Scientific testing & innovation for cosmetics
In-cosmetics global 2019

Dr Quentin LAGADEC
Marketing and Business Development Manager
WE ARE

A team of world class experts, innovators in bioengineering and regenerative medicine

“We are driven by a commitment to improving human health. CTIBiotech were the first to make 3D human tissue models a reality”

Professor Colin McGuckin
Chairman & CSO
World renowned cancer researcher & pioneer in regenerative medicine
Expert in stem cells, government advisor, medical journal reviewer
Reconstructed human skin. Created in our laboratories as a bioassay for drugs and the dermato-cosmetic industry.

“Global reputation forged by robust science and the ability to deliver on time. Innovation and performance are just part of our genetic make-up!”

Dr. Nico Foraz
CEO
Stem cell researcher, founder member of CTIBiotech
3 POLES OF EXCELLENCE

**cti PHARMA**

95% of new drug candidates fail cancer clinical trials, costing billions to the pharmaceutical industry and delaying new treatments for patients. Robust predictive human cell bioassays support faster development of preclinical trials thereby saving time and money.

*We offer:* R&D, drug testing, medical device co-development and testing, bioassay co-conception and open lab. We provide fully functioning 3D tissue models and specific cell models from patients which improves efficacy given their proximity to human physiology.

*For:* Pharmaceutical industry (cancer research, regenerative medicine, medical devices), public and private research institutions, contract research organisations.

*Key product innovations:*  
- World’s first mini liver as part of a NASA research programme  
- World’s first nervous tissue model  
- Stem cell applications  
- 3D microtumours

**cti SKIN**

Efficient cosmetics and skin care products require innovation and claim substantiation. Human skin models provide the means to test new product ideas with scientific credibility.

*We offer:* In-house tests, off the shelf models, co-development/innovation. Open lab using complex skin models from any age range and typology. Skin biopsies and in-house research.

*For:* Cosmetic and dermatology industries

*Key product innovations:*  
- Baby skin models  
- In vitro hair models  
- Sebaceous gland models  
- Pigmentation models  
- Scar and stretch marks models  
- Sensitive skin models

**cti BIOSOURCING**

Top quality human cells, tissues and biological samples that provide the basis for research and innovation.

*We offer:* Human biological sample procurement & cell harvesting. Over 50,000 tissue samples in stock or on demand from bio-sourcing via a network of 200 healthcare partners worldwide.

*Specifically this includes:*  
- Human skin cells (dermal, epidermal, melanocytes, sebocytes…
- Oral and facial cells and tissues  
- Subcutaneous tissues and organs  
- Blood and bone marrow  
- Cancer and associated cells  
- Pathological tissues  
- Cell purification and characterisation (CD34, 56, T, B)

*Key product innovations:*  
- 3D printed tissue models  
- Animal product free human cell models
WE OFFER

• Contract testing on advanced models
• Open innovation / Collaborative research
• Products: available stock 50 000 human cells and tissues

In vitro hair model for testing the efficiency of hair care products. Each hair follicle is analysed for specific markers according to growth patterns requested by clients.
Nile red analysis of primary sebocytes showing lipid production
Model developed through collaborative research with BASF
We offer

Differentiation through innovation & ingredient efficacy claim

• Contract testing
  • Baby skin models
  • Hair models
  • Sebaceous gland
  • Pigmentation models
  • Ex vivo biopsies
  • Sensitive skin models

• Open Innovation

• Collaborative research
Solar protection, whitening agent

- Bioimaging monitoring with UV light exposure
- Melanin content analysis by spectrophotometry
Baby skin model

Proprietary infant skin model

A - Negative control (PBS)
B - Positive control (SDS 1% - 10 min)
C - Positive control (SDS 5% - 15 min)
D - Positive control (SDS 1% - 24h)
Baby skin model

Proprietary infant skin model

Viability

IL1α dosage
Hair and scalp model

From ex vivo to in vitro: in depth analysis of haircare products
Neural model

Applications in sensitive skin and itchiness

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3D CTIFullskin Model

- Fibroblasts
- Keratinocytes
- Melanocytes
- Immune
- Endothelial
- Neuronal
- Sebocytes
- Hair follicle
- Dermal Papilla
Dermis Epidermis Junction

Barrier function

Collagen IV

Laminin V

Collagen VII

500 µm

200 µm

200 µm
3D Bioprinting

Skin surgery → Isolation → 2D culture → Bioprinting

In vitro study → High throughput 3D culture → 3D culture
3D Bioprinting
In depth analysis of skin composition
Open innovation: case study
From idea to practical innovation

• Customer need
  • Bioassays for Seborrhea

• Collaborative research
  • 2 new models

• 2 actives on the market

• Positive scientific communication
CTI Biotech 3D-printed microtumours: the future of anti-cancer drug testing. Fluorescence analysis in 3D.
Our vision: improving Human health

Innovative models for faster drug discovery
Our vision

Improving human health through better Human models

• Advanced bioengineering Bioprinting of 3D MicroTumours

• Primary cancer cells and associated

• Collaborative research
  • IMODI
  • 3D OncoChip
Expertise in biosourcing

Human biological samples procurement & harvesting

• 50 000 samples in stock
• Pathological and healthy
• On demand biosourcing
• Fresh, Frozen, OCT
Powerful sourcing network

200 healthcare partners
We offer

High quality human model, cell & tissue for scientific research

**Pathological**

- Breast cancer
- Ovary cancer
- Pancreas cancer
- Lung cancer
- Liver cancer
- Prostate cancer
- Lymphoma
- Atopic dermatitis
- Solar lentigo
- Cancer associated

**Healthy**

- Skin, full thickness
- Skin cells
- Dermal papilla
- Subcutaneous adipose tissues
- Neonatal tissues
- Peripheral blood
- Blood cells
- Bone marrow
- Bone marrow cells
- Cornea