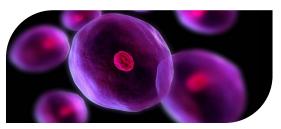
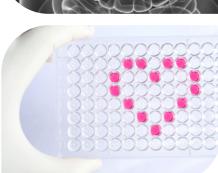
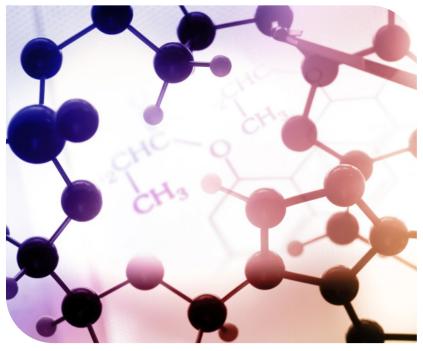
# Life Science Reagents

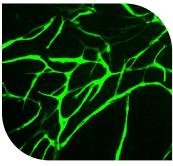












Caltag Medsystems are here to help you If you can't find what you're looking for - please give us a call and we'll source the product for you. Contact: techsupport@caltagmedsystems.co.uk

Fresh Human & Animal Blood
Fresh Human & Animal
Hepatocytes
Fresh & Frozen Skin
Human & Animal Tissue Samples
GFP Angiogenesis
CTC Isolation Devices

**Human & Animal Primary Cells** 

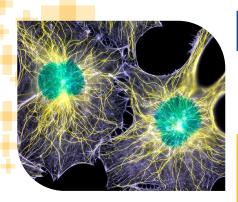
**Cell Expansion Service** 

Small Molecules & Biochemicals

Flow Cytometry

**ELISA Kits & Service** 





Human & Animal Primary Cells

300 types of reliable, high quality primary cells from 24 normal human and animal systems many of which are unique to the industry.

Caltag Medsystems has access to a large number of human and animal primary cells, sourced from a range of suppliers based in Europe and the USA.

With cutting-edge technologies and stringent standards of quality control, our suppliers are proud to provide researchers with over 300 types of reliable, high quality primary cells from 24 normal human and animal systems many of which are unique to the industry.

Primary cells are isolated from healthy human and animal tissues and cryopreserved at an early passage with outstanding cell viability. Customised cell isolation services, cell-derived DNA, RNA and proteins are also provided.

Our cell suppliers provide us cell inventories, allowing the selection of lots based on your donor inclusion and/or exclusion criteria.

## **Cell Systems**

We provide Cells, Specialised Media, RNA and DNA isolated from the following Cell Systems:

- Adipose Cell System
- Cardiac Cell System
- Dermal Cell System
- Endocrine Cell System
- Female Reproductive Cell System
- Gastrointestinal Cell System
- Hair Cell System
- Hepatic Cell System

- Lymphatic Cell System
- Male Reproductive Cell System
- Mesenchymal Stem Cell System
- Nervous Cell System
- Ocular Cell System
- Oral Cell System
- Placenta Cell System
- Pulmonary Cell System

- Renal Cell System
- Skeletal Cell System
- Skeletal Muscle Cell System
- Spleen Cell System
- Thyroid Cell System
- Tonsil Cell System
- Urethral Cell System
- Umbilical Cord Cell System

### **Cell Types**

We provide the following cell types:

- Adrenal Cortical Cells
- Annulus Fibrosus Cell
- Astrocytes
- Cardiac Myocytes
- Chondrocytes
- Endothelial Cells
- Epithelial CellsFibroblasts
- Hair Cells
- Hepatocytes
- Keratinocytes
- Keratocytes
- Melanocytes
- Meianocytes
   Meningeal Cells
- Mesangial Cells
- Mesenchymal Stem Cells

- Microglia
- Muscle Myoblasts
- Muscle Satellite Cells
- Neurons
- Nucleus Pulposus Cells
- Oligodendrocytes
- Osteoblasts
- Pericytes

- Perineurial Cells
- Preadipocytes
- Schwann Cells
- Skeletal Muscle Cells
- Smooth Muscle Cells
- Stellate Cells
- Stem Cell Derived Cells
- Synoviocytes
- Trabecular and Meshwork Cells
- Trophoblasts
- Urothelial Cells





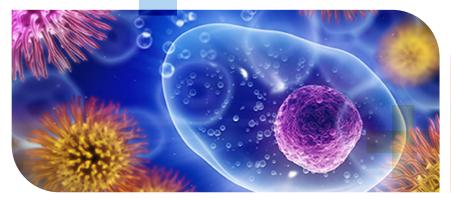
# Cell Expansion Service

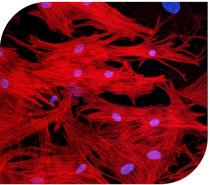
Caltag Medsystems specialises in the expansion and cryopreservation of human and animal cells.

Caltag Medsystems offers ready to use cryopreserved cells, prepared in single bulk batches.

All specialist expansion and cryopreservation of human and animal cells is performed in our labortaories in Buckingham, UK. Ready to use, bulk quantities of frozen cells facilitate screening performance by removing the variabilities of passage number, senescence and viability associated with parallel cell culture. They also allow streamlining of experimental workflows for high throughput screening campaigns and other large-scale research studies.

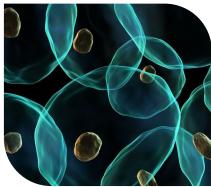
- Large scale expansion
- Allows streamlining of assay workflow
- Cryopreservation in convenient size aliquots
- QC tested for mycoplasma and viability







Caltag Medsystems are here to help you with your specific cell expansion requirements. Contact: techsupport@caltagmedsystems.co.uk



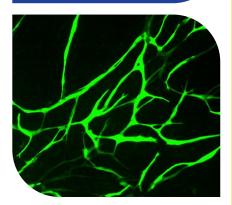


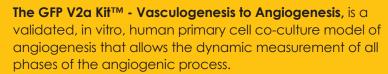


# **NEW GFP Labelled HUVECs:**

## Measure Angiogenesis in Real Time

**Dynamic** measurement of all phases of the angiogenic process.





Tubules formed contain a lumen and resemble the morphology and range of capillary lengths found in microvascular beds in vivo.

- It is a kinetic, quantitative, 24 well co culture angiogenesis model, utilising lentivirally infected human umbilical vein endothelial cells (HUVEC) expressing GFP co-cultured with normal human dermal fibroblasts (HDF).
- This co-culture model recapitulates all phases of the in vivo process from Vasculogenesis to angiogenesis (including: cell activation, cell proliferation, migration, elongation and anastomosis)
- Test compounds, media or tissue explants can be added at any point in the pathway - from the onset of Vasculogenesis through to advanced angiogenesis giving total assay flexibility
- The GFP- V2a Kit includes: +/- controls, media, supplements and a 24 well plate
- V2a Co-Culture Cells are provided frozen allowing long term storage and user determined assay initiation
- Tubule growth is quantifiable using AngioSys 2.0 Software

GFP V2a Kit Vasculogenesis to Angiogenesis

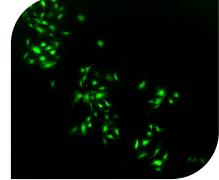
Product Code: ZHA-4100

Angiogenesis Tested GFP Human Umbilical Vein Endothelial Cells (HUVEC) are also now available, allowing for bespoke angiogenesis assay flexibility.

**GFP HUVEC** 

**Product Code: ZHC-2402** 







Caltag Medystems works with many suppliers across Europe and America to provide fresh and frozen, human blood products.

We have access to both healthy and diseased samples. Please contact us if you require diseased samples and a member of our technical team will be able to assist you.

In addition to human blood, Caltag Medsystems have established agreements to procure most human tissue phenotypes and have access to a wide range of human tissues and fluids. All donations are procured in line with the Caltag Medsystems ethical policy, which is available on our website. The tissues are available as in fresh or frozen formats, or a specific donor inclusion/exclusion requirement.

# **Human Blood Products**

### Haematopoietic Cells and Tissue

Caltag Medsystems is the exclusive European distributor for AllCells. AllCells specialises in the collection of haematopoietic and immunological cells from healthy donors and takes place in their onsite IRB approved clinical division. All Cells actively recruit donors to meet the customers donor inclusion/exclusion criteria. Matched samples are also available, allowing bone marrow and blood to be collected from the same donor. Donors are also available for recall purposes.

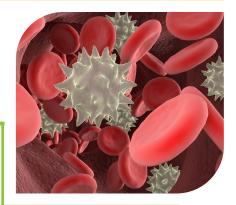




#### **Normal Peripheral Blood**

AllCells is able to provide whole peripheral blood directly collected from the vein, plus lymphocyte enriched samples collected through apheresis (LeukoPak). In addition, components of hematopoietic cells including various lymphoid and myeloid cells, platelets, plasma, and stem/ progenitor cells are also available.

- Fresh Apheresis Collection 1/4, 1/2, 1, bag
- Fresh Whole Blood
- Frozen Plasma
- Frozen Mononuclear Cells
- Frozen CD19+ B Cells
- Frozen CD19+/IaD Naïve B Cells
- Frozen CD3+ Pan T Cells
- Frozen CD4+ Helper T Cells
- Frozen CD4+/CD25+ T Cells
- Frozen CD4+/CD45RA+/CD25- Naïve Helper T Cells
- Frozen CD8+ Cytotoxic T Cells
- Frozen CD8+/CD45RA+ Naïve Cytotoxic T Cells
- Frozen CD56+ Natural Killer Cells
- Frozen Eosinophils
- Frozen CD14+ Monocytes



#### **Mobilised Peripheral Blood**

AllCells has been a pioneer in the use of G-CSF stimulation in normal healthy donors since 1998. The protocols in use for the Mobilised Peripheral Blood (MPB) products are IRB approved and overseen by clinical physicians. AllCells is one of only a few providers of Mobilised Peripheral Blood in the world.

- Fresh Apheresis Collection
- Frozen Mononuclear Cells
- Frozen CD34+ Cells
- Frozen CD14+ Monocytes

Other species, genus, packaging and anticoagulants are available upon request. Contact:

techsupport@caltagmedsystems.co.uk



#### Fresh Whole Blood

Caltag Medsystems works with suppliers based in Europe who provide fresh whole blood within 24 hours from collection of the donor. These suppliers can also provide frozen human plasma and serum in your required volume.

#### Fresh Healthy Human Whole Blood

Reference	Product
SAG017	Human CPD whole blood
SAG039	Human 2K-EDTA whole blood
SAG010	Human 3K-EDTA whole blood
SAG032	Human 2Na-EDTA whole blood
SAG016	Human heparin lithium whole blood
SAG062	Human heparin lithium whole blood, pool of donors
SAG025	Human heparin sodium whole blood
SAG019	Human sodium citrate whole blood
SAG047	Human CTAD whole blood
SAG029	Frozen Human 2K-EDTA whole blood
SAG033	Frozen Human 2Na-EDTA whole blood
SAG011	Frozen human heparin lithium whole blood
SAG063	Frozen human heparin lithium whole blood, pool of donors
SAG030	Frozen human heparin sodium whole blood

#### Frozen Human Plasma

Reference	Product
PLA015	Human, CPD plasma, single donor
PLA016	Human CPD plasma, pool of donors
PLA151	Human 2K-EDTA plasma, single donor
PLA152	Human 2K-EDTA plasma, pool of donors
PLA021	Human 3K-EDTA plasma, single donor
PLA022	Human 3K-EDTA plasma, pool of donors
PLA012	Human 2Na-EDTA plasma, single donor
PLA013	Human 2Na-EDTA plasma, pool of donors
PLA240	Human heparin lithium plasma, single donor
PLA020	Human heparin lithium plasma, pool of donors
PLA007	Human heparin sodium plasma, single donor
PLA008	Human heparin sodium plasma, pool of donors
PLA161	Human sodium citrate plasma, single donor
PLA162	Human sodium citrate plasma, pool of donors
PLA061	Human CTAD plasma, single donor

#### Frozen Human Serum

Reference	Product
SER020	True Human Serum, single donor
SER040	True Human Serum, pool of donors
SER034	True Human Serum, pool of donors, heat inactivated, filtered
SER018	True Human A Serum, single donor
SER019	True Human A Serum, pool of donors
SER004	True Human AB Serum, single donor
SER005	True Human AB Serum, pool of donors
SER016	True Human AB Serum, pool of donors, heat inactivated, filtered

#### **Bone Marrow**

AllCells is able to provide whole bone marrow aspirate and bone marrow cells collected from healthy individuals. These bone marrow products are available in fresh and frozen format. Bone Marrow is drawn into a 60cc syringe containing heparin (80 U/ mL of bone marrow) from the posterior iliac crest, 25mL/site, from a maximum of four sites.

- Fresh Whole Bone Marrow
- Frozen Mononuclear Cells
- Frozen CD34+ Cells
- Frozen mesenchymal stem cells

#### **Cord Blood**

AllCells is able to provide cord blood cells from healthy individuals. These include umbilical cord stem cells, cord blood mononuclear cells and additional products.

- Frozen Mononuclear Cells
- Frozen CD34+ Cells
- Frozen CD34 Depleted Mononuclear Cells
- Frozen CD4+ Helper T Cells
- Frozen CD8+ Cytotoxic T Cells
- Frozen CD14+ Monocytes

#### **Diseased Samples**

Caltag Medsystems have access to diseased blood samples, with examples of the types of diseases listed below:

Haematological Cancers: ALL, AML, CLL, CML, MM, NHL, Follicular Lymphoma (FLL), Diffuse Large B Cell Lymphoma (DLBCL), Mantle Cell Lymphoma (MCL), Burkitt's Lymphoma (BL), Waldenstrom's Macroglobulinemia (WM), Myelofibrosis (MF)

Autoimmune Diseases: Rheumatoid Arthritis, Osteoarthritis, Lupus, Psoriasis, Crohn's Disease, IBD, Ulcerative Colitis, Diabetes, Multiple Sclerosis

Infectious Disease: HIV1/2, HBV, HCV.

We are able to collect custom requests, so please contact us if you require a sample from a diseased patient or a sample that is not listed.



# Haematopoietic Cells:

# Delivery in Europe Within 24 Hours

AllCells specialises in haematopoietic and immunological cells collected from healthy donors. They are able to isolate and purify a wide selection of human primary cells from a variety of tissues including: Cord Blood, Whole Blood, Peripheral Blood, Mobilised Peripheral Blood, and Bone Marrow.



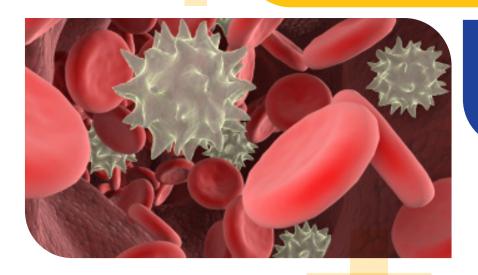
## Caltag Medsystems are the exclusive European distributor for AllCells products.

We now stock the most popular haematopoietic cell types, including CD34+, MNCs, T cells & Monocytes, supplied by AllCells. This allows delivery to our European customers within 24 hours.

Available for next day delivery:

- MNC's from Peripheral Blood: 50 million and 100 million cells / vial
- CD34+ cells from Peripheral Blood (mobilised):
   0.5 million and 1 million cells / vial
- CD34+ cells from Bone Marrow: 0.25 million and 1 million cells / vial
- CD14+ cells from Peripheral Blood: 10 million cells / vial
- CD3+ cells from Peripheral Blood: 25 million cells / vial

Our Human Tissue Authority (HTA) license, allows us to store human tissue in our liquid nitrogen tanks in the UK.



Let us know if you require any other cell types or tissues to be stored in the UK, for convenient, rapid delivery. Contact: techsupport@ caltagmedsystems.co.uk



Fresh and Frozen Blood from Rat, Mouse, Dog, Rabbit, Minipig & Monkey

# Animal Blood Products

Caltag Medystems works with many suppliers across Europe and America to provide fresh and frozen, animal blood products.

An overview of the products that we can supply can be found below. If you require a sample that is not on the list, please do get in touch as one of suppliers may be able to offer it as a custom request. All samples are available in 10ml tubes.

#### Fresh Animal Blood

IICSII AIIIII	idi biood
Reference	Product
SAG096	Heparin Lithium Whole blood of Sprague Dawley rat
SAG097	Heparin Sodium Whole blood of Sprague Dawley rat
SAG098	EDTA-2Na Whole blood of Sprague Dawley rat
SAG099	EDTA-3K Whole blood of Sprague Dawley rat
SAG087	EDTA-2K Whole blood of Sprague Dawley rat
SAG086	Heparin Lithium Whole blood of Wistar rat
SAG085	Heparin Sodium Whole blood of Wistar rat
SAG084	EDTA-2Na Whole blood of Wistar rat
SAG083	EDTA-3K Whole blood of Wistar rat
SAG082	EDTA-2K Whole blood of Wistar rat
SAG091	Heparin Lithium Whole blood of SWISS (CD1) mouse
SAG092	Heparin Sodium Whole blood of SWISS (CD1) mouse
SAG093	EDTA-2Na Whole blood of SWISS (CD1) mouse
SAG094	EDTA-3K Whole blood of SWISS (CD1) mouse
SAG095	EDTA-2K Whole blood of SWISS (CD1) mouse
SAG149	Heparin Lithium Whole blood of C57BL/6 mouse
SAG156	Heparin Sodium Whole blood of C57BL/6 mouse
SAG159	EDTA-2Na Whole blood of C57BL/6 mouse
SAG158	EDTA-3K Whole blood of C57BL/6 mouse
SAG157	EDTA-2K Whole blood of C57BL/6 mouse
SAG055	Heparin Lithium Whole blood of Beagle dog
SAG054	Heparin Sodium Whole blood of Beagle dog
SAG053	EDTA-2Na Whole blood of Beagle dog
SAG052	EDTA-3K Whole blood of Beagle dog
SAG051	EDTA-2K Whole blood of Beagle dog
SAG103	Heparin Lithium Whole blood of New Zealand Rabbit
SAG102	Heparin Sodium Whole blood of New Zealand Rabbit
SAG104	EDTA-2Na Whole blood of New Zealand Rabbit
SAG105	EDTA-3K Whole blood of New Zealand Rabbit
SAG106	EDTA-2K Whole blood of New Zealand Rabbit
SAG077	Heparin Lithium Whole blood of Göttingen minipig
SAG076	Heparin Sodium Whole blood of Göttingen minipig
SAG0750	EDTA-2Na Whole blood of Göttingen minipig
SAG072	EDTA-3K Whole blood of Göttingen minipig
SAG071	EDTA-2K Whole blood of Göttingen minipig
SAG044	Heparin Lithium Whole blood of Cynomolgus Monkey
SAG046	Heparin Sodium Whole blood of Cynomolgus Monkey
SAG042	EDTA-2Na Whole blood of Cynomolgus Monkey
SAG040	EDTA-3K Whole blood of Cynomolgus Monkey
SAG041	EDTA-2K Whole blood of Cynomolgus Monkey





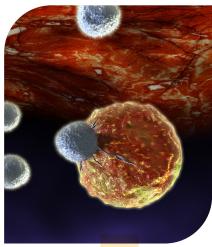
Other species, genus, packaging and anticoagulants are available upon request. Contact:

techsupport@caltagmedsystems.co.uk



#### ANIMAL BLOOD PRODUCTS





#### Frozen Animal Plasma

Reference	Product
PLA095	Heparin Lithium Plasma of Sprague Dawley rat, 10ml
PLA403	Heparin Sodium Plasma of Sprague Dawley rat, 10ml
PLA097	EDTA-2Na Plasma of Sprague Dawley rat, 10ml
PLA099	EDTA-3K Plasma of Sprague Dawley rat, 10ml
PLA092	Heparin Lithium Plasma of Wistar rat, 10ml
PLA091	Heparin Sodium Plasma of Wistar rat, 10ml
PLA100	EDTA-2Na Plasma of Wistar rat, 10ml
PLA096	EDTA-3K Plasma of Wistar rat, 10ml
PLA101	EDTA-2K Plasma of Wistar rat, 10ml
PLA084	Heparin Lithium Plasma of Swiss/CD1 mouse, 10ml
PLA086	Heparin Sodium Plasma of Swiss/CD1 mouse, 10ml
PLA085	EDTA-2Na Plasma of Swiss/CD1 mouse, 10ml
PLA082	EDTA-3K Plasma of Swiss/CD1 mouse, 10ml
PLA089	EDTA-2K Plasma of Swiss/CD1 mouse, 10ml
PLA0286	Sodium Citrate Plasma of Swiss/CD1 mouse, 10ml
PLA281	Heparin Lithium Plasma of C57BL/6 mouse, 10ml
PLA282	Heparin Sodium Plasma of C57BL/6 mouse, 10ml
PLA283	EDTA-2Na Plasma of C57BL/6 mouse, 10ml
PLA284	EDTA-3K Plasma of C57BL/6 mouse, 10ml
PLA285	EDTA-2K Plasma of C57BL/6 mouse, 10ml
PLA055	Heparin Lithium Plasma of Beagle dog, 10ml
PLA054	Heparin Sodium Plasma of Beagle dog, 10ml
PLA056	EDTA-2Na Plasma of Beagle dog, 10ml
PLA051	EDTA-3K Plasma of Beagle dog, 10ml
PLA052	EDTA-2K Plasma of Beagle dog, 10ml
PLA180	Heparin Lithium Plasma of New Zealand Rabbit, 10ml
PLA182	Heparin Sodium Plasma of New Zealand Rabbit, 10ml
PLA183	EDTA-2Na Plasma of New Zealand Rabbit, 10ml
PLA185	EDTA-3K Plasma of New Zealand Rabbit, 10ml
PLA184	EDTA-2K Plasma of New Zealand Rabbit, 10ml
PLA074	Heparin Lithium Plasma of Göttingen minipig, 10ml
PLA274	Heparin Sodium Plasma of Göttingen minipig, 10ml
PLA273	EDTA-2Na Plasma of Göttingen minipig, 10ml
PLA272	EDTA-3K Plasma of Göttingen minipig, 10ml
PLA271	EDTA-2K Plasma of Göttingen minipig, 10ml
PLA046	Heparin Lithium Plasma of Cynomolgus Monkey, 10ml
PLA0747	Heparin Sodium Plasma of Cynomolgus Monkey, 10ml
PLA049	EDTA-2Na Plasma of Cynomolgus Monkey, 10ml
PLA043	EDTA-3K Plasma of Cynomolgus Monkey, 10ml
PLA402	EDTA-2K Plasma of Cynomolgus Monkey, 10ml
PLA044	CPD Plasma of Cynomolgus Monkey, 10ml

Other species, genius, packaging and anticoagulants are available upon request, please contact. Contact: techsupport@ caltagmedsystems.co.uk

#### **Frozen Animal Serum**

Reference	Product
SER063	Serum of Sprague Dawley rat, 10ml
SER067	Serum of Wistar rat, 10ml
SER086	Serum of Swiss/CD1 mouse, 10ml
SER088	Serum of C57BL/6 mouse, 10ml
SER068	Serum of Beagle dog, 10ml
SER071	Serum of New Zealand rabbit, 10ml
SER089	Serum of Göttingen minipig, 10ml
SER053	Serum of Cynomolgus monkey, 10ml



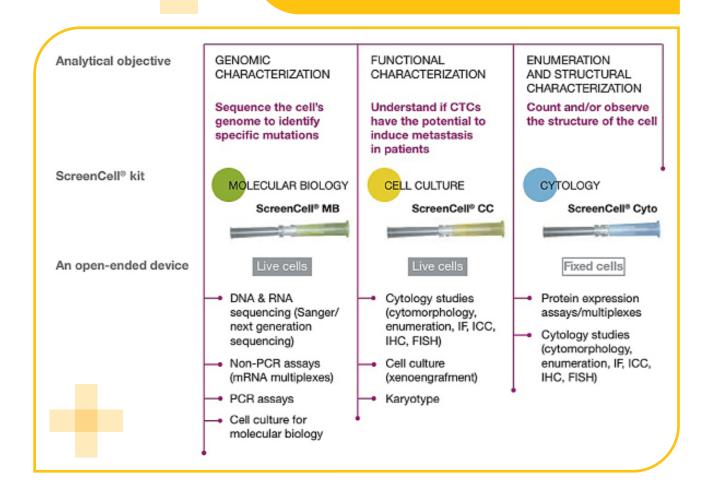
# Liquid Biopsy:

## **Isolate Circulating Tumour Cells**

Stabilise Circulating
Tumour Cells in Blood
Samples using a
Simple Non-Invasive
Technology.

Caltag Medsystems distribute the ScreenCell circulating tumour cell isolation devices into the UK and Irish market. ScreenCell® devices are a simple and innovative non-invasive technology for isolating Circulating Rare Cells (CRCs) from whole blood, and potentially any atypical cell from biological fluids. The ScreenCell disposable devices allow for full phenotypical, genotypical, and functional characterisation of isolated cells.

- Disposable devices independent of any instrumentation
- Filter in only 3 minutes
- Filter fixed or live cells
- Low cost alternative to other methods



Caltag Medsystems are here to help you with your specific requirements.



#### LIQUID BIOPSY: ISOLATE CIRCULATING TUMOUR CELLS

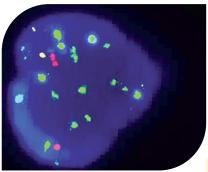
# Stabilisation of Circulating Tumour Cells

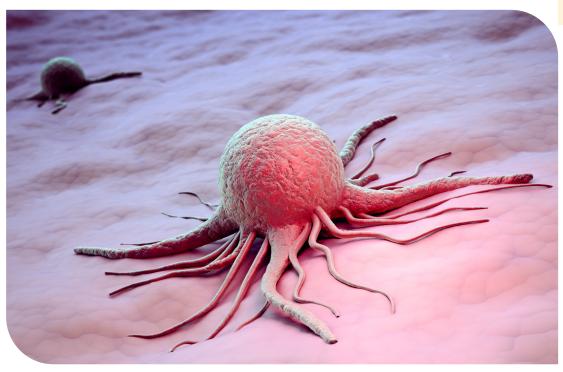
TransFix has been used for the stabilisation of circulating tumour cells in blood samples. TransFix stabilised circulating tumour cells are compatible with a range of CTC isolation and analysis methods.

Caltag Medsystems provide TransFix and Circulating Tumour Cell TransFix/EDTA Vacuum Blood Collection Tubes (CTC-TVTs).

CTC-TVTs are 9ml blood collection tubes prefilled with an optimised volume of TransFix for the collection and stabilisation of circulating tumour cells in whole human blood. They allow stabilisation of CTCs for up to 5 days at ambient temperature (18-25°C), immediately preventing the degradation of CTCs and CTC antigens, allowing time to isolate and analyse these rare cells.











Biopredic International, provide a wide range of high quality fresh and cryopreserved hepatocytes to meet our customers in-vitro application requirements



# Fresh Human Hepatocytes

Primary hepatocytes are widely used as the gold-standard in-vitro liver model for biological, pharmacological and toxicological studies in drug discovery and development.

#### Key advantages of hepatocytes produced at Biopredic Int.

- A regular supply of fresh human primary hepatocytes, i.e. 2 isolations per week
- Full characterisation data available for each product lot, including Phase I /II drug-metabolizing enzyme activities
- A professional storage and delivery of fresh plated hepatocytes with Biopredic's patent-pending Sealovac<sup>™</sup> Packaging Technology (guaranteed for a maximum of 3 days)
- A complete Certificate of Analysis available for all products, including donor information, quality control values and specifications, as well as serological and sterility results
- Custom preparations according to your specifications.

### Fresh Human Hepatocytes in Suspension

In order to provide suspended human hepatocytes, freshly isolated hepatocytes from human liver tissue are rapidly suspended and preserved in Biopredic's optimised hypothermic medium to maintain cell viability and functional activity during shipment period (up to 48hours).

#### Key features of human fresh hepatocytes in suspension

- Stable and retained viability and expression level of metabolizing enzymes
- Greater flexibility to handle cells either in suspension or plated cell culture
- Each lot is characterised for CYP activity and is stated on the Certificate of Analysis

## Biopredic provides the following data for each lot of hepatocyte suspension:

- Viability after isolation and after cold shipping period, yield, plateability after cold storage period, morphology before and after shipment is provided with each lot.
- Phase I drug-metabolizing enzymes with a cocktail of probe substrates: CYP1A2/ 3A4/ 2B6/ 2D6/ 2C19
- Phase II drug-metabolizing enzymes: UGT1A1/ UGT1A6/ UGT1A9/ UGT2B15/ SULT1A1/ SULT1A3/ 4/ SULT1E1 with data being provided for each lot.
- Serological and sterility control data

#### Shipment of fresh human hepatocytes in suspension

Freshly isolated hepatocytes are suspended in an optimized hypothermic medium and then aliquoted into cryovials containing at least 10 million cells per vial (1ml). The cell suspension is shipped the same day of the preparation (or the following day) at hypothermic condition (2-8°C). The viability, plateability and functionality of preserved cell suspension are well maintained for at least 48h at 4°C.



## Fresh Plated Human Hepatocytes

Adherent monolayer cultures are prepared from freshly isolated and viable cells plated at a seeding density onto collagen-coated culture supports according to the customer's request.

After overnight attachment, the seeding medium is replaced with either a short or long-term culture medium (Lanford et al., 1989) to produce short-term (≤ 3 days) or long-term hepatocyte (≤ 6 days) cultures in which cells retain a differentiated phenotype for at least 1 week.

Both freshly prepared short-term and long-term cultured hepatocytes contain all major phase I and phase II enzymes as well as the whole gene regulation pathway necessary to investigate the potentiality of drugs to induce phase I and phase II enzymes.



#### Key features of fresh human hepatocytes

- Multi-format plated cells and custom preparation available
- Greater viability and confluence of cells in monolayer
- High expression levels of major hepatic drugmetabolizing enzymes, co-factors and cell membrane receptors
- Greater flexibility for applications with either short or long-term cultures
- Optimized packaging and shipping conditions with Biopredic's patented technology – SEALOVAC
- Each lot is characterised for CYP activity and is stated on the Certificate of Analysis

#### Biopredic International provides the following data for each lot of plated hepatocytes:

- Cell viability and cell culture period after isolation and seeding
- Cell morphology and culture confluence by microphotography
- Phase I drug-metabolizing enzymes with a cocktail of probe substrates: CYP1A2/3A4/ 2B6/2D6/2C19)
- Phase II drug-metabolizing enzymes: UGT1A1/ UGT1A6/ UGT1A9/ UGT2B15/ SULT1A1/ SULT1A3/ 4/ SULT1E1
- Serological and sterility control data

#### Shipment of fresh human hepatocytes in suspension

Freshly isolated hepatocytes are suspended in an optimized hypothermic medium and then aliquoted into cryovials containing at least 10 million cells per vial (1ml). The cell suspension is shipped the same day of the preparation (or the following day) at hypothermic condition (2-8°C). The viability, plateability and functionality of preserved cell suspension are well maintained for at least 48h at 4°C.



Caltag Medsystems are here to help you with your specific requirements.

Contact: techsupport@caltagmedsystems.co.uk







# Fresh Animal Hepatocytes

Fresh animal hepatocytes can be prepared from either single animal liver donor (such as mouse, rat, dog, monkey, rabbit or hamster) or pooled from several animal donors (mouse, rat or rabbit) according to the production schedule.

All rodent hepatocytes are isolated from animals housed in Biopredic's animal facility which is managed in strict compliance with the Directive 2010/63/EU of the European Parliament and of the Council. Hepatocytes of other animal species are isolated from the liver tissues collected following approved protocols and respecting all ethical and legal requirements.

# Fresh Animal Hepatocytes in Suspension

In order to provide animal hepatocytes in suspension, the freshly isolated cells are rapidly suspended and preserved in Biopredic's optimized hypothermic medium able to maintain cell viability and functional activity during the shipment period (up to 48h).

#### Shipment of fresh animal hepatocytes in suspension

Freshly isolated hepatocytes are suspended in an optimized hypothermic medium and then aliquoted into cryovial containing at least 10 million cells per vial (1ml). The cell suspension is shipped at hypothermic condition (2-8°C). The viability, plateability and functionality of preserved cell suspension are well maintained for at least 48h at 4°C.

Fresh rat or mouse hepatocytes in suspension are isolated and shipped the same day. Fresh suspended hepatocytes from other species are isolated and shipped either the same day or the following day according to the liver tissue availability.

# Key features of fresh animal hepatocytes in suspension

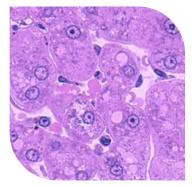
- Good availability of fresh cells from multiple species due to our regular production
- Custom preparation available for both single donor and pooled cells
- Large pooled lot sizes allow multiple experiments to be conducted from the same pool of donors.
- High quality product combined with optimized hypothermic shipping condition
- Stable and retained viability and expression level of metabolizing enzymes
- Greater flexibility to handle cells either in suspension or plated cell culture
- Certificate of Analysis available for each batch
- Donor animal information (species, identification number, age, sex, serology)

Caltag Medsystems are here to help you with your specific requirements.

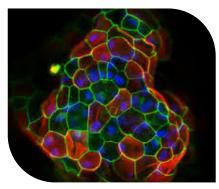
Contact: techsupport@caltagmedsystems.co.uk



#### FRESH ANIMAL HEPATOCYTES







### Fresh Plated Animal Hepatocytes

To provide plated animal hepatocyte cultures, the freshly isolated and viable cells are plated at a desired seeding density onto collagen-coated culture surface according to the customer's request/ordering.

After an appropriate period of cell attachment (from 4hours to overnight depending upon the species), the seeding medium is replaced with a short-term culture medium and then packaged for the shipment.

Fresh plated cultured hepatocytes contain all major phase I and phase II enzymes and can be used in a wide range of in-vitro applications.

#### Shipment of fresh plated animal hepatocytes

Animal plated hepatocytes cultured into multi-well plates are filled with short-term medium (with or without Phenol red) according to customer's specification/request. The pre-filled plate is then packaged using Biopredic's patent-pending Sealovac<sup>TM</sup> Technology for the shipment at room temperature (18-30°C). Both the quality and the functional activity of packaged monolayer cells are well maintained for at least 24h.

Fresh plated rat or mouse hepatocytes are isolated, plated and shipped the same day. Fresh plated hepatocytes from other species are isolated and plated the same day, but shipped the following day.

## Key features of fresh animal hepatocytes

- Multi-format plated cells and custom preparation available
- Greater viability and confluence of cells in monolayer
- High expression levels of major hepatic drug-metabolizing enzymes, co-factors and cell membrane receptors
- Greater flexibility for applications with cells derived from multiple species, either single or pooled donor animals
- Optimized packaging and shipping conditions thanks to Biopredic's patent technology SEALOVACTM
- Certificate of Analysis available for each batch

Characterisation for fresh animal hepatocytes, whether in suspension or plated

## Biopredic provides the following data for each lot of hepatocyte suspension:

- Donor animal information (species, identification number, age, sex, serology)
- Viability, yield, plateability, morphology before and after shipment
- Phase I drug-metabolizing enzymes with either a cocktail of probe substrates or a specific probe substrate: CYP1A/ CYP2D/ CYP3A
- Phase II drug-metabolizing enzymes: UGT1A/ UGT2B/ SULT1A/SULT1E.
- Glucuronidation and sulfation activity of acetaminophen
- Sterility control data

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# Frozen Human & Animal Hepatocytes

Primary hepatocytes are widely used as the gold-standard in-vitro liver model for biological studies

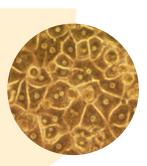
Primary hepatocytes are widely used as the gold-standard in-vitro liver model for biological, pharmacological and toxicological studies in drug discovery and development.

Biopredic International provides a wide range of high quality cryopreserved hepatocytes, obtained from human and several animal species, to meet the specific needs of our customers in view of many in-vitro applications.



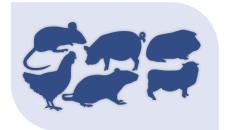
#### Frozen hepatocytes in the following formats are available:

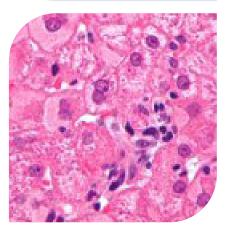
- Hepatocytes in Suspension
- Cryoplateable Human Hepatocytes
- Cryoplateable and inducible Human Hepatocytes
- Cryoplateable & easy-to-use Hepatocytes "no-spin required"
- Cryoplateable & sandwich culture hepatocytes



### Key advantages:

- A regular supply of human and animal primary hepatocytes, i.e. 2 isolations per week from multiple species (rat, mouse, dog and monkey)
- A wide range of cryopreserved hepatocytes, offering flexible choices
- Larger batch sizes of cryopreserved hepatocytes and the possibility to scale up (i.e. pooled donors)
- Pre-qualified cryopreserved human and animal hepatocytes allowing in-vitro protocols to meet your specific application requirements
- Full characterisation data available for each product lot, including Phase I /II drug-metabolizing enzyme activities
- A complete Certificate of Analysis available for all products, including donor information, quality control values and specifications, as well as serological and sterility results
- Custom preparations according to your specifications.





Caltag Medsystems are here to help you with your specific requirements.



# Fresh and Frozen Human & Animal Skin

major worldwide supplier of human and animal skin products, for research into compound penetration, skin irritation, toxicology e.g. genotoxicity and sensitization, metabolism and primary cell isolation.





Sample types available include:

- Abdominal, breast, scalp, arm, thigh
- Full-thickness, with or without adipose tissue
- Dermatomed part of the dermis is removed and the thickness of the skin ranges from 300 to 700 µm.
- Samples can be provided as sheets or discs of different diameters (from 5 to 40 mm), with or without stretch marks.
- Stratum corneum from different anatomical sites:
  - scalp with or without hair follicles
  - upper and lower eye lid
  - arm
  - thigh
  - back



Fresh and Frozen Human Skin to Meet your Requirements

#### Key features of all human skin samples

- A Certificate of Analysis is provided, showing information on the
  patient such as sample photos, age, sex, body mass index (BMI),
  ethnicity, possible disease states, living habits etc. Example CoA's
  have been included as separate documents.
- Customised preparations are available on demand (specific shape, thickness for dermatomed skin, use of customer medium for shipment from Biopredic to your premises)
- Specific patient characteristics such as (but not limited to) the presence or absence of stretch marks, phototype, age, sex, ethnicity, Body Mass Index (BMI) can be requested.
- Tested negative for HIV1/2, HBV, HCV
- Delivered fresh or frozen:
- Fresh skin samples are shipped at 4°C on gauze soaked with a special medium which maintains the viability and integrity of the skin during shipment. Fresh samples can be shipped within the same day as surgery.
- Frozen skins are shipped in dry ice.
- Can also be fixed and embedded: FFPE, OCT or following your specific protocol.

Human skin samples are collected from patients who have undergone cosmetic surgery. The collection, processing and sales to Research Bodies comply with the French Law and ethical principles. Biopredic International holds a permit (AC-2013-1754) which has been granted by the French Ministry of Higher Education and Research. The anonymity of patients is maintained and patients sign an informed consent form before donating their samples.





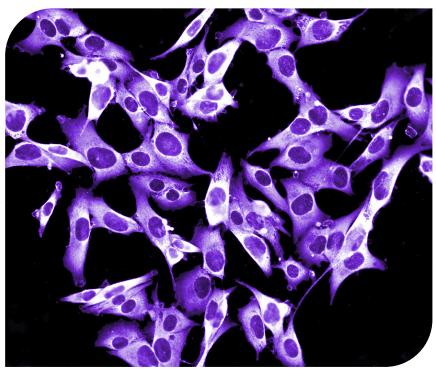
#### **Animal Skin**

Fresh or frozen animal skin from the following species is available: rat, mouse, beagle dog, cynomolgus monkey.

- Sanitary controls are documented by animal provider's health certificates, insuring that animal was sheltered in duly authorised breeding facility.
- Skin-derived products are collected from several animal species.
- Tissue quality is documented via macroscopic parameters: control of presence of scars, pen marks, cysts, moles.
- The dermatomed thickness is also measured.
- All skin-derived products are available fresh or frozen, in sheets or disks.
  - Fresh skin is delivered in culture medium (Biopredic's or the customers')
  - Frozen sample: skin can be delivered with one or two freezing cycles, depending on species and tissue availability.

Animal skin is used for penetration, toxicological and pharmacological studies or cell isolation.





Caltag Medsystems are here to help you with your specific requirements. If you are interested in receiving additional information about the samples, order process or pricing Contact: techsupport@caltagmedsystems.co.uk



# Human and Animal Tissue Samples

Procurement of Human and Animal Tissue Samples.



#### **Healthy Tissues:**

The list below details tissues that have been previously sourced. Please do let us know if the tissue you require is not listed as we may still be able to source it.

Adrenal gland, aorta, areola, atria, atrioventricular valve, bile, blood, bone, bone marrow, brain, brainstem, breast, bronchi, bursa, cecum, cerebrospinal fluid, cervix, chime, colon, cornea, diaphragm, duodenum, epiglottis, oesophagus, eye, fat, faeces, femur, gall bladder, heart, heart valves, ileum, jejunum, kidney, large intestine, larynx, left atrium, left ventricle, liver, lumbar vertebra, lung, mandible, muscle, myocardium, nerve, ovaries, pancreas, pelvis, peritoneum, portal vein, prostate, pulmonary artery, pulmonary vein, radius, rib, right atrium, right ventricle, sacrum, scapula, sinuses, small intestine, spine, spleen, sternum, stomach, teeth, tendon, testes, thoracic vertebrae, tonsils, trachea, ulna, ureter, urethra, uterus, vein, vena cava inferior, vena cava superior, bodily fluids (breast milk, semen, tears, urine etc) and others.

### **Human Tissue Samples**

Caltag Medsystems have established agreements to procure most human tissue phenotypes and have access to a wide range of human tissues and bodily fluids that are obtained via the gift of tissue and organ donation for research advancements in medical science. All donations are donated in line with the Caltag Medsystems ethical policy, see our website. Tissues are available as fresh, frozen or fixed. Samples can be selected according to specific donor inclusion/exclusion requirements; such as age, sex, ethnicity, medical history, specific diseases etc.

#### Diseased Tissues:

Caltag Medsystems also has access to blood, bone marrow, tissue, serum and plasma from diseased state donors.

#### **Autoimmune Diseases**

Rheumatoid Arthritis, Osteoarthritis, Lupus, Psoriasis, Crohn's Disease, IBD, Ulcerative Colitis, Diabetes, Multiple Sclerosis.

#### **Haematological Cancers**

ALL, AML, CLL, CML, MM, NHL, Follicular Lymphoma (FLL), Diffuse Large B Cell Lymphoma (DLBCL), Mantle Cell Lymphoma (MCL), Burkitt's Lymphoma (BL), Waldenstrom's Macroglobulinemia (WM), Myelofibrosis (MF).

#### **Infectious Disease**

HIV1/2, HBV, HCV.

## **Animal Tissue Samples**

Caltag Medsystems have access to fresh and frozen animal tissues that are derived from animals already involved in preclinical testing.

Contact Caltag Medsystems with your requirements and we can start the sourcing for you.

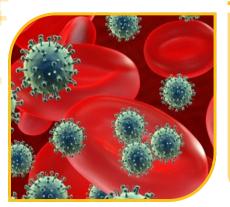
All donations are donated in line with the Caltag Medsystems ethical policy, which can be viewed on our website.

Caltag Medsystems are here to help you with your specific requirements.



# **Multiple Myeloma**





Caltag Medsystems works with many suppliers to provide biological fluids from patients with Multiple Myeloma, including:

- Whole Blood
- Plasma
- Serum
- Bone Marrow
- Cell Lines
- Mononuclear cells from peripheral blood and bone marrow (PBMC or BM MNC)

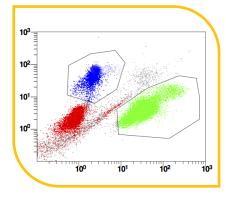
## CD38 IVD/CE

In Multiple Myeloma, CD38 is highly and uniformly expressed, but has relatively low levels on normal lymphoid and myeloid cells. Cytognos offer IVD/CE marked CD38 antibodies including:

- Anti-CD38 FITC
- Anti-CD38 PE
- Anti-CD38 Purified
- CD38 multi-epitope FITC
- CD38 APC C750



# Multiple Myeloma Minimal Residual Disease Kit



Caltag Medsystems offer a EuroFlow validated flow cytometry-based method for monitoring and evaluating minimal residual disease (MRD) in Multiple Myeloma (MM). The MM MRD kit recognises CD38, CD45, CD56, CD19, CD81, CD117, cytoplasmic Ig Kappa and Ig Lambda and used for the detection of abnormal plasma cells with high sensitivity while performing an immune profile of the sample.

Caltag Medsystems are here to help you with your specific requirements. Contact:

techsupport@caltagmedsystems.co.uk



# Acute Myeloid Leukemia

Caltag Medsystems provide a vast range of products enabling essential research into AML and assisting with drug development, cancer therapies and molecular genetics research.

**AML Research** 

Caltag Medsystems offer a range of reagents to assist with research into AML. These products include:

- CLIA Kits
- ELISA Kits
- FISH Probes
- Inhibitors
- Lysates
- Antobodies
- Monomers
- Peptides
- Recombinant Proteins
- RNA
- Small Molecules
- Tetramers

Search for "AML" on our website for a full list of products. Use the "product type" filter to narrow your search.

Caltag Medsystems are here to help you with your specific requirements. Contact:

techsupport@caltagmedsystems.co.uk

Caltag Medsystems can supply biolological samples obtained from patients with AML. These are obtained via the gift of tissue and organ donation for research advancements in medical science. All donations are donated in line with the Caltag Medsystems ethical policy.

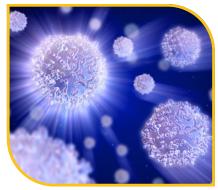
#### Samples available, include:

- AML Bone Marrow Mononuclear Cells
- AML Bone Marrow Mononuclear Cells, Snap Frozen
- AML Whole Bone Marrow
- AML Peripheral Blood Mononuclear Cells
- AML Peripheral Blood Mononuclear Cells, Snap Frozen
- AML Whole Blood
- AML Plasma
- AML Serum
- AML Urine

Healthy control cells and tissue are also available, please contact us for further information.









# Systemic Lupus Erythematosus (SLE)

Lupus is a chronic autoimmune disease that occurs when the body's immune system attacks normal, healthy tissue. Caltag Medsystems provide a range of products enabling essential research into SLE and assisting with drug development and therapies in the autoimmune field.



#### **SLE Research**

Caltag Medsystems offer a range of ELISA and CLIA kits, antibodies, lysates and recombinant proteins to assist with research into SLE.

Search for "lupus" on our website to show the relevant products.

#### **BioFluids**

Caltag Medsystems are able to procure biolological samples obtained from patients with SLE, obtained via the gift of tissue and organ donation for research advancements in medical science. All donations are donated in line with the Caltag Medsystems ethical policy. Samples that we are able to provide, include:

- Whole blood
- Serum
- Plasma
- PBMC
- Urine

Caltag Medsystems are here to help you with your specific requirements. Contact:

techsupport@caltagmedsystems.co.uk



# **MHC Tetramers:**

## Directly Measure Antigen-Specific T Cells

MBL International has a wide portfolio of immune monitoring research products including tetramer technology for vaccine development, rapid T-cell detection and quantification in the pharmaceutical industry or bioresearch industry.

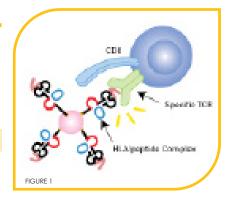


MHC Tetramers provide you with the means to rapidly detect and enumerate antigen specific T cells directly from ex vivo (patient) (donor) samples without the need for cell stimulation. MBL's broad MHC Tetramer product portfolio utilises proprietary technology licensed from Beckman Coulter.

MHC Tetramers are complexes of four Major Histocompatibility Complex (MHC) molecules which are associated with a specific peptide and bound to a flurochrome. MHC Tetramer technology is the most accurate method for detection of rare events. The information MHC tetramers provide is pivotal to the direct development of vaccines and therapies, as well as monitoring patient responses during clinical trials. To greatly reduce non-specific binding, Class I iTAg MHC Tetramers specific to human alleles have a proprietary mutation in the  $\alpha 3$  domain (see figure 1 below).

## **Advantages:**

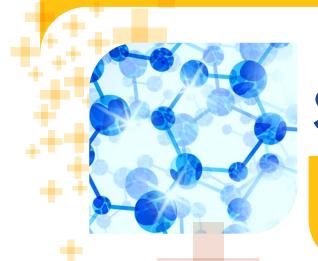
- The only method to detect antigen-specific CD4+ or CD8+ T cells ex vivo
- Reduced non-specific binding due to proprietary mutation in the alpha-3 domain in human MHC class I tetramers.
- Immune responses are targeted to the specific allele(s)
- Tetramer staining is quantitative
- Does not require the use of radioactive isotopes
- Rapid: allowing fresh blood (or tissue-derived) sample to be analysed
- Large numbers of samples can be processed using flow cytometer
- Tetramer-labelled cells remain viable
- All specific CTLs are detected
- Tetramers can be customized for unique applications





Caltag Medsystems are here to help you with your specific requirements. Contact: techsupport@caltagmedsystems.co.uk





# Biochemicals & Small Molecules

Caltag Medsystems works with number of suppliers to provide you a broad range of unique natural products, rare antibiotics, small molecules, inhibitors and biochemicals.

Caltag Medsystems are able to provide products in the following areas:

## **Signalling Pathways**

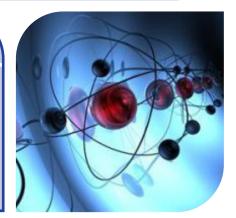
- Apoptosis
- Bone Metabolism
- Cardiovascular
- CD and Adhesion Molecule
- Cytokine
- Developmental Biology
- Enzyme and Kinase
- Haematology
- Hormone

- Immunology
- Kidney Biomarker
- Metabolism
- Neruology
- Ophthalmology and Otorhinolaryngology
- Reproductive Science
- Signal Transduction
- Tumour Immunity

## **Product Type**

- Rare Antibiotics
- Drug Screening Library
- Drug Screening Panel
- DNA/RNA Prep Kit
- Biotinylation Reagents
- Biochemicals

- Bioactive Peptides
- Tag Peptides
- Growth Factors
- Amino Acids & Building Blocks
- Unique Natural Products



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Contact: techsupport@caltagmedsystems.co.uk







# Flow Cytometry

## **Immunophenotyping Service**



Using cells in suspension, Caltag Medsystems' immunophenotyping service allows the characterisation of extracellular molecules using fluorescently-labelled antibodies. These include MHC/HLA typing, cancer cell analysis (focusing on haematological malignancies), and other custom analyses.

All of the analysis is conducted in our laboratories based in Buckingham, UK.

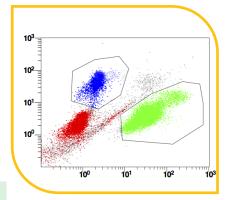
## Flow Cytometry Reagents

Caltag Medsystems supplies a list of products for use in clinical and research flow cytometry, including antibodies, isotype controls, reagents, software, instruments and diagnostic kits. We provide a number of EuroFlow validated reagents for immunophenotyping, including screening tubes and multi-colour antibody cocktails.

We also provide the FlowStainer  $^{\text{TM}}$  - the first fully automated platform that handles all stages of sample preparation for flow cytometry.

- Antibody Cocktails for Lymphocyte Subset Studies
- Antibody Cocktails for Plasma Cell Studies
- Paroxysmal Nocturnal Haemaglobinuria Screening Kit
- Kapp/Lambda Antibodies
- TDT detection
- Single Colour Antibodies
- Multi Colour Antibodies

Our flow cytometry portfolio includes an extensive number of controls, including Stabilised Human Whole Blood and CD4 Low and Normal Blood Controls. In addition, Caltag Medsystems supply a number of CE/IVD kits for the diagnosis of foetomaternal haemorrhage, heparin induced thrombocytopenia and bacterial sepsis by flow cytometry. We also have a number of other standards and controls, including calibration particles, isotype controls, and absolute counting systems. Our Sample preparation portfolio involves erythrocyte lysing, sample stabilisation, cell fixation and permeabilisation.



Caltag Medsystems are here to help you with your immunophenotyping requirements. Contact: techsupport@caltagmedsystems.co.uk



15,000 ELISA assays are available across a wide range of species.



## **ELISA Kits**

Caltag Medsystems offer a broad range of over 15,000 ELISA assays for research use, to scientists in Europe. Our ELISAs cover several kit formats and all major research areas, including:

- Apoptosis
- Bone Metabolism
- Cardiovascular
- CD and Adhesion Molecule
- Cytokine
- Developmental Biology
- Enzyme and Kinase
- Haematology
- Hormone

- Immunology
- Kidney Biomarker
- Metabolism
- Neruology
- Ophthalmology and Otorhinolaryngology
- Reproductive Science
- Signal Transduction
- Tumour Immunity

ELISA kits are available for an extensive range of species:

- Cat
- Guinea Pig
- Pig
- Plant

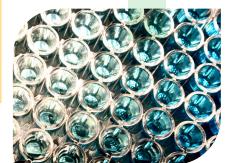
- Chicken
- Horse
- Bovine
- Turkey

- Equine
- Human Monkey
- Canine
- Virus

Zebrafish

- Escherichia coli
- Mouse
- Rhesus Macaque

- Goat Avian
- Rat
- Mammal
- Rabbit
- Sheep



### **ELISA** kits available include:

- Sandwich ELISA Kits for specific protein isoforms
- Double Sandwich ELISA Kits for heterodimer detection
- Competitive Inhibition ELISA Kits for detection of small molecules
- Instant ELISA for increased efficiency and convenience
- CE marked for In Vitro Diagnostics

Can't find what you are looking for? Caltag Medsystems offer an ELISA service to source a product for you. Contact our technical team for further information

Caltag Medsystems are here to help you with your specific requirements. Contact: techsupport@caltagmedsystems.co.uk



Caltag Medsystems offer an ELISA service for the evaluation of specimens of potential scientific significance.

## **ELISA Service**





Enzyme-linked immunosorbent assays (ELISAs) are a standard method for the evaluation of various immunological research and diagnostic targets.

For government laboratories, pharmaceutical companies, biotechnology companies, CRO's and academic institutions, Caltag Medsystems offer an ELISA service for the evaluation of specimens of potential scientific significance.

Caltag Medsystems provide data acquisition, evaluation, and quality control. Our ELISA service allows a cost effective and time saving analysis of samples.

For new clients, we can schedule an initial telephone conference to discuss how our services can assist you in achieving your goals.



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