●	●	●	●
15	●	●	●	●	●	●	●	●	●

Technical Information: 134 Spots (132 Spots requested)  
 - Spot diameter: 1.5 mm  
 - Fixation in 4% (w/v) neutral buffered formaldehyde solution  
 - Paraffin embedded  
 Tissue type validated by immunohistochemistry

in vitro laboratory usa cell p.

Not intended for use in diagnostic or therapeutic procedures

1 / 8

Excerpt from a TMA certificate providing information about position and characteristics of specific tissue spots assembled on this TMA slide.

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**Data Sheet**

Normal Tissue according to FDA panel Cat.-No.: TMA 401 1130 Lot: 439P

Pos.	Tissue Type	Organ	Specification	Sex	Age	pT	pN	pM	Grade
1a	normal	Adrenal Gland	N/A	f	59	N/A	N/A	N/A	N/A
1b	normal	Adrenal Gland	N/A	f	39	N/A	N/A	N/A	N/A
1c	normal	Adrenal Gland	N/A	m	68	N/A	N/A	N/A	N/A
1d	normal	Bladder (urinary)	N/A	m	65	N/A	N/A	N/A	N/A
1e	normal	Bladder (urinary)	N/A	m	72	N/A	N/A	N/A	N/A
1f	normal	Bladder (urinary)	N/A	m	57	N/A	N/A	N/A	N/A
1g	normal	Bone marrow	Core	f	44	N/A	N/A	N/A	N/A
1h	normal	Bone marrow	Core	m	37	N/A	N/A	N/A	N/A
1i	normal	Bone marrow	Core	f	25	N/A	N/A	N/A	N/A
2a	normal	Blood cells	N/A	f	38	N/A	N/A	N/A	N/A
2b	normal	Blood cells	N/A	f	33	N/A	N/A	N/A	N/A
2c	normal	Blood cells	N/A	f	50	N/A	N/A	N/A	N/A
2d	normal	Brain	Cerebellum	f	88	N/A	N/A	N/A	N/A
2e	normal	Brain	Cerebellum	m	72	N/A	N/A	N/A	N/A
2f	normal	Brain	Cerebellum	f	57	N/A	N/A	N/A	N/A
2g	normal	Brain	Cerebral cortex	f	88	N/A	N/A	N/A	N/A
2h	normal	Brain	Cerebral cortex	m	72	N/A	N/A	N/A	N/A
2i	normal	Brain	Cerebral cortex	f	56	N/A	N/A	N/A	N/A
3a	normal	Breast	N/A	f	23	N/A	N/A	N/A	N/A
3b	normal	Breast	N/A	f	36	N/A	N/A	N/A	N/A
3c	normal	Breast	N/A	f	73	N/A	N/A	N/A	N/A
3d	normal	Colon	Cecum	m	71	N/A	N/A	N/A	N/A

in vitro laboratory usa cell p.

Not intended for use in diagnostic or therapeutic procedures

2 / 8

Sample of product information on standard tissue microarrays. Detailed application protocols are available on request.

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### Tissue Microarray (TMA)

#### Standard TMA

**PRODUCT DESCRIPTION**

Tissue Microarrays are an ideal tool in high-throughput analysis for antigen retrieval or validation of newly identified pathogenetic genes. They provide a rapid solution for the localisation of DNA or protein molecules in various human tissues.

- Sectioning of tissue by a certificated pathologist
- Buffered Formalin fixation
- Paraffin wax embedded cores
- Easy to apply for standard IHC, ISH, FISH methods, detailed application protocols are available on request

**PRODUCT QUALITY CONTROL**

TMA manufacturing is conducted by certificated and skilful technologists using SOP (standard operating procedure) by use of regularly checked instruments and top-quality materials:

- Correct tissue sampling, area mapping and target tissue core punching using standardised and strict protocol supervised by certificated and examined pathologists
- Consistent labelling (batch number) during manufacturing process to secure retrace ability
- Examination of the first and each following 20th TMA block serial section by independent certificated pathologists after H&E staining following standard protocol
- Quality Control guarantees spot existence at min.95% level (missing spots are listed in Data sheet)

provitra is certified according to ISO 9001:2015 and EN ISO 13485:2016

**DATA SHEET INFORMATION**

Detailed pathological and clinical information will be supplied on batch specific data sheet

**Pathological Information:**

- Diagnosis (Type of Tumor / Tissue)
- Grading (G0-G4)
- Staging (pT, pN, pM)
- Staining other than H&E

**Clinical Information:**

- Patient Age, Patient Sex, Clinical Stage

**HANDLING INSTRUCTION**

This product is supposed to be used in a laboratory environment by trained technical personal. Be aware, that increased mechanical stress during TMA slide treatment may cause dislodging of spots! Do not touch the tissue material at all. All wash solutions and reagents should be applied gently to the slide.

**Pre-treatment of TMA slide for IHC:**

- Incubate the slide over night at 37-58°C
- Remove paraffin wax carefully (standard protocols of descending alcohol sequence) and rehydrate
- Unmask if necessary (follow the instruction in the datasheet of your application kit / antibody specifications)

**Staining Kit:**

- Each commercially available staining kit for Formalin Fixed Paraffin embedded tissue. Please follow the instructions in the kit.

**Storage:**

We recommend to store the TMA slides in its original packaging at room temperature. In the dark and dry to maintain the antigenicity. As long-term preservation of antigenicity of TMA's is still under investigation of our and numerous other research groups, slides should be used directly. To play safe we recommend not using slides of different orders for batch compare. To get more detailed information please contact us.

**FOR IN VITRO LABORATORY RESEARCH USE ONLY.**  
**NOT INTENDED FOR ANY HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USE**

Product Sheet / MANUAL INSTRUCTION      VERSION 3.1      01 / 2022

Sample of product information on internal control tissue microarrays (iCon TMA®). Detailed application protocols are available on request.

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### Human Tissue Microarray - iCon (internal control) TMA Block Her-2

REF / Cat.-No.: 401 5340      Lot: 339iC – Her2, 4spot

<b>iConTMA Label</b>	spot 4: positive	score 3+
• • • •	spot 3: positive	score 2+
1 2 3 4	spot 2: positive	score 1+
	spot 1: negative	score 0

Free Space for your tissue under investigation

Tissue type: Mamma

**Technical Information:**

- Core/Spot diameter: 1.5 mm
- Tissue Fixation in 4 % paraformaldehyde in PBS
- Tissue Paraffin embedded
- Tissue type validated by immunohistochemistry (Antibody-HER-2neu (ab) REF 750-4423 (Ventana))

**Take care: Product specific quality control only on first slide of the Block. Each further manufactured slide must be quality controlled and used on customer's own authority. For details, please contact our customer service.**

**For Handling instruction please see our iCon TMA Block Product Sheet or contact our customer service.**

**Antibody / Marker description:**

Her 2/neu (also known as ErbB-2) is a useful tool for the identification of overexpression of overexpression of ErbB2/HER-2 and family members. *Breast Cancer Res* 3 (6): 385-389

Hurtado A, Holmes KA, Gostlinger TR, Hutcheson RL, Nicholson RL, Brown M, Jiang L, Howat WL, Ali S, Carroll JS (November 2008) "Regulation of ERBB2 by oestrogen receptor-PAx2 determines response to tamoxifen". *Nature*

Xf 1e, Franz Pruefer, Robert Rast. (2005) "HER2-targeting antibodies modulate the cyclin-dependent kinase inhibitor p21kip1 via multiple signaling pathways". *Cell Cycle* 4 (4): 87-95.

Ménard S, Casalini P, Campiglio M, et al. (2005) "Role of HER2/neu in tumor progression and therapy". *Cell. Mol. Life Sci* 6 (12): 2965-78.

**FOR INTERNAL QUALITY CONTROL. RESEARCH USE ONLY.**

Intended for any human or animal in vitro research use only.      Version: 1.1      Stand: 12/2021

Product Data Sheet

# ordering information

## General

Placing of first orders by new customers and confirmation of them by the Company shall be in writing for legal validity. This request for the written form shall equally apply to any amendment or modification or collateral agreement to the Company's original quotation. Additional orders may be placed by mail, fax, phone or e-mail. Please, bear in mind that all orders will be handled on the basis of our General Standard Terms and Conditions.

## Freight charges

A flat rate of € 25.00 plus € 20.00 for refrigeration, if necessary, will be charged for shipment within the territory of the Federal Republic of Germany. Real expenses will be charged for any delivery beyond the German border. A mark-up of € 25.00 will be charged for any small-volume purchase worth up to € 175.00.

## Orders

The following details should be provided together with an order:

- Customer No.
  - Address for delivery and invoice
  - Offer No(s). of product(s) ordered
  - Number of products ordered
  - Name, phone and fax of contact person in charge of handling delivery
- A written order following a phone order should carry a note referring to the latter.

## Address for orders

provitro AG  
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Charitéplatz 1  
10117 Berlin, Germany  
Tel: +49.30.585 849 82  
Fax: +49.30.585 849 85  
E-mail: [sales@provitro.com](mailto:sales@provitro.com)  
[www.provitro.com](http://www.provitro.com)  
[www.provitro.de](http://www.provitro.de)  
[www.provitro.co.uk](http://www.provitro.co.uk)  
[www.provitro.jp](http://www.provitro.jp)

## Reservations

If products have been reserved for delivery, please add to your order Reservation and Batch No(s). of the product(s) reserved.

## Special offers, call-forward orders, bonus agreements

Orders placed in response to special offers, call-forward orders and bonus agreements must carry the applicable code numbers to ensure that you will enjoy the conditions agreed in the first place.

# alphabetical product index

Products		Products	
Access to digital scans in CaseCenter	88	Cryo solution (serum-free)	64
Adjustment of customer's staining protocol for defined antibody	84	Customised cell isolation of primary cells	33
Adjustment of RNAscope CISH protocol	87	Customised manufacturing of culture media	66
Airway epithelial cell growth medium	60	Data collection and compilation in EXCEL spreadsheets	77, 85
Airway epithelial cell growth medium, basal	60	Defined fibroblast maintenance medium	50
Airway epithelial cell growth medium, serum-free	32	Defined fibroblast maintenance medium, serum-free	26
Antibody control TMA - actin	80	Development of RNAscope CISH protocol	87
Antibody control TMA - BCL2	80	Development of staining protocol for a new antibody	84
Antibody control TMA - CD20	80	DNA extraction from cell lines, cells not included	90
Antibody control TMA - CD117 (c-kit)	80	DNA extraction from cryo tissue including quality control	90
Antibody control TMA - CK5/6	80	DNA extraction from FFPE tissue	90
Antibody control TMA - CK7	80	DNA extraction from FFPE tissue including quality control	90
Antibody control TMA - CK20	80	DNA extraction from primary cells, cells not included	90
Antibody control TMA - EGFR	80	DNA quality control	90
Antibody control TMA - ER	80	Electrophoresis and Agilent	90
Antibody control TMA - FLI	80	Endometrial carcinoma	73
Antibody control TMA - Her2	80	Endothelial cell growth medium, advanced	43
Antibody control TMA - Her2	80	Endothelial cell growth medium, advanced, FCS	22, 23
Antibody control TMA - Ki67	80	Endothelial cell growth medium, advanced, phenol red free	43
Antibody control TMA - MUC1	80	Endothelial cell growth medium, GMP	43
Antibody control TMA - p16	80	Endothelial cell proliferation medium	43
Antibody control TMA - p53	80	Endothelial cell proliferation medium, basal	43
Antibody control TMA - p63	80	Endothelial cell proliferation medium, FCS	22
Antibody control TMA - PgR	80	Endothelial cell proliferation medium, phenol red free	43
Antibody control TMA - PSA	80	Esophageal carcinoma	73
Antibody control TMA - S100	80	Est. of pellet culture, induction of cell differentiation and FFPE preservation	33
Antibody control TMA - survivin	80	Evaluation and annotation of relevant tissue area by Pathologist	88
Antibody control TMA - W6/32	80	Evaluation and encircling of relevant tissue area by pathologist	85
Array block preparation	77	Evaluation by Pathologist	84
Autoimmune diseases	74	Evaluation by Pathologist, H Score for one cell compartment	77, 85, 88
BIT-100 supplement	64	Evaluation by Pathologist, H Score for one cell compartment – TMA	88
Bladder Cancer TMA	73	Evaluation by Pathologist, IRS score for one cell compartment	77, 85, 88
Cancer stem cell medium, basal	61	Evaluation by Pathologist, IRS score for one cell compartment – TMA	88
Cancer stem cell medium (BIT-100)	61	Evaluation by Pathologist, % positive cells	77
Case retrieval from provitro tissue bank	85	Evaluation by Pathologist, % positive cells	85, 88
Cell culture test of new/toxic substances on defined cell lines	33	Evaluation by Pathologist, % positive cells – TMA	88
Cell culture test of new/toxic substances on primary cells	33	Evaluation by Pathologist – tissue section	88
Cervical carcinoma	73	Evaluation by pathologist – TMA	88
Checking of histopathological relevance of customer scans	88	Evaluation of CISH with specific probe by pathologist	87
Cholangiocarcinoma	73	Evaluation of ISH negative control	87
Chondrocyte growth medium	46	Evaluation of ISH RNA positive control	87
Chondrocyte growth medium, advanced	46	FDA-recommended normal tissue panel	72
Chondrocyte growth medium, advanced, FCS	24	Fibroblast growth medium	50
Chondrocyte growth medium, basal	46	Fibroblast growth medium, basal	50
Chondrocyte growth medium, basal, advanced	46	Fibroblast growth medium, basal, phenol red free	50
Chondrocyte growth medium, basal, phenol red free	46	Fibroblast growth medium, FCS	26
Chondrocyte growth medium, FCS	24	Fibroblast growth medium, phenol red free	50
Chondrocyte growth medium, GMP	46	Final report including detailed protocol and representative photos	33, 66
Chondrocyte growth medium, phenol red free	46	Final report including detailed staining protocol and representative photos	85
Colitis	74	FISH analysis	87
Colon carcinoma	73	Gastric Cancer TMA	73
Colon-UICC	73	Handling and documentation of customer samples	85

Products	
Handling and documentation of customer scans	88
Handling fee for preparing export documentation	85
Head & Neck Squamous Cell Carcinoma TMA	73
Hepatocellular Carcinoma TMA	73
HMSC adipogenesis induction medium	61
HMSC adipogenesis induction medium, basal	61
HMSC chondrogenesis induction medium	61
HMSC chondrogenesis induction medium, basal	61
HMSC osteogenesis induction medium	61
HMSC osteogenesis induction medium, basal	61
HMSC proliferation medium	61
HMSC proliferation medium, basal	61
Hourly rate, scientific personnel	85
Hourly rate, technical personnel	85
Human aortic endothelial cells	23
Human aortic smooth muscle cells	30
Human bronchial epithelial cells	32
Human bronchial smooth muscle cells	30
Human bronchial smooth muscle cells	30
Human CD4+ T cells (neg. selection), healthy donor	13
Human CD4+ T cells (pos. selection), healthy donor	13
Human CD8+ T cells (neg. selection), healthy donor	13
Human CD8+ T cells (pos. selection), healthy donor	13
Human CD14+ Monocytes (neg. selection), healthy donor	13
Human CD14+ Monocytes (pos. selection), healthy donor	13
Human CD19+ B cells (neg. selection), healthy donor	13
Human CD19+ B Cells (neg. selection), healthy donor	13
Human CD19+ B cells (pos. selection), healthy donor	13
Human CD56+ NK cells (neg. selection), healthy donor	13
Human CD56+ NK cells (pos. selection), healthy donor	13
Human chondrocytes	24
Human coronary artery endothelial cells	23
Human coronary artery smooth muscle cells	30
Human fibroblasts, dermis	26
Human fibroblasts, gingiva	26
Human Hematopoietic stem cells from Cord Blood, healthy donor	19
Human keratinocytes, dermis	27
Human keratinocytes, foreskin	27
Human Leukopak, diseased donor	8
Human Leukopak, healthy donor	8
Human mammary epithelial cells	32
Human melanocytes, foreskin	28
Human mesenchymal stem cells from Adipose Tissue, healthy donor	19
Human mesenchymal stem cells from Bone Marrow, diseased donor	19
Human mesenchymal stem cells from Bone Marrow, healthy donor	19
Human mesenchymal stem cells from Dental Pulpa, healthy donor	19
Human microvascular endothelial cells, dermis, adult	23
Human microvascular endothelial cells, dermis, juvenile	23
Human microvascular endothelial cells, foreskin	23
Human microvascular endothelial cells, lung	23
Human nasal epithelial cells	32
Human osteoblasts	25

Products	
Human Pan-T cells (neg. selection), healthy donor	13
Human Pan-T cells (pos. selection), healthy donor	13
Human PBMC, diseased donor	10
Human PBMC, healthy donor	10
Human PBMC, healthy donor, discovery	10
Human PBMC, healthy donor, ImmunoSafe-HLA1	13, 14
Human PBMC, healthy donor, ImmunoSafe-HLA2	13, 14
Human PBMC, healthy donor, standard	10
Human plasma, PBMC matched donor	10
Human pulmonary artery endothelial cells	23
Human pulmonary artery smooth muscle cells	30
Human saphenous vein endothelial cells	23
Human serum, PBMC matched donor	10
Human skeletal muscle cells	30
Human small airway epithelial cells	32
Human Stem Cells from Cord Blood, healthy donor	19
Human tracheal epithelial cells	32
Human tracheal smooth muscle cells	30
Human umbilical artery endothelial cells	22
Human umbilical artery smooth muscle cells	30
Human umbilical vein endothelial cells	22
Human umbilical vein endothelial cells, pooled	22
Human urothelial epithelial cells	32
Human urothelial smooth muscle cells	30
Human whole blood, healthy donor	7
Human whole blood, Serum, Plasma, diseased donor	7
Immunohistochemistry service - antibody testing	84
Immunohistochemistry service - target validation	84
Individual training course on cell culture methods	33
ISH analysis slide scanning, 40× magnification	88
Keratinocyte growth medium	52
Keratinocyte growth medium, basal	52
Keratinocyte growth medium, GMP	52
Keratinocyte growth medium, serum-free	27
Lung carcinoma	73
Lymphoma	73
Mamma carcinoma	73
Mammary epithelial cell growth medium	60
Mammary epithelial cell growth medium, basal	60
Mammary epithelial cell growth medium, serum-free	32
Manufacturing and provision of 1 cryo tissue slide, normal tissue	85, 87, 90
Manufacturing and provision of 1 cryo tissue slide, pathological tissue	85, 87, 90
Manufacturing and provision of 1 FFPE tissue slide, normal tissue	85, 87, 90
Manufacturing and provision of 1 FFPE tissue slide, pathological tissue	85, 87, 90
Manufacturing and provision of cryo tissue block, normal tissue	85
Manufacturing and provision of cryo tissue block, pathological tissue	85
Manufacturing and provision of FFPE tissue block, normal tissue	85
Manufacturing and provision of FFPE tissue block, pathological tissue	85
Manufacturing and provision of FFPE tissue core, normal tissue	77
Manufacturing and provision of FFPE tissue core, pathological tissue	78
Manufacturing of 1 slide of tissue block	84
Manufacturing of 1 slide of TMA block	77



Products	
Manufacturing of iConTMA block	77, 80
Manufacturing of recipient block	77
Media testing on defined cell lines	66
Media testing on primary cells	66
Melanocyte growth medium	28, 54
Melanocyte growth medium, basal	54
Microdissection of relevant tissue area	90
Microvascular endothelial cell growth medium	44
Microvascular endothelial cell growth medium, advanced	44
Microvascular endothelial cell growth medium, advanced, FCS	23
Microvascular endothelial cell growth medium, advanced, phenol red free	44
Microvascular endothelial cell growth medium, basal	44
Microvascular endothelial cell growth medium, basal, phenol red free	44
Microvascular endothelial cell growth medium, FCS	23
Microvascular endothelial cell growth medium, GMP	44
Microvascular endothelial cell growth medium, phenol red free	44
Multitumour - 4 organs	73
Multitumour - 10 organs	73
Multitumour - 12 organs	73
Myocardial hypertrophy II – right heart	75
Myocardial hypertrophy I – left heart	75
Myocardial infarction	75
Neuroendocrine differentiated Lung Tumor	73
Normal adult and foetal bone tissue	72
Normal adult and neonatal cartilage tissue	72
Normal adult brain tissue	72
Normal adult cartilage tissue I	72
Normal adult tissue I	72
Normal adult tissue II	72
Normal embryonic and foetal cartilage tissue II	72
Normal tissue, multi-species	72
Osteoblast growth medium	48
Osteoblast growth medium, advanced	48
Osteoblast growth medium, advanced, FCS	25
Osteoblast growth medium, basal	48
Osteoblast growth medium, basal, advanced	48
Osteoblast growth medium, FCS	25
Osteoblast growth medium, GMP	48
Ovarian carcinoma, matched normal	73
Pancreatic carcinoma, matched normal tissue and pancreatitis	73
Paraffin embedding of formalin fixed tissue sample	84
Passage kit 2	22 ff.
Passage kit 4	32
PCR GAPDH, real time PCR	90
Peptide competition reaction	84
Preparation of FFPE blocks from formalin-fixed cell pellets	33, 84
Prostate carcinoma	73
Provisional gene targeting by RNAi in cell lines	90
Provisional gene targeting by RNAi in primary cells	90
Punching & transfer of tissue	77
Quality check and approval by Pathologist	77, 85
Quality check of customer scans	88

Products	
Report including data documentation	85
Report including photo and data documentation	85
RNA extraction from cell lines, cells not included	90
RNA extraction from cryo tissue including quality control	90
RNA extraction from FFPE tissue	90
RNA extraction from primary cells, cells not included	90
RNA quality control	90
RNAscope CISH analysis, automated, w/o probe or controls	87
RNAscope CISH analysis, manual, w/o probe or controls	87
Selection of relevant cryo tissue samples	85
Selection of relevant FFPE tissue samples	77, 85
Skeletal carcinomas	73
Skeletal muscle cell differentiation medium	58
Skeletal muscle cell differentiation medium, serum-free	30
Skeletal muscle cell growth medium	58
Skeletal muscle cell growth medium, basal	58
Skeletal muscle cell growth medium, FCS	30
Smooth muscle cell growth medium	56
Smooth muscle cell growth medium, basal	56
Smooth muscle cell growth medium, basal, phenol red free	56
Smooth muscle cell growth medium, FCS	30
Smooth muscle cell growth medium, GMP	56
Smooth muscle cell growth medium, phenol red free	56
Standard histological staining of 1 slide	84
Stem cell rich tissue	72
Supplement kit for defined fibroblast maintenance medium	64
Supplement kit for endothelial cell growth medium, advanced	64
Supplement kit for endothelial cell proliferation medium	64
Supplement kit for melanocyte growth medium	64
Supplement kit for microvascular endothelial cell growth medium	64
Supplement kit for microvascular endothelial cell growth medium, advanced	64
Supplement kit for skeletal muscle cell differentiation medium	64
Supplement kit for skeletal muscle cell growth medium	64
Synovitis	74
Systematic literature search for relevant antibodies	84
Teleconsulting with pathologist	88
Thyroid carcinoma, matched normal tissue and Morbus Basedow	73
Tissue slide scanning, standard, 20 × magnification	88
Tissue slide scanning using automated digital histology system	84
TMA slide scanning, standard, 20 × magnification	88
TMA slide scanning using automated digital histology system	77
Transfer of marking of relevant tissue areas from H&E slide to donor block	77
Urothel epithelial cell growth medium, serum-free	32
Urothelial cell growth medium	60
Urothelial cell growth medium, basal	60
Vascular tissue	75
Verification of clinical status for defined study case	84

# general standard terms and conditions

## A. Scope of application

The following General Terms and Conditions (hereafter referred to as »AGB«) shall apply to all contractual business relations between provitro AG (hereafter referred to as »the Company«), on the one hand, and third parties (hereafter referred to as »Contractual Partner« or »Supplier«).

AGB shall be considered as legally accepted by the Contractual Partner or Supplier once a contract has been signed by the latter. AGB shall be valid also for future contracts even in cases in which no explicit reference to AGB has been repeated. Deviations from AGB shall not be effective unless such deviations have been confirmed in writing by the Company.

An explicit objection is hereby raised to General Terms and Conditions of Contractual Partners. They shall not be applicable unless the Company's consent to their validity has been expressed in writing.

## B. Supplies made by the Company

### I. Quotation, placing of order, acceptance of order

All Company's offers are without engagement and subject to confirmation with regard to price, quantity and date of delivery. Placing of orders with and confirmation by the Company shall be in writing for legal validity. This demand for the written form shall equally apply to any amendment or modification or collateral agreement to the Company's original quotation.

The Company shall remain the holder of rights of ownership, exploitation and copyrights on submitted drawings and other illustrations, descriptions as well as on other offer-related documents. Contractual Partners shall not be permitted to make said documentation accessible to a third party. This shall apply in particular to documents classified »Confidential« by the Company. Contractual Partners intending to pass said documentation to third parties shall obtain beforehand the Company's formal consent. Pricing is based on the current price list. Quoted prices are ex works or storeroom plus packaging and freight costs and value-added tax as is valid on the day of billing. Customs duties, tax as well as other fiscal or public charges, as the case may be, shall be borne by the Contractual Partner who will as well be responsible for cost of assembly or installation of equipment.

A flat rate of € 25.00 will be charged for shipment within the territory of the Federal Republic of Germany and of € 20.00 for refrigeration, if necessary, whereas real costs will be charged for deliveries to destinations outside Germany. A mark-up of € 25.00 will be charged for small-volume purchases worth up to € 175.00.

Invoice amount minus 2 % cash discount shall be due and payable within ten days from invoice date, while the full invoice amount shall be due and payable within 30 days from invoice date. Invoice amounts for services provided by the Company shall be excluded from cash discount but shall be fully payable immediately on receipt of the invoice. Punctuality of payment shall be counted by the date of credit entry to the Company's account.

The Company is authorised, for all their business transactions, to charge 5 % p.a. interest from the date of maturity. After 30 days from date of invoice, the company shall have the right to respond to delay of payment by charging interest of at least 8 % p.a. above the current base rate relative to the interest rate with which the Company has been charged for advance in current account.

Offset with the Contractual Partner shall be permissible only in a case of an undisputable and thus legally valid counterclaim. For cross-border deliveries requiring compliance with international trade or customs rules, the Contractual Partner shall take care at his own expense of proper observance of such rules.

### II. Delivery and service periods

The delivery periods and deadlines quote by the Company shall be of non-committal nature unless otherwise agreed in writing. Delay in delivery not caused by the Company shall extend delivery deadlines in an adequate manner. This shall apply in particular to any delay due to force majeure and other events with an impact on compliance with agreed delivery deadlines (plant interruption, strike, lockout or interruption of transport routes). It shall also apply to adverse events on the premises of suppliers or sub-suppliers to the Company. Should such delay-causing problem persist over a period of more than three months, both the Company and the Contractual Partner shall have the right to withdraw from the contract, after an adequate grace period had been agreed and expired. Should non-observance of a committed delivery and/or service deadline be attributable to the Company's fault, the Contractual Partner may assert a claim for compensation which shall be limited to 5 % maximum of the invoice amount for the service or delivery affected.

The consignment earmarked for delivery shall be stored at the expense and risk of the Contractual Partner if shipment is delayed on request of the latter or for any reason for which the latter is responsible. The Company's ready-for-shipment announcement shall be legally equivalent to shipment proper. Storage costs will be charged according to the current price list. The risk of accidental loss shall be borne by the Contractual Partner as soon as the Company has handed over the consignment to a forwarding agent, carrier or any other person or institution designed for transport. Said risk, at the latest, shall be borne by the Contractual Partner on physical delivery, which shall as well apply to partial delivery or situations in which after-sale services have been agreed, such as installation of equipment supplied or training of the Contractual Partner's personnel.

Goods for delivery may be insured If requested by the Contractual Partner, goods for delivery may be insured for coverage of theft, breakdown, transport, fire and water damage or other insurable risks. The Contractual Partner shall specify the desired insurance coverage to the Company on acceptance of the quotation. Such request shall be made in written form.

The risk of accidental loss of the consignment or part of it shall be borne by the Contractual Partner as of the ready-for-shipment date if causative circumstances for delay of shipment have to be attributed to the latter. Minor shortcomings or defects shall not justify refusal of acceptance by the Contractual Partner. Partial deliveries shall be permissible. The Contractual Partner shall undertake at his own expense and risk to return transport packs to the Company.

### III. Liability for defects

Claims for compensation shall expire one year after delivery to the Contractual Partner. Any claim for reduction of purchase price or withdrawal from the business concerned shall be ruled out once the claim for compensation has become statute-barred. The duties of investigation and notification of defects shall apply according to §§ 377, 378 HGB (German Commercial Code). Any defect or shortcoming detected by proper investigation, including faulty or insufficient delivery, shall be notified within three days.

Once defects or shortcomings have been established, the Company shall have the right to determine repair or other remedial action or shipment of faultless items. The Contractual Partner shall have the right to undertake remedial action only if the Company has been informed beforehand in written form and if a reasonable period of time for compensation has expired during which the Company would have had an opportunity for remedial action either by themselves or through sub-suppliers. Other ways of settlement shall be limited to situations forcing the Contractual Partner to exercise a right for self-help to avert disproportionate damage, e.g. due to unacceptable delay.

Claims for compensation, as may be raised against the Company by the Contractual Partner, shall be ruled out in the following cases of defect or damage: non-observance of the Company's operational or maintenance instructions, inappropriate use, faulty assembly by the Contractual Partner or third parties, natural wear, incorrect or negligent treatment, use of unsuitable tools, chemical, electrochemical or electric effects, inadequate modification or repair by the Contractual Partner or third parties without prior authorisation by the Company, unauthorised exchange of components or other change or use of supplies not in conformity with original specifications.

The same shall apply to cases of inappropriate storage or mistakes in start-up. Additional claims of the Contractual Partner, on whatever legal grounds (in particular claims for compensation relating to violation of ancillary contractual duties, unauthorised acts or other liability in tort and claims for cost and efforts, with exception of claims according to § 439, Section 2, BGB

[German Civil Code] shall be ruled out unless other conclusions may be justified. This shall apply, for example, to claims for damage outside the item supplied and claims for compensation for loss of profit.

The aforementioned exclusion of liability shall not apply in situations in which it would rule out or limit compensation for damage to life and limb or health due to culpable violation of duty by the Company or their legal representative or vicarious agent. It shall not apply either in situations in which it would result in disclaiming or limitation of liability for other damage due to the Company's or their legal representative's or vicarious agent's wilful or severely negligent violation of duty. The Company's liability for culpable violation of major contractual duties shall be limited to damage volumes predictable in common practice of contractual business relations. Liability shall not be excluded in cases of liability for damage to persons or material according to product liability law.

### IV. Other liability contexts

Other claims – for whatever legal arguments (especially claims for violation of ancillary contractual duties, illicit acts, delay, impossibility) shall be ruled out. This shall particularly apply to claims resulting from damage unrelated to a physical delivery and claims for compensation for lost profit. Exemption from liability shall not apply to damage attributable to wrongful intent or gross negligence by the Company or their representative or vicarious agent. It shall not apply either to situations in which it would result in ruling out or limiting compensation for culpable damage to life and limb or health. The Company's liability for culpable violation of major contractual duties shall be limited to damage volumes predictable in common practice of contractual business relations. Liability shall not be excluded in cases of liability for damage to persons or material according to product liability law.

Supplies made by the Company shall be covered by a liability insurance policy that has to be taken out at the supplier's expense.

Claims raised in compliance with product liability laws of countries other than Germany shall be limited to the Company's product liability insurance and its coverage versus such claims. Claims beyond such limitation shall be covered by the Contractual Partner at his own expense.

### V. Reservation of ownership

The items supplied (hereafter referred to as »reserved goods«) shall remain at the Company's disposal until all contractual requirements have been met by the Contractual Partner. The Contractual Partner has no right to pledge or transfer reserved goods for security or any other purpose. The Contractual Partner shall undertake to treat and handle such goods with due care and to take out insurance reinstatement policies to cover damage and loss due to fire, water and theft. The Contractual Partner shall be responsible for proper servicing and maintenance of such goods.

In the case of the Contractual Partner's default in payment, the Company shall have the right to take back reserved goods at their own expense. Take-back does not imply withdrawal from the contract. Should an order of attachment (levy of execution) be issued into reserved goods, the Company should be informed without delay to provide the latter with an opportunity for filing an action of intervention according to § 771 ZPO (German Code of Civil Procedure). The Contractual Partner shall be obliged to the Company for reimbursement of legal expenses, as the case may be.

Should the Company's right of disposal be invalidated due to connection or intermixing, it shall be agreed between the two contracting parties that the Contractual Partner's ownership of the new coherent product is transferred by relative value to the Company and henceforth is stored free of charge by the Contractual Partner for the Company. The Contractual Partner shall undertake provident assignment to the Company of all claims resulting from resale of reserved goods up to the relative value of the latter, which assignment shall be accepted by the Company. The Contractual Partner shall inform his resale partner of the assignment if so requested by the Company. The Contractual Partner is authorised to collect payment for resale.

#### C. Supplies made to (received by) the Company

Orders placed by the Company must be in written form for legal validity. Agreed deadlines shall be binding. The Company shall have the right to respond to delay of delivery by charging the supplier with a penalty per working day of delay amounting to 0.1 % relative to the total price up to an overall amount of 5 % of said total price. The Company reserves the right to withdraw from the contract and claim compensation, following an adequate grace period, if the supplier has to bear responsibility for non-performance of an agreed deadline.

The risk of accidental loss of a consignment shall not be borne by the Company until handover. The supplier shall take out at his own expense an insurance policy for the subject of supply.

The Company shall have free choice of demand between repair of defects or re-supply of a flawless item. If remedial action is chosen to repair a defect detected by the Company or any of their partners, the Company may ask for such remedial action to be performed on the premises of the supplier. If in such case defective goods have to be returned for repair to the supplier, the latter shall bear all related expenses. On completion of repair, the goods concerned shall be sent back to the Company or another appointed partner at the expense of the supplier.

Payment shall be due minus 2 % discount within ten days from receipt of invoice or without any discount within 30 days. The supplier shall not have the right to assign claims on the Company to a third party.

Rules that may exist in the supplier's standard terms and conditions regarding simple or extended reservation of ownership are explicitly rejected. Such rules are considered null and void for business with the Company. For border-crossing transactions for which international customs or other trade provisions may have to be observed, such observance shall be the supplier's responsibility at his own expense. Customs duties, fees, tax or other public charges shall be borne by the supplier. The same shall apply to expenses for assembly and installation of equipment.

#### D. Final clause

Contracts between the Company, on the one hand, and Contractual Partners and/or suppliers, on the other, shall be performed in conformity with German law and with explicit exclusion of provisions formulated in the Viennese Convention on Contracts for International Sale of Goods (CISG).

Berlin shall be the sole jurisdictional venue for settlement of any dispute that may result from business transactions with the Company.

Should any individual provision or any part of any provision, as established in these General Standard Terms and Conditions be or become void, illegal or unenforceable, the validity of the remaining provisions hereof shall in no way be affected. In such case the void and/or illegal and/or unenforceable provision or provisions shall be replaced by relative provisions coming as close as possible to the sense and spirit and purpose of this agreement. In the case of a gap, such gap shall be filled with a provision which had been agreed had the problem been considered beforehand. This shall apply also to cases in which ineffectiveness of a provision is based on normal performance or timing. In such case, the provision formulated in the first place shall be replaced by a provision as close as possible to intended and legally permissible performance and timing.

Status on January 2<sup>nd</sup>, 2024

## A. Geltungsbereich

Die sich anschließenden Allgemeinen Geschäftsbedingungen (im Folgenden auch »AGB« genannt) gelten für alle Vertragsverhältnisse, die zwischen der provitro AG (im Folgenden auch »Gesellschaft« genannt) und Dritten (im Folgenden auch »Vertragspartner« bzw. »Lieferant« genannt) zustande kommen.

Der Vertragspartner bzw. Lieferant erkennt die AGB mit Abschluss des Vertrags an. Die AGB gelten auch für künftige Vertragsschlüsse, auch wenn die AGB dabei nicht noch einmal ausdrücklich vereinbart werden.

Abweichungen von den nachfolgenden AGB sind nur wirksam, wenn die Gesellschaft diese Abweichungen schriftlich bestätigt hat.

Allgemeinen Geschäftsbedingungen des Vertragspartners wird hiermit ausdrücklich widersprochen. Diese gelten nur, wenn die Gesellschaft ihrer Geltung schriftlich zugestimmt hat.

## B. Lieferungen der Gesellschaft

### I. Lieferangebot, Auftragserteilung und Auftragsbestätigung

Alle Lieferangebote der Gesellschaft sind freibleibend hinsichtlich Preis, Menge und Lieferzeit. Auftragserteilungen an die Gesellschaft sowie Auftragsbestätigungen der Gesellschaft sind nur rechtswirksam, wenn sie schriftlich erfolgen. Das Schriftformerfordernis gilt für jegliche Ergänzung, Änderung oder Nebenabrede zum ursprünglichen Angebot der Gesellschaft.

Die Gesellschaft bleibt Inhaber der Eigentums-, Verwertungs- und Urheberrechte an übersandten Abbildungen, Zeichnungen, Beschreibungen, sonstigen Unterlagen sowie Angebotsunterlagen. Dem Vertragspartner ist es nicht gestattet, Dritten die vorbezeichneten Unterlagen zugänglich zu machen. Dies gilt insbesondere für Unterlagen, die von der Gesellschaft als »vertraulich« bezeichnet worden sind. Beabsichtigt der Vertragspartner der Gesellschaft eine Weitergabe an Dritte, so ist zuvor eine schriftliche Zustimmungserklärung der Gesellschaft einzuholen.

Lieferpreise gelten entsprechend der jeweils aktuellen Preisliste. Die Lieferpreise gelten ab Werk oder Lager zzgl. Verpackung- und Frachtkosten sowie der jeweils am Tag der Rechnungsstellung geltenden gesetzlichen Mehrwertsteuer. Etwaig anfallende Zölle, Gebühren, Steuern oder sonstige öffentliche Abgaben trägt der Vertragspartner.

Gleiches gilt für Kosten der Montage oder Aufstellung von Geräten.

Innerhalb der Bundesrepublik Deutschlands werden eine Versandkostenpauschale in Höhe eines Betrages von EUR 25,00 sowie bei Notwendigkeit eine Kühlpauschale in Höhe von EUR 20,00, außerhalb Deutschlands entsprechend der tatsächlich anfallenden Versandkosten erhoben. Bei einem Wert der Lieferung pro Einzelauftrag von  $\leq$  EUR 175,00 wird ein Mindermengenzuschlag in Höhe von EUR 25,00 berechnet.

Der Rechnungsbetrag ist innerhalb von zehn Tagen nach Rechnungsdatum mit 2 % Skonto, innerhalb von dreißig Tagen ohne Abzug fällig. Rechnungsbeträge für Dienstleistungen der Gesellschaft sind von der Skontoregelung ausgenommen. Diese Rechnungen sind sofort nach Erhalt ohne jeden Abzug fällig. Für die Rechtzeitigkeit der Zahlung kommt es auf den Eingang auf dem Konto der Gesellschaft an.

Die Gesellschaft ist im kaufmännischen Geschäftsverkehr berechtigt, Zinsen in Höhe von 5 % p. a. ab Fälligkeit zu fordern. Die Gesellschaft ist im kaufmännischen Geschäftsverkehr weiter bei Zahlungsverzug berechtigt, Zinsen in Höhe des ihr für die Inanspruchnahme eines Kontokorrentkredites berechneten Zinssatzes, mindestens in Höhe von acht Prozent über dem jeweils geltenden Basiszinssatz nach Ablauf von dreißig Tagen nach Rechnungsdatum zu fordern.

Eine Aufrechnung des Vertragspartners ist nur mit rechtskräftig festgestellten oder unstreitigen Gegenforderungen möglich. Besteht bei dem Vertragsverhältnis ein Auslandsbezug, der die Beachtung außenwirtschaftlicher und zollrechtlicher Vorschriften zur Folge hat, obliegt es dem Vertragspartner, für die Einhaltung der Vorschriften auf seine Kosten Sorge zu tragen.

### II. Liefer- und Leistungszeit

Die von der Gesellschaft genannten Lieferfristen und -termine sind unverbindlich, soweit dies nicht ausdrücklich schriftlich anders vereinbart worden ist. Lieferverzögerungen, die die Gesellschaft nicht zu vertreten hat, führen zu einer Verlängerung der Lieferfristen und -termine in angemessenem Umfang. Dies gilt insbesondere bei Verzögerungen aufgrund höherer Gewalt und allen anderen Ereignissen (insbesondere auch Betriebsstörungen, Streik, Aussperrungen oder Störung der Verkehrswege), wenn diese Ereignisse von Einfluss auf die Einhaltung der Liefer- und Leistungszeit sind. Dies gilt auch, wenn die Umstände bei Lieferanten bzw. Unterlieferanten der Gesellschaft eintreten.

Für den Fall, dass eine Behinderung über einen Zeitraum von mehr als drei Monaten andauert, sind die Gesellschaft und der Vertragspartner nach angemessener Nachfristsetzung berechtigt, vom Vertrag zurückzutreten. Für den Fall, dass die Gesellschaft die Nichteinhaltung verbindlich zugesagter Liefer- und Leistungsfristen zu vertreten hat, ist der Anspruch des Vertragspartners auf eine Verzugsentschädigung auf höchstens 5 % des Rechnungsbetrags der vom Verzug betroffenen Leistung oder Lieferung begrenzt.

Wird der Versand auf Wunsch des Vertragspartners oder aus einem von ihm zu vertretenden Grunde verzögert, lagert die zu liefernde Sache auf Kosten und Gefahr des Vertragspartners. Die von der Gesellschaft erteilte Anzeige der Versandbereitschaft steht dem Versand gleich. Lagerkosten gelten entsprechend der jeweils aktuellen Preisliste.

Die Gefahr des zufälligen Unterganges geht auf den Vertragspartner über, sobald die Gesellschaft die zu liefernde Sache dem Spediteur, dem Frachtführer oder der sonst zur Ausführung der Versendung bestimmten Person oder Anstalt ausgeliefert hat. Die Gefahr geht spätestens mit der Auslieferung der zu liefernden Sache an den Vertragspartner über, dies gilt auch dann, wenn lediglich Teillieferungen erfolgen oder die Gesellschaft noch weitere Leistungen, wie Aufstellung oder Einweisung in Geräte übernommen hat.

Auf Wunsch des Vertragspartners wird die Lieferung auf Kosten des Vertragspartners gegen Diebstahl-, Bruch-, Transport-, Feuer- und Wasserschäden oder ähnliche versicherbare Risiken versichert. Hierzu hat der Vertragspartner bei der Annahmeerklärung eines Lieferangebots der Gesellschaft schriftlich mitzuteilen, welche Versicherungen gewünscht sind. Hat der Vertragspartner Umstände, die zu einer Verzögerung des Versands führen, selbst zu vertreten, geht die Gefahr des zufälligen Untergangs des Versandguts vom Tage der Versandbereitschaft des Versandguts auf den Vertragspartner über. Unwesentliche Mängel berechtigen nicht zur Abnahmeverweigerung des Vertragspartners. Teillieferungen sind zulässig. Der Vertragspartner ist verpflichtet, die Transportverpackung auf seine Kosten und seine Gefahr an die Gesellschaft zurückzusenden.

### III. Mängelhaftung

Der Anspruch auf Nacherfüllung verjährt in einem Jahr nach Übergabe der gelieferten Sache an den Vertragspartner. Die Ansprüche auf Minderung und Ausübung eines Rücktrittsrechts sind ausgeschlossen, wenn der Nacherfüllungsanspruch verjährt ist. Es gelten die Untersuchungs- und Rügeobliegenheiten der §§ 377, 378 HGB. Die Anzeige eines aufgrund ordnungsgemäßer Untersuchung entdeckten Mangels – einschließlich Falsch- und Minderlieferung – hat innerhalb einer Frist von drei Tagen zu erfolgen.

Liegen Mängel vor, steht der Gesellschaft ein Wahlrecht darüber zu, ob für den Fall der Nacherfüllung Mangelbeseitigung oder Lieferung einer mangelfreien Sache erfolgen soll. Ein Selbstvornahmerecht des Vertragspartners zur Beseitigung eines Mangels besteht nur dann, wenn der Vertragspartner die Gesellschaft zuvor schriftlich über festgestellte Mängel in Kenntnis gesetzt hat und eine angemessene Frist zur Nacherfüllung abgelaufen ist, in der die erforderliche Zeit und Gelegenheit für die Gesellschaft bestand, die Mangelbeseitigung vorzunehmen oder durch den Lieferanten vornehmen zu lassen. Etwas anderes gilt nur dann, wenn es die Abwehr unverhältnismäßig großer Schäden oder der Verzug der Gesellschaft erfordert, dem Vertragspartner ein Selbsthilferecht einzuräumen.

Kommt es in Folge einer Nichtbeachtung der Betriebs- oder Wartungsanweisungen der Gesellschaft oder aufgrund von ungeeigneter oder unsachgemäßer Verwendung, fehlerhafter Montage durch den Vertragspartner oder Dritte, natürlicher Abnutzung, fehlerhafter oder nachlässiger Behandlung, ungeeigneter Betriebsmittel, chemischer, elektrochemischer oder elektrischer Einflüsse, unsachgemäßer und ohne vorherige Genehmigung der Gesellschaft erfolgter Änderungen oder Instandsetzungen durch den Vertragspartner oder Dritte, Veränderungen an der gelieferten Sache, hier insbesondere Auswechselung von Teilen oder Verwendung nicht der Originalspezifikation entsprechender Verbrauchsmaterialien, zu Mängeln der gelieferten Sache, bestehen keine Sachmängelansprüche des Vertragspartners gegen die Gesellschaft. Gleiches gilt bei unsachgemäßer Verwendung, Lagerung oder fehlerhafter Inbetriebnahme. Soweit sich aus Nachstehendem nichts anderes ergibt, sind weitere Ansprüche des Vertragspartners – gleich aus welchem Rechtsgrund (insbesondere Schadensersatzansprüche aus Verletzung vertraglicher Nebenpflichten, unerlaubter Handlung sowie sonstiger deliktischer Haftung und Ansprüche auf Aufwendungsersatz mit Ausnahme desjenigen nach § 439 Abs. 2 BGB) – ausgeschlossen. Dies gilt insbesondere für Ansprüche aus Schäden außerhalb der gelieferten Sache sowie für den Anspruch auf Ersatz entgangenen Gewinns.

Der vorstehende Haftungsausschluss gilt nicht, sofern er einen Ausschluss oder eine Begrenzung der Schadensersatzhaftung für die Verletzung des Lebens, des Körpers oder der Gesundheit zur Folge hätte, die auf einer schuldhaften Pflichtverletzung der Gesellschaft, ihres gesetzlichen Vertreters oder ihres Erfüllungsgehilfen beruht.

Der Haftungsausschluss gilt ebenfalls nicht, sofern er einen Ausschluss oder eine Begrenzung der Haftung für sonstige Schäden zur Folge hätte, die auf einer vorsätzlichen oder grob fahrlässigen Pflichtverletzung der Gesellschaft, ihres gesetzlichen Vertreters oder ihres Erfüllungsgehilfen beruht. Die Haftung wegen einer schuldhaften Verletzung von wesentlichen Vertragspflichten der Gesellschaft ist auf den vertragstypisch vorhersehbaren Schaden begrenzt. Der Haftungsausschluss gilt nicht für Fälle, in denen eine Haftung für Personen- und Sachschäden nach Produkthaftungsgesetz besteht.

### IV. Sonstige Haftung

Weitere Ansprüche – gleich aus welchem Rechtsgrund (insbesondere Ansprüche aus Verletzung vertraglicher Nebenpflichten, unerlaubter Handlung, Verzug, Unmöglichkeit) – sind ausgeschlossen. Dies gilt insbesondere für Ansprüche aus Schäden außerhalb der gelieferten Sache sowie für den Anspruch auf Ersatz entgangenen Gewinns. Dies gilt nicht, soweit die Schadensursache auf Vorsatz oder grober Fahrlässigkeit der Gesellschaft, ihres gesetzlichen Vertreters oder ihres Erfüllungsgehilfen beruht. Der vorstehende Haftungsausschluss gilt nicht, sofern er einen Ausschluss oder eine Begrenzung der Schadensersatzhaftung für die schuldhafte Verletzung des Lebens, des Körpers oder der Gesundheit zur Folge hätte. Die Haftung wegen einer schuldhaften Verletzung von wesentlichen Vertragspflichten der Gesellschaft ist auf den vertragstypisch vorhersehbaren Schaden begrenzt. Der Haftungsausschluss gilt nicht für Fälle, in denen eine Haftung für Personen- und Sachschäden nach Produkthaftungsgesetz besteht.

Für Lieferungen an die Gesellschaft gilt, dass der Lieferant verpflichtet ist, auf seine Kosten für Deckung einer Haftpflichtversicherung zu sorgen.

Ansprüche nach Produkthaftungsgesetzen anderer Staaten können nur in Höhe der gegen diese Ansprüche bestehenden Versicherungsdeckung der von der Gesellschaft abgeschlossenen Produkthaftpflichtversicherung geltend gemacht werden. Darüber hinausgehende Ansprüche sind vom Vertragspartner der Gesellschaft auf eigenen Kosten abzudecken.

### V. Eigentumsvorbehalt

Bis zur Erfüllung sämtlicher vom Vertragspartner zu erfüllenden Forderungen bleibt die gelieferte Sache (im Folgenden auch »Vorbehaltsgut« genannt) Eigentum der Gesellschaft. Der Vertragspartner ist nicht berechtigt, die im Eigentum der Gesellschaft stehende Sache zu verpfänden oder zur Sicherung zu übereignen.

Der Vertragspartner ist verpflichtet, das Vorbehaltsgut pfleglich zu behandeln und auf seine Kosten gegen Feuer-, Wasser- und Diebstahlschäden zum Neuwert zu versichern.

Der Vertragspartner ist verpflichtet, Service- und Wartungsarbeiten durchführen zu lassen.

Kommt der Vertragspartner in Zahlungsverzug, ist die Gesellschaft berechtigt, das Vorbehaltsgut auf ihre Kosten zurückzunehmen. In der Zurücknahme des Vorbehaltsguts liegt kein Rücktritt vom Vertrag. Der Vertragspartner ist bei Pfändungen in das Vorbehaltsgut verpflichtet, dies unverzüglich der Gesellschaft anzuzeigen, um ihr Gelegenheit zur Interventionsklage gem. § 771 ZPO zu geben. Der Vertragspartner ist insoweit verpflichtet, der Gesellschaft die ihr durch diese Rechtsverfolgung entstehenden Kosten zu erstatten.

Geht das Eigentum der Gesellschaft durch Verbindung oder Vermischung unter, vereinbaren die Vertragsparteien, dass das Eigentum des Vertragspartners an der neuen einheitlichen Sache wertanteilsgemäß auf die Gesellschaft übergeht und fortan vom Vertragspartner unentgeltlich für die Gesellschaft verwahrt wird.

Der Vertragspartner tritt schon jetzt die sich aus der Weiterveräußerung der gelieferten Sache ergebenden Forderungen in Höhe des Wertes der jeweils verkauften Vorbehaltware an die Gesellschaft ab, die diese Abtretung annimmt. Auf Verlangen der Gesellschaft ist der Vertragspartner verpflichtet, seinen Vertragspartner von der Abtretung an die Gesellschaft in Kenntnis zu setzen. Der Vertragspartner ist zum Einzug der Forderung ermächtigt.

### C. Lieferungen an die Gesellschaft

Bestellungen der Gesellschaft sind nur dann rechtswirksam, wenn sie schriftlich erfolgen. Vereinbarte Lieferfristen und -termine sind verbindlich.

Gerät der Lieferant mit der Lieferung in Verzug, ist die Gesellschaft berechtigt, eine Vertragsstrafe in Höhe von 0,1 % des Gesamtpreises der Lieferung pro Arbeitstag bis zu einer Gesamthöhe von 5 % des Gesamtpreises der Lieferung vom Lieferanten zu fordern. Für den Fall, dass der Lieferant die Nichteinhaltung von Lieferfristen und -terminen zu vertreten hat, behält sich die Gesellschaft – bei Vorliegen der Voraussetzungen der Setzung einer angemessenen Frist – vor, vom Vertrag zurückzutreten und Schadensersatz geltend zu machen.

Die Gefahr des zufälligen Unterganges geht erst mit der Übergabe der Sache an die Gesellschaft über. Der Lieferant ist verpflichtet, die zu liefernde Sache auf seine Kosten zu versichern.

Für Lieferungen an die Gesellschaft gilt, dass die Gesellschaft als Nacherfüllung ihrer Wahl Mangelbeseitigung oder Lieferung einer mangelfreien Sache verlangen kann. Wählt die Gesellschaft Mangelbeseitigung des von ihr oder einem Vertragspartner festgestellten Mangels, ist sie auch berechtigt, eine Reparatur des Lieferguts durch den Lieferanten direkt bei ihrem Vertragspartner zu verlangen. Wählt die Gesellschaft Mangelbeseitigung, erfolgt die Versendung des mangelhaften Lieferguts zur Mängelbeseitigung an den Lieferanten auf dessen Kosten. Der Lieferant versendet das Liefergut nach Durchführung der Mangelbeseitigung ebenfalls auf seine Kosten an die Gesellschaft oder den von dieser benannten Vertragspartner zurück.

Der Rechnungsbetrag ist innerhalb von zehn Tagen nach Rechnungseingang mit 2 % Skonto, innerhalb von dreißig Tagen ohne Abzug fällig. Der Lieferant ist nicht berechtigt, ihm gegen die Gesellschaft zustehende Forderungen an Dritte abzutreten.

Etwaig bestehenden Regelungen innerhalb der Geschäftsbedingungen des Lieferanten bezüglich eines einfachen oder verlängerten Eigentumsvorbehalts wird ausdrücklich widersprochen. Diese besitzen keine Geltung.

Besteht bei dem Vertragsverhältnis ein Auslandsbezug, der die Beachtung außenwirtschaftlicher und zollrechtlicher Vorschriften zur Folge hat, obliegt es dem Lieferanten, für die Einhaltung der Vorschriften auf seine Kosten Sorge zu tragen. Etwaig anfallende Zölle, Gebühren, Steuern oder sonstige öffentliche Abgaben trägt der Lieferant. Gleiches gilt für Kosten der Montage oder Aufstellung von Geräten.

### D. Schlussbestimmungen

Vertragsverhältnisse, die die Gesellschaft mit Vertragspartnern bzw. Lieferanten abschließt, unterliegen deutschem Recht unter Ausschluss der Regelungen des Wiener Übereinkommens über Verträge über den internationalen Warenkauf (CISG). Im kaufmännischen Verkehr ist als ausschließlicher Gerichtsstand für sämtliche sich aus dem Vertragsverhältnis ergebenden Streitigkeiten Berlin vereinbart.

Sollten einzelne Bestimmungen dieser AGB ganz oder teilweise unwirksam sein oder werden, oder sollte sich in diesen AGB eine Lücke befinden, so soll hierdurch die Gültigkeit der übrigen Bestimmungen nicht berührt werden. Anstelle der unwirksamen Bestimmung gilt diejenige wirksame Bestimmung als vereinbart, welche dem Sinn und Zweck der unwirksamen Bestimmung möglichst weitgehend entspricht.

Im Falle einer Lücke gilt diejenige Bestimmung als vereinbart, die dem entspricht, was nach Sinn und Zweck dieser Bestimmung vereinbart worden wäre, hätte man die Angelegenheit von vornherein bedacht. Dies gilt auch dann, wenn die Unwirksamkeit einer Bestimmung auf einem normierten Maß der Leistung oder Zeit beruht; es tritt in solchen Fällen ein dem gewollten möglichst nahe kommendes rechtlich zulässiges Maß der Leistung oder Zeit anstelle des vereinbarten.

## imprint

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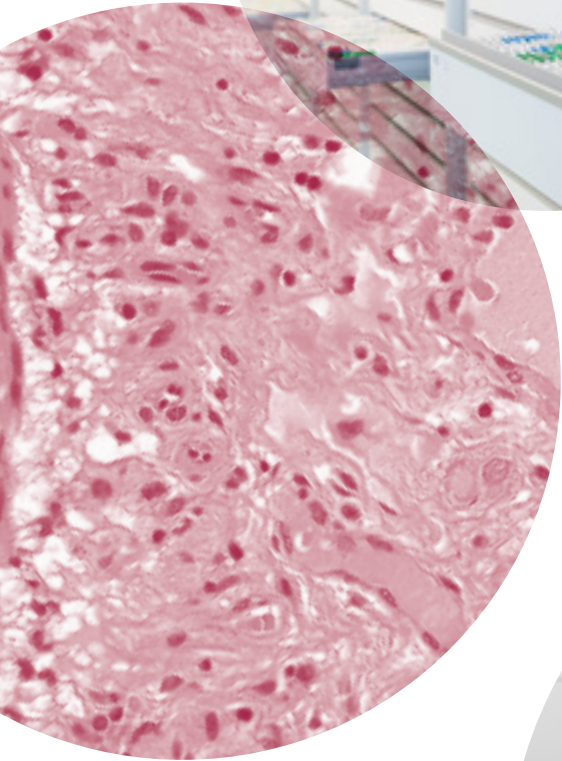
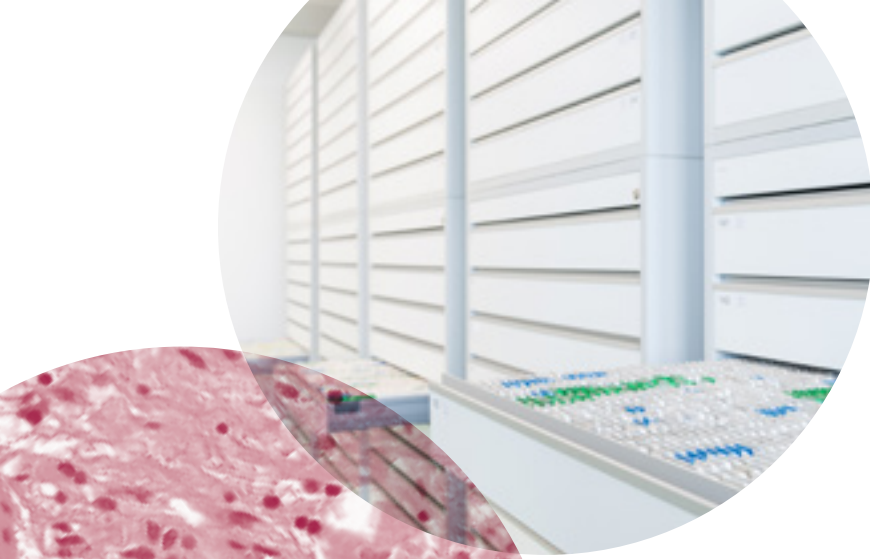
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