



# **TLS** innovating the Life Sciences

Incubation, Research, Technology  
transfer and Business development.







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## TOSCANA LIFE SCIENCES

### NUMBERS OF A VALUE GENERATING INNOVATION ECOSYSTEM

Toscana Life Sciences is a non-profit organization active in supporting research activities and promoting the creation of innovative companies in the Life Sciences field. Founded at the instigation of Tuscany's principal university, clinical, industrial and financial institutions, the Foundation is based in Siena, in the historical "Torre Fiorentina" area, where Achille Sclavo founded the eponymous Istituto Sieroterapico e Vaccinogeno Toscano in 1904, and where important multinational vaccine companies now strategically choose to locate their primary research and development activities. An environment of excellence that is part of a regional panorama in which the Life Sciences play a strategic role.



## ALMOST 11 MILLION EUROS GENERATED AND ATTRACTED IN 2021

TLS keeps on growing and maintains its key position as investments and projects attractor in the life sciences sector. Almost 11 Million euros has been generated and attracted to the regional territory by TLS. From 2007 TLS Foundation has been able to generate activities and investments for more than 73 Million euros.



## SCIENTIFIC PUBLICATIONS

129 articles in 2021 (33 of TLS Foundation), 765 overall from 2007. Demonstrating the great commitment to R&D both for TLS Foundation and for companies and research groups of the bio-incubator.



**129** NEW  
PUBLICATIONS

## EMPLOYMENT INCREASE +27,7%

Employment increased by 27,7% in 2021. We have in fact 84 employees working for the Foundation for a total of 624 employees with companies and research groups incubated and affiliated to TLS.



**+624**  
EMPLOYEES

The performance indicators are referred to the 2021 fiscal year profit





GIVE SPACE  
TO YOUR RESEARCH

## GIVE SPACE TO YOUR RESEARCH



### ARE YOU LOOKING FOR **SPACES** FOR YOUR **ACTIVITIES**?

TLS offers more than 4,000 sqm of laboratories in modules ranging from 15 to 150 sqm.

### LABORATORIES AND **SPACES** OF **COWORKING**

- Equipped laboratories •
- Offices •
- Meeting rooms •
- Auditorium •



### FROM THE CONTAMINATION OF **IDEAS** TO FUTURE **BUILDING**



All our spaces are realised to allow cross-contamination and the interchange among employees of different companies.  
A dynamic environment where to grow ideas for the future.

#### **CONTACTS**

Cristina Tinti  
c.tinti@toscanalifesciences.org

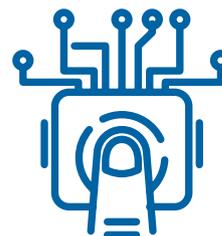


For more information:  
[www.toscanalifesciences.org/en/services/incubation-services/](http://www.toscanalifesciences.org/en/services/incubation-services/)

## RESEARCH SERVICES

### HIGH **TECHNOLOGY** AT THE SERVICE OF **RESEARCH**

In TLS all research groups, start-up, spin-off and companies can find technology facilities and services to grow up and face the market challenge.



### **ENTERPRISE ACCELERATOR** BUT NOT ONLY



- Access to technology instruments and platforms
- Molecular profiling
- Validation and setting up of analytic methods
- In vitro and in vivo biological tests

Do you need instruments and platforms with a high added value? TLS offers different exclusive use instruments at competitive prices as compared with the market standards.

#### **CONTACTS**

Laura Salvini  
l.salvini@toscanalifesciences.org



For more information:  
[www.toscanalifesciences.org/en/services/research-services/](http://www.toscanalifesciences.org/en/services/research-services/)

## BUSINESS DEVELOPMENT



### TAKE A **GOOD IDEA** AND TURN IT INTO **BUSINESS**

We are enterprise facilitator and accelerator. Thanks to different services and consultancies TLS supports start-up, companies and young people with interesting ideas in finding a steady place in the market.

- Support to start-up to plan and to accelerate the development process
- Licence agreements, research and business opportunity selection
- Support to companies to gather the most interesting business opportunities
- Research and orientation activities to gather national and international funding opportunities

#### **CONTACTS**

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For more information:

[www.toscanalifesciences.org/en/services/business-development-services/](http://www.toscanalifesciences.org/en/services/business-development-services/)

# INTELLECTUAL PROPERTY PROTECTION

TO HAVE A **GOOD IDEA** IS NOT ENOUGH,  
IT MUST **BE DEFENDED**

TLS offers intellectual property consultancy in order to protect products' and services' value.

The best defence is the attack. When we talk about Intellectual Property the defence is never enough. For this reason we also offer support services to prepare and to present patent applications.



## CONTACTS

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For more information:  
[www.toscanalifesciences.org/en/services/protection-of-intellectual-property/](http://www.toscanalifesciences.org/en/services/protection-of-intellectual-property/)







## TLS RESEARCH ACTIVITY

# TUMOUR IMMUNOLOGY UNIT

Established with the support of **MY FIRST AIRC GRANT** (Italian Association for Cancer Research)

## GENERAL DESCRIPTION

**Tumour Immunology Unit** was opened in 2019 owing to the support of the special AIRC program that helps young researchers in establishing independent laboratories. My First AIRC project “Dissecting ILT3 biology to understand tumor suppression in B cell chronic lymphocytic leukemia”, hosted in TLS lab in Siena, is conducted by Dr. Anna Kabanova as Principal Investigator (PI).

## RESEARCH ACTIVITIES

The research project aims to get a deeper understanding the biology of autoreactive and ageing B cells to harness this knowledge for the treatment of B cell-related disorders. Specifically, we currently focus on studying one of the most frequent tumours of B lymphocytes, B-cell chronic lymphocytic leukemia (CLL), which is mostly found in elderly patients and is characterized by highly aberrant gene expression profiles. Our knowledge on the functional outcome of this changes is relatively fragmentary, hence we would like to fill in this scientific gap.

Our laboratory combines state-of-the-art imaging, -omics technologies and gene editing approaches *in vitro* and *in vivo* to tackle two specific questions. First, we would describe better molecular vulnerabilities of CLL cells, with the ambition to improve suboptimal therapeutic schedules that are currently in use. Second, we are particularly interested in characterizing CLL-specific tumour suppressing gene networks that counteract tumour development in indolent forms of CLL. This study may form a rationale for the development of novel therapeutic approaches to treat aggressive CLL.

TUMI team is also particularly interested in applying mRNA technologies as immunotherapeutics to treat CLL.

To cultivate inner expertise and learn about this cutting-edge versatile technology, we are currently collaborating with the Monoclonal Discovery lab, lead in TLS by Dr. Rino Rappuoli and coordinated by Dr. Claudia Sala, for a project funded by the Wellcome Leap R3 consortium.

## AIRC GRANT

Duration: 5 years  
Start date: July 2019  
Amount: 500.000 Euros

## CONTACTS

Principal Investigator:  
**Dr. Anna Kabanova**  
a.kabanova@toscanalifesciences.org  
**Cristina Tinti**  
c.tinti@toscanalifesciences.org

## RESEARCH GROUP

Federica Nardi - Postdoctoral Fellow  
Roberta Drago - PhD Student  
Rosita Del Prete - Postdoctoral Fellow  
Mattia Apollonio - Postdoctoral Fellow



# VACCIBIOME PROJECT

**ERC advanced grant - “Cancer Vaccines and Gut Microbiome: an Integrated Approach to Optimize Cancer Immunotherapy”**

## GENERAL DESCRIPTION

The project aims at investigating the role of gut microbiome in determining the efficacy of cancer vaccines. The research project, awarded to Prof. Guido Grandi, University of Trento, has a term of five years and benefits from 2,5 million Euros of funding. TLS hosts some labs and scientists and contributes to the development novel cancer vaccines and the analysis of immune responses in different animal models.

## RESEARCH ACTIVITIES

The project intends to shed light on the interplay between cancer immunity and gut microbiome as a way to optimize personalized cancer vaccines and immunotherapy. The project originates from two milestone discoveries. First, to be effective cancer immunotherapies have to target CD4+/CD8+ T cell neo-epitopes, which originate from tumour mutations. Second, the gut microbiome influences the effectiveness of anti-PD-1/PD-L1 antibody immunotherapy both in animal models and in humans. We also recently showed in a mouse model that oral gavages with Bifidobacterial cocktails improved the therapeutic power of neo-epitope-based cancer vaccines. How microbiome affects anti-cancer immunity has not been fully elucidated yet and a deep understanding of the underlying mechanisms has the potential to substantially improved cancer immunotherapy. The ultimate goals are: 1) to provide new criteria for neo-epitope selection in personalized cancer vaccines, 2) to develop prognostic tools based on microbiome analysis, and 3) to define microbial species to be used as immune-potentiators in patients undergoing cancer therapy.

## EUROPEAN GRANT

Duration: 5 years  
Starting date: September 2019  
Total amount: 2,5 Million Euros



## CONTACTS

**Cristina Tinti**

c.tinti@toscanalifesciences.org

Principal Investigator: Prof. **Guido Grandi**

## TEAM AT UNIVERSITY OF TRENTO, CIBIO

Nicola Segata, prof.

Michele Tomasi, PhD

Ilaria Zanella, PhD

## TEAM AT TLS

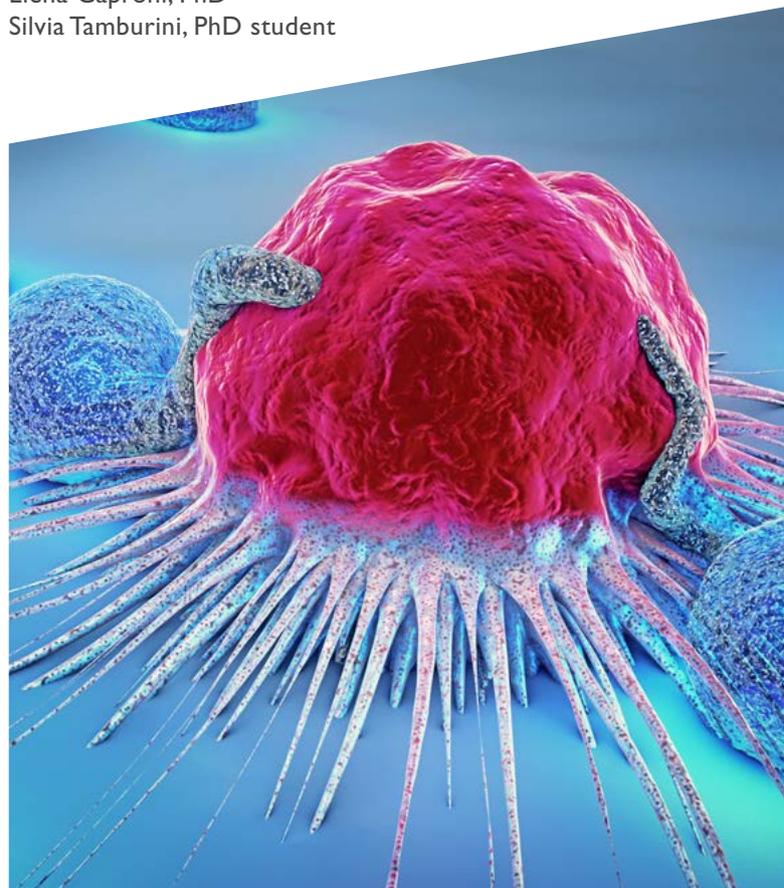
Alberto Grandi, PhD

Laura Fantappiè, PhD

Assunta Gagliardi, PhD

Elena Caproni, PhD

Silvia Tamburini, PhD student





# Monoclonal Antibody Discovery (MAD) LAB

## GENERAL DESCRIPTION

The **MAD Lab research** team at TLS Foundation started activities in 2018 thanks to a 2.5 million euros ERC Advanced Grant focused on anti-microbial resistance and has grown quickly thanks to various funding sources received for tackling different health challenges (*Shigella*, *Klebsiella pneumoniae* and, more recently, coronavirus SARS-CoV-2). The Lab has consolidated skills in **the identification and production of monoclonal antibodies that can be tested *in vitro* against bacteria and viruses.**

## RESEARCH ACTIVITIES

The MAD Lab is focused on different research projects:

**1) ERC vAMRes (Vaccines as a remedy against Anti-Microbial Resistance) Project** - “Isolation and screening of human monoclonal antibodies against AMR for therapy and for discovery of novel vaccine antigens” aims, through isolation of natural antibodies and identification of the recognised antigens, at developing vaccines able to defeat *Neisseria gonorrhoeae* (Gonococcus) and *Escherichia coli* pathogenic strains, thanks to the application of advanced technologies to Reverse Vaccinology developed by Dr. Rino Rappuoli (Principal Investigator of the vAMRes Project) at the end of ‘90s and now proposed again with a 2.0 approach.

**ERC EUROPEAN GRANT** - Duration: 5 years; Starting date: November 2018; Amount: 2.5 Million Euros.

**2) ShiMabs Project** - “Human monoclonal antibodies against *Shigella* (ShiMabs), for therapy and vaccine acceleration” aims at isolating therapeutic monoclonal antibodies against different strains of *Shigella*, a bacterium responsible for bowel infections, especially in children in the poorest areas of the world.

**WELLCOME TRUST GRANT** - Duration: 3 years; Starting date: March 2021; Amount: more than 4 million Euros.

**3) MAbCo19 Project**, started in collaboration with INMI Spallanzani, is focused on the discovery and development of human monoclonal antibodies against coronavirus SARS-CoV-2, from blood of recovering/recovered patients, with the aim of using them for prophylactic/therapeutic purposes and as molecular baits for the discovery of vaccine antigens. The experimental approach followed is called Reverse Vaccinology 2.0, which represents the evolution of the first Reverse Vaccinology strategy optimized by Dr. Rino Rappuoli. **FUNDS:** started in March 2020, within the C.Re.Me.P. (Regional Centre for Precision Medicine) Project funded by the Tuscany Region and funds from AchilleS Vaccines under the EU Malaria Fund.

**4) New Delhi metallo-beta-lactamase-producing (NDM) *Klebsiella pneumoniae*.** The project deals with the isolation of human monoclonal antibodies from patients who recovered from NDM-producing *K. pneumoniae* infection and, by using an innovative high-throughput imaging platform and deep learning algorithms for image analysis, characterize thousands of mAbs to find the most potent ones. The overarching goal of this project is to identify broadly protective mAbs against highly virulent *K. pneumoniae* strains, thus providing a therapeutic solution to NDM *K. pneumoniae* infections. **C.Re.Me.P. Funds (Tuscany Region)** - Duration: 2 years; Starting date: December 2019.

**5) Wellcome Leap - RNA Readiness + Response (R3) Program.** Work on the “Development of extremely potent human mRNA-encoded monoclonal antibodies against viral and bacterial pathogens” is supported by Wellcome Leap as part of the R3 Program.

## CONTACTS

**Cristina Tinti**

c.tinti@toscanalifesciences.org

MAD Lab Coordinator and vAMRes Principal Investigator:

Dr. **Rino Rappuoli**

## RESEARCH GROUP

Claudia Sala; Emanuele Andreano; Anna Kabanova;  
Marco Troisi; Concetta De Santi; Ida Paciello; Fabiola Vacca;  
Noemi Manganaro; Elisa Pantano; Giampiero Batani;  
Emanuele Roscioli; Pardis Mokhtary; Samuele Stazzoni;  
Vittoria Zucconi; Chiara Mugnaini; Soraya Bosch;  
Valentina Abbiento; Matteo Ridelfi; Giada Antonelli;  
Eleonora Marini and Piero Pileri.



## Data Science for Health (DaSch) Lab

### GENERAL DESCRIPTION

The **Data Science for Health (DaSch) Laboratory** is the new TLS research unit for the application of data sciences and new technologies at the service of scientific research. The DaSch-Lab can rely on the expertise of a diverse group of computational and machine-learning scientists working at the interface with experimental teams on a wide range of life science challenges.

### RESEARCH ACTIVITIES

DaSch-Lab develops and applies innovative approaches to understand biology through computing, focusing on data-rich problems to facilitate the discovery of biologic products against infectious diseases.

The lab covers different areas of data science, including:

1. Population genomics and immuno-informatics: analysis of pangenomes from bacteria and viruses, of immune repertoires from healthy and diseased individuals, and their interplay.
2. Computational structural biology: development of deep-learning models combined with molecular dynamics simulations for the analysis of antigen-antibody interactions, to improve or design ab-initio biologic products.
3. Digital microscopy: use of deep-learning techniques, including generative-adversarial networks (GANs), for the high-throughput analysis of confocal microscopy images to explore host-pathogen interactions at the sub-cellular level and automate the in silico analysis of compounds.
4. Advanced Data Platforms to manage and integrate high-dimensional biologic data-flows, in collaboration with the Siena Artificial Intelligence Hub network.

To perform its activities, the lab uses a balanced mix of on-prem and in-cloud computational resources, including a Virtual-Reality laboratory for real-time molecular dynamic (MD) simulations and structural modelling that allows the team to explore the dynamics of interacting molecules, a Google Cloud Platform and a strategic

collaboration with the University of Pisa high-performance computing centre.

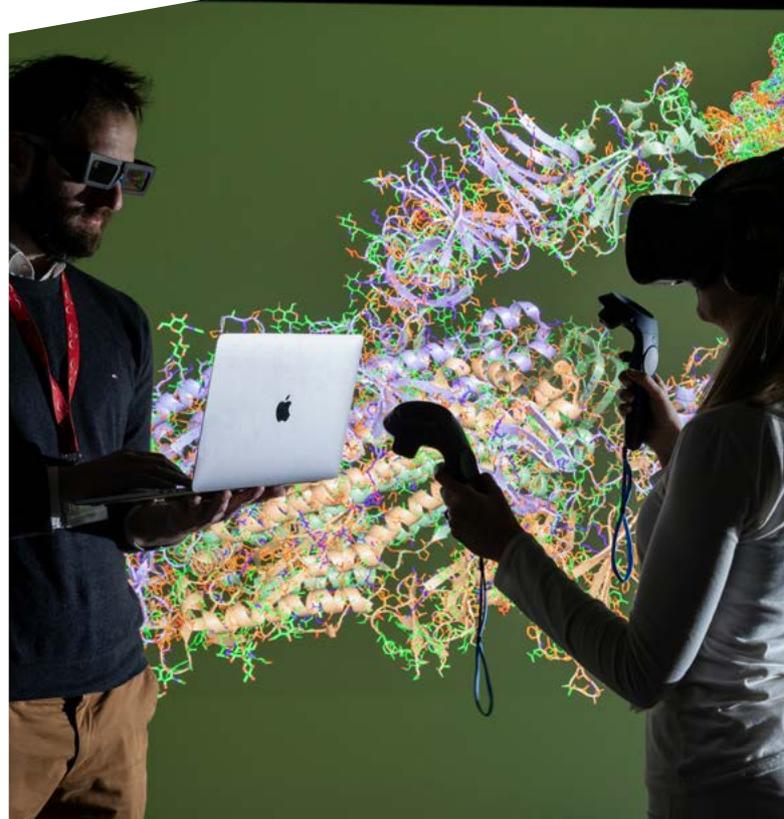
The lab has established strategic collaborations with Academic partners in Italy and abroad also to support joint doctoral and postdoctoral research fellowships, including the Universities Siena, Modena and Cambridge (UK).

### CONTACTS

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### RESEARCH GROUP

**Duccio Medini**, Data Science Strategic Director  
Dario Cardamone; Giorgio Ciano; Sara Joubbi; Giuseppe Maccari



# MASS SPECTROMETRY UNIT

The **Mass Spectrometry Unit (MSU)** is a well-established reality within TLS consisting of a multidisciplinary team which, by combining mass spectrometry with bioinformatic data processing, deals with the cross-sectional analysis of a wide variety of samples to investigate their protein and metabolic profile.

## GENERAL DESCRIPTION

The team's know-how enables it to offer highly advanced expertise in the field of studies on Small Molecules (derived from different matrices such as biological fluids, supernatants and plant matrices), biomolecules such as proteins and antibodies, and proteomic and metabolomic analysis applicable to different research fields.

The optimisation and fine-tuning of highly customisable workflows by means of mass spectrometry has led to the activation of numerous collaborations to support internal and external research projects and third-party services, attracting not only Tuscan but also national and international bodies and universities.

The implementation of specific bioinformatic analysis approaches adaptable to different scientific needs completes MSU's analytical capacity.

## RESEARCH ACTIVITIES

The main analytical activities include accurate mass measurement of low/medium molecular weight analytes, molecular weight determination of biomolecules (proteins and antibodies), identification of proteins by mass fingerprinting and MS/MS analysis, determination of the drug-to-antibody ratio (DAR), and development of analytical methods with UHPLC-ESI-MS/MS. As far as proteomics is concerning, the development of methods for the identification and quantification (label free or labeled) of proteins by shotgun analysis is set up. Additionally, the MSU deals with analysis and targeted/untargeted UHPLC-ESI-MS/MS of metabolites in different culture media, biological fluids and plant matrices. These activities are supported by qualitative and



quantitative bioinformatic data.

Current research activities mainly concern the field of rare diseases and botanicals.

## RESEARCH GROUP

**Laura Salvini** - [l.salvini@toscanalifesciences.org](mailto:l.salvini@toscanalifesciences.org)

Laura Tinti, Vittoria Cicaloni, Paola Nezi, Arianna Pasqui

## BOTANICALS LAB

### GENERAL DESCRIPTION

Preparations based on medicinal plants or “botanicals” represent an important segment of the Italian and European health market. Their long tradition of use represents a guarantee of safety and efficacy, however the monitoring of the products on the market has highlighted many critical issues due both to the intrinsic complexity of the plant extracts and to the current lack of recognized analytical protocols. The quality control of botanicals requires in-depth knowledge of each phytocomplex and the definition of standards to ensure the authenticity of the product and its ingredients.

### RESEARCH ACTIVITIES

To embrace this challenge, Toscana Life Sciences has created a research and quality control structure capable of providing qualitative and quantitative protocols of widely consumed vegetable matrices in order to define their phytochemical profile, as well as both their consolidated and traditional use. For this reason, together with Materia Medica Processing, it has created the joint Botanicals Lab which offers this type of services by combining skills, know-how and by sharing technologies.

### CONTACTS

[botanicalslab@toscanalifesciences.org](mailto:botanicalslab@toscanalifesciences.org)





EDUCATION AND  
HIGH QUALIFIED SKILLS  
IN THE LIFE SCIENCES

# VITA FOUNDATION

## “NEW TECHNOLOGIES FOR LIFE” TECHNICAL VOCATIONAL SCHOOL

**The “New technologies for Life” Technical Vocational School - Istituto Tecnico Superiore (ITS) “Nuove tecnologie per la Vita”** - was created to train highly specialized professional figures in a strategic sector of the regional economy, the Life Sciences. The objective of the ITS, which operates throughout the entire Tuscany region, is to fulfill the demand of companies with new high-level technical and technological expertise in a sector that sees Tuscany among the top three Italian regions in terms of the presence of companies and employees as well as turnover. The “New technologies for Life” ITS Foundation, specifically, is led by the ITIS “Sarroccchi” in Siena and counts 21 partners including the TLS Foundation (coordinator), the Tuscan Universities of Siena, Pisa and Florence, the provinces of Siena and Pisa, the municipality of Siena, the metropolitan city of Florence, the “Cellini” Institute of Florence, the industrial associations of Florence and southern Tuscany, and the training agencies Toscana Formazione, ASEV, Confindustria Toscana Servizi and Pon-Tech. Several leading companies in the Tuscan chemical, pharmaceutical and biomedical sector are among the companies directly involved in the Foundation and strategic for the training outcomes of the TVS: GSK, Menarini, Kedrion, Corima, and Dekam E.L.A.

### ACTIVITY

The “Life” Technical Vocational School [ITS “Vita”] offers young high school graduates two-year courses (for a total of 1,800/2,000 hours) constructed on the basis of the needs and requirements of companies: at least 30% of the duration of the training course is performed at a company, internships abroad are promoted and at least 50% of the faculty comes from the professional world. The courses will be developed in three areas of the Tuscan production chain: industrial and environmental biotechnologies, the production of diagnostic and biomedical equipment and devices, and medical nanotechnologies.

Furthermore, the ITS VITA Foundation offers short courses of high-level specialization (for a total of 600/800 hours) focused on life sciences such as: clinical studies project management; Informatics 4.0 (medical area); Pharmaceutical products commercialisation.

### CERTIFICATIONS

The “New technologies for Life” Technical Vocational School is certified from M.I.U.R. for the teacher training and for the high school graduation (V EQF Level) and from Regione Toscana, (d.G. n. 1407/2016), as training agency. Fondazione Vita has the Certification of quality management system ISO 9001/2015. Finally Fondazione Vita is a partner of excellence Center for Advanced Robotics and enabling digital Technologies & Systems 4.0 - ARTES 4.0.

### KEY PARTNERING OPPORTUNITIES

- Scientific collaboration for dissemination
- Training
- High School

#### OTHER INFO:

Date of foundation: August 2015  
Company Size: 6 employees

#### Contacts:

Adress: Via Fiorentina 1, 53100 Siena - Italy  
Tel. +39 0577 231298  
info@itsvita.it  
www.itsvita.it



## V.I.T.A. LAB

### VIRTUAL INTERACTION FOR TRAINING AND ANALYSIS LAB.

The ITS VITA Foundation makes available to its students two highly technological laboratories:

- **V.I.T.A. Lab - Virtual Reality (VR) and Augmented Reality (AR) laboratory;**
- **V.I.T.A. Lab 2.0. - in addition to AR and VR technologies also includes IT, Robotics and Prototyping classrooms.**

The V.I.T.A. Lab 2.0, funded by POR CREO FESR 2014-2020 - ACTION 2.3.1, aims to train future technicians in an Industry 4.0 key through highly technological tools, software applications and immersive reality to encourage and enhance the learning of skills technical and professional requirements of the labor market.

It contributes to increasing the quality of the training offer of ITS courses, employment prospects, competitiveness and innovation of companies in the regional and national territory. A unique opportunity that allows students to work actively in the field with state-of-the-art tools, putting the theoretical foundations of the course into practice. Thanks to software applications and immersive reality, in fact, the student will be able to interact in a simulated environment in total safety, becoming an active part of the Learning by doing process: a professional training activity to train 4.0 technicians. The project stems from the need to strengthen and retrain, using these cutting-edge technologies, the current training and teaching offer and to promote an open territorial laboratory with the aim of strengthening the synergies between ITS, educational Institutions, Universities and public and private bodies to provide an effective and immediate response to the transition from the world of training to that of work.

#### OTHER INFO:

<http://vitalab.itsvita.it>







## THE BIO-INCUBATOR

## THE BIO-INCUBATOR

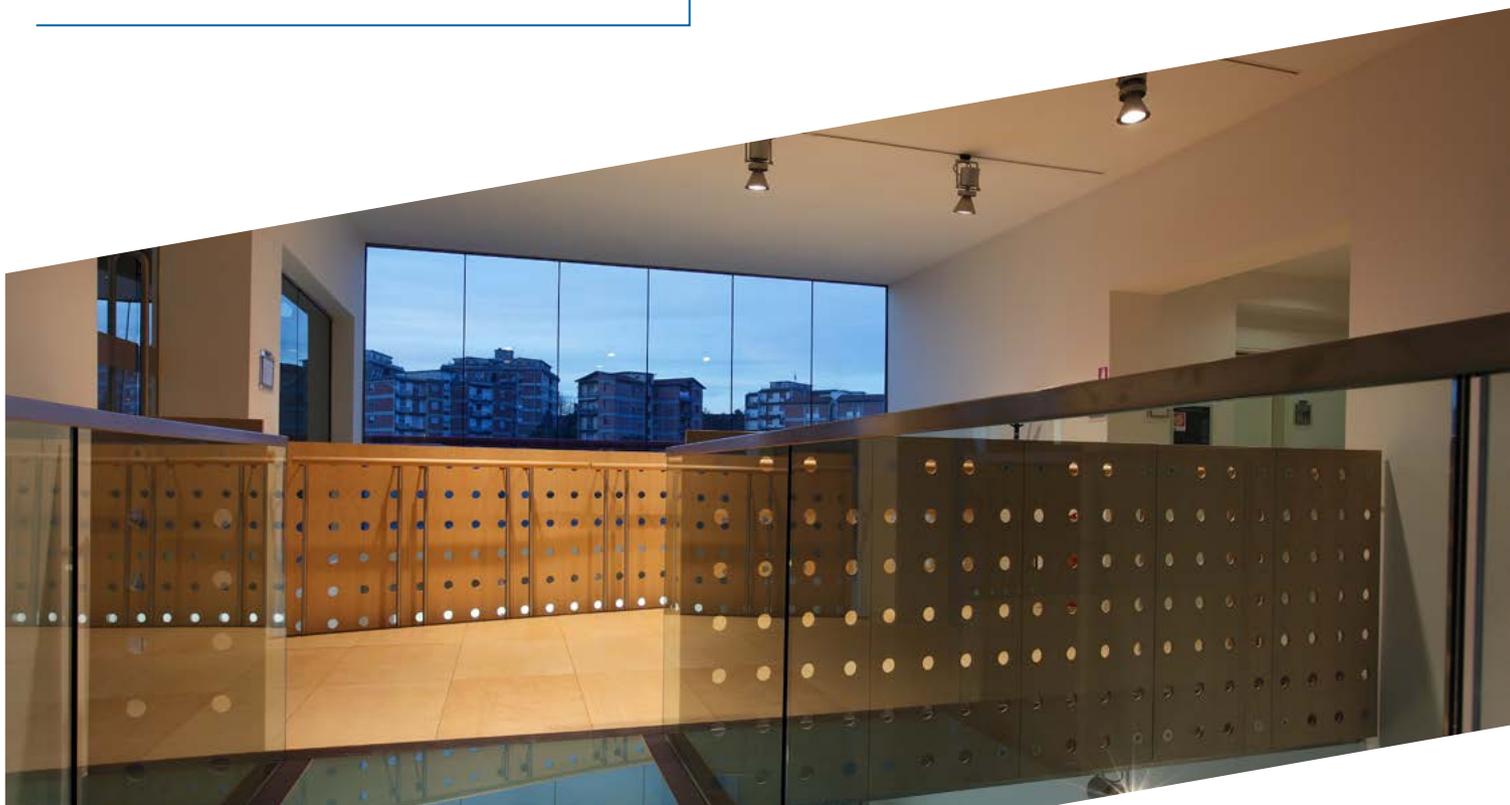
Nowadays the TLS bio-incubator hosts 53 different tenants:  
 24 companies focused on R&D and services;  
 12 public or private research groups or foundations;  
 17 affiliated companies.

**53**  
 TENANTS



### ECOSYSTEM

Increasing number of hosted companies: in 2021, 4 new tenants (incubated, affiliated companies and research groups) entered the TLS bio-incubator.



## EMPLOYEES? HIGH QUALIFIED AND FOCUSED ON R&D

Of the 624 employees (TLS Foundation and bioincubator), around 83% have at least a university degree and 42% are engaged in research and development.



# 541

COLLABORATIONS  
AND LICENCE  
AGREEMENTS  
FROM 2007



## A SOLID NETWORK OF COLLABORATION

Since 2007 incubated, affiliated companies and research groups have been able to sign 541 among collaborations and licence agreements with third parties at national and international level. 38 new collaborations and licence agreements in 2021.

## PRODUCTS ON THE MARKET

201 are the products launched on the market since 2007. Most of them are diagnostic kits, ICT products and medical devices.



# 201

THE PRODUCTS  
LAUNCHED

### GREAT RESULTS FOR OUR COMPANIES

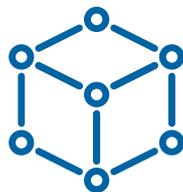
Overall turnover by hosted companies and research centers exceeds 38 Million €, +44% over 2020. Investment attracted since 2007 are 104.8 Million €.



**38.9**  
MILLION TURNOVER

**+44%**

**110**  
TIPOLOGY  
OF SERVICES



### AN ALWAYS BROADER SERVICE PORTFOLIO

Along with the increasing number of tenants, the service portfolio is evolving towards new fields like environment, clinical trials, serological tests, data management, mobile applications for medical care sector.

### WHERE ARE INVESTMENTS COMING FROM?

The increasing trend of the turnover when compared to the overall investment attracted is confirmed for 2021. From the 40.2% of 2020 to 47.4% of 2021. The increasing is even more significant (52.6%) if we consider the overall investments attracted only by enterprises from 2007.



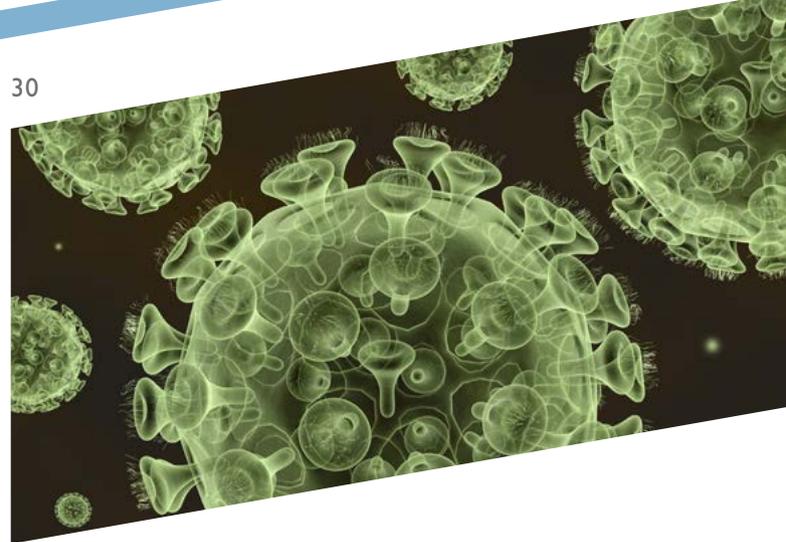
**11.8** MLN €  
INVESTMENTS  
ATTRACTED IN 2021

The performance indicators are referred to the 2021 fiscal year profit



## INCUBATED COMPANIES

FOCUSED ON RESEARCH AND SERVICES



## ACHILLES VACCINES S.R.L.

AchilleS Vaccines is a biotech company based in Siena (Italy) committed to designing novel products to tackle some of the most crucial health issues, including antibiotic resistance and emerging diseases. All with the aim of producing safe and potent vaccines in a sustainable and cost effective way. The company uses three technological platforms, a vast network of international collaborative partners and forward-looking specialist expertise. AchilleS Vaccines is incubated in TLS since 2018.

### ACTIVITY

The procedures and the employed working methods, also based on the use of big data and deep learning approaches, as well as on cooperation with leading institutes and top-notch scientists in the field, assure very high level performances and a partial de-materialization and de-localization of development and production phases. All these aspects make the company able to nimbly face and adapt to market changes providing products “faster, better and cheaper”. The versatility of the “mOMV platform” (modified Outer Membrane Vesicles) and the power of the “Lab 4.0” (a digitalized and DoE driven bioprocessing laboratory) allow AchilleS Vaccines to efficiently design and develop vaccine prototypes ready for industrial technology transfer and scale up. AchilleS Vaccines focuses its efforts on targets linked to infectious diseases and in particular to the development of vaccines against antibiotic resistance and against emerging diseases.

Products: Vaccines for new or emerging infectious diseases;  
Innovative vaccines to substitute sub-optimal existing ones;  
Vaccines against antimicrobial resistance.

### TECHNOLOGY AND PATENTS

AchilleS Vaccines leverages on 3 technology platforms:

**mOMV** - A platform which gives significant development advantages, including large-scale, cost effective production

(very high process yield and very low COGS) in addition to a sophisticated molecular manipulation to display foreign antigens and a self adjuvanticity by inclusion of bacterial component. mOMV is tested in recent clinical trials and demonstrated good tolerability and high immunogenicity.

**Lab 4.0** - An innovative Lab design assuring data quality and integrity, fully IoT integrated instruments, use of Big Data, Open Data, Data Curation, Deep Learning, Machine Learning, A.I. and DoE driving AchilleS Vaccines development as well as Advanced Project Management methods.

**Next Generation Reverse Vaccinology (NGRV)** - Auto and heterologous antigen expression, high-throughput immunology, single cell and omics capabilities, analytic vaccinology and immortalized B-memory cell are among the technologies which enable AchilleS Vaccines to run the Next Generation Reverse Vaccinology.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration

#### OTHER INFO:

Date of foundation: 2017

#### Contacts:

Strada del Petriccio e Belriguardo 35, 53100 Siena - Italy  
info@achillesvaccines.com  
www.achillesvaccines.com

## AMBRA LIFE

In Ambra we support biodiversity, enhancing the variety and adaptability of cannabis. We want to preserve the natural harmony of the plant. We collaborate with farms in enhancing their quality control. Thanks to a process that combines new technologies and tradition, we transform Cannabis Sativa L. without using any solvent, keeping the phytocomplex and the natural ratio between cannabinoids unchanged.

### ACTIVITY

We support farms, cultivators and retailers with fast and reliable analysis, customizable and solventless transformation process and a professional consultancy services. We produce both for third parties and for our branded products (the Amber selection), for which we follow the entire production chain, from seed to final oil, in collaboration with a scientific board specifically set up with the Italian company for medical hemp. We grow organically, synergistically, with integrated agriculture techniques and permaculture in Terre d'Ambra's farm.

### TECHNOLOGY AND PATENTS

Our goal is a product containing the entire plant phytocomplex and naturally rich in CBD. We preserve the peculiarities of each flower to enhance the work before the transformation. The most significant steps to get to the final product are two: cold sieving of plant material and pressing of what's been collected. With Ambra we are trying to perfect this process to the maximum and we do it taking care of every detail. Inspirations come from science and tradition. The cold sieving process perfectly sums up this vision.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: October 2019

#### Contacts:

Ambra srl  
 Headquarter: Strada del Petriccio e Belriguardo 35, 53100 Siena SI  
 Tel: 0577 381421; mob: 347 3062741  
[analisi@ambra.life](mailto:analisi@ambra.life)  
[info@ambra.life](mailto:info@ambra.life)  
[www.ambra.life](http://www.ambra.life)



## DICOFARM S.P.A.

Dicofarm, established in 1977 in Rome, is active in four major medical areas: gynecology, gastroenterology, neonatology and pediatrics. Since 2002, with the creation of AG Pharma, has an internal division between AG Pharma and Dicofarm. The company carries out clinical researches on its products and guarantees certified products with international patents and with the approval of opinion leaders and researchers from major universities worldwide.

### ACTIVITY

Principal activities are organised on two areas: adult products in gastroenterology, gynecology and urology (AG Pharma) and products focused on pediatrics and neonatology area (Dicofarm). In January 2012 Dicofarm opened a new lab in the TLS incubator with the aim to pursue R&D activities, in the context of anti-inflammatory and immunomodulatory sector, starting from cellular fractions of probiotic bacteria with proven effectiveness.

### POTENTIAL (IN 1-3 YEARS)

Innovative products' development for the treatment of viral and bacterial infections.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration

#### OTHER INFO:

Date of foundation: 1977

Company Size: 170 (DICOFARM Group)

#### Contacts:

Headquarter: Via del Casale della Marcigliana, 29 - 00138 Rome - Italy

Tel: +39 06 8856131; fax: +39 06 8889334

info@dicofarm.it

www.dicofarm.it



## DIESSE DIAGNOSTICA SENESE S.P.A.

DIESSE Diagnostica Senese SB S.p.A. is an Italian company with an integrated and entirely inhouse production of diagnostic solutions for immune system. Its headquarters are in Siena in the DIESSE BIOTECH CAMPUS, the biggest R&D and biotech production plant dedicated to IVD in Italy and among the biggest in EU, where the design and implementation of tests and new automated diagnostic detection tools meets Italian design and cutting-edge technology. The company has a global presence in over 100 countries and since its foundation in 1980 it has developed, produced and marketed innovative diagnostic systems primarily in the field of immunodiagnosics and automatic measurement of erythrocyte sedimentation rate (ESR).

### ACTIVITY

A mainstay of DIESSE strategy is the in-house production of most of the basic biologic components of the diagnostic kits (polyclonal and monoclonal antibodies, native and recombinant antigens), along with the capacity of designing instruments and dedicated plastic devices in order to develop close automated systems. The R&D division of DIESSE S.p.A. creates diagnostic systems based on the development of biochemical and immunometric assays and instrumentation for the automation of analyses, collection and data processing. The main activity of DIESSE in TLS is the development of recombinant antigens and monoclonal antibodies to be used in kits for the serological diagnosis of various infectious diseases based on the detection of IgG, IgA and IgM antibodies, and for the direct search for antigens from pathogenic microorganisms in biological samples.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration

### OTHER INFO:

Date of foundation: 1980 Company  
Size: around 200 employees

### Contacts:

Strada dei Laghi 39, 53035 Monteriggioni (SI) - Italy  
Tel.+39 0577 309554  
customercare@diesse.it  
www.diesse.it



## EPIGEN THERAPEUTICS S.R.L.

Epigen Therapeutics is a biopharmaceutical company whose main office is located in Friuli-Venezia Giulia at the Polo Tecnologico of Pordenone (Italy). The company is dedicated to the research and development of therapeutic approaches and innovative diagnostic tools in the immuno-oncology field to be made available to cancer patients. Epigen Therapeutics has a Research & Development Unit at the TLS incubator.

### ACTIVITY

Translational skills of Epigen Therapeutics are based on expertise in cancer epigenetics, immunology and immunotherapy. Core activity: to develop and bring to the clinic a proprietary epigenetically-based, autologous, multivalent cellular vaccine for cancer treatment (DeMethAVax).

Other activities: development of pre-clinical (in vitro cell cultures and murine models) and clinical projects in Immuno-Oncology in collaboration with industrial and academic partners; services delivery for: immunomonitoring of cancer patients; epigenetic, phenotypic and molecular analyses of prognostic/predictive biomarkers; scientific consultancy on novel immuno-therapeutic strategies.

### TECHNOLOGY AND PATENTS

“Antigen presenting cells, method for their preparation and their use for cancer vaccines” PATENT NUMBER PCT/IT2002/000488.

### POTENTIAL (IN 1-3 YEARS)

Develop and bring to the clinic the proprietary epigenetically-based, autologous, multivalent cellular vaccine for cancer treatment (DeMethAVax): GMP validation procedures for vaccine set-up; obtaining clinical transferability authorizations; identification of the proper manufacturing site; first-in-man clinical study development.



### KEY PARTNERING OPPORTUNITIES

- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: 2011  
Company Size: 2 employees

#### Contacts:

c/o Polo Tecnologico PN - Via Roveredo 20/b - 33170 Pordenone, Italy  
Tel. + 39 0434 504411 - Fax: + 39 0434 504410  
c/o MRC - Fondazione TLS , Strada del Petriccio e Belriguardo 35,  
53100 Siena Italy  
Phone +39-0577381375  
For physician related inquiries: [clinical@epigentherapeutics.com](mailto:clinical@epigentherapeutics.com)  
For investor related inquiries: [legal@epigentherapeutics.com](mailto:legal@epigentherapeutics.com)  
For media related inquiries: [info@epigentherapeutics.com](mailto:info@epigentherapeutics.com)  
[www.epigentherapeutics.com](http://www.epigentherapeutics.com)

## KEDRION BIOPHARMA

Kedrion Biopharma is amongst the top plasma-derived therapeutics companies worldwide, and has significant experience in the development, manufacturing and distribution of plasma-derived products. Headquartered in Tuscany, it distributes its products in more than 100 countries worldwide and has production sites in Italy, Hungary, the United States and Canada.

### ACTIVITY TIPOLOGY/PRODUCTS/SERVICES

Kedrion collects plasma from which it produces therapeutic proteins. Kedrion's products (more than 20 on the market) represent life-saving treatments for rare diseases such as Immunoglobulins for Primary Immunodeficiencies, Coagulation Factors for Hemophilia and Plasminogen for Plasminogen Deficiency. Kedrion also manufactures and/or distributes products in the anti-infectives (Hyperimmune Immunoglobulin for Rabies) and critical care (Albumin).

### TECHNOLOGY AND PATENTS

Kedrion's industrial platform focusses on the fractionation of plasma to purify therapeutically relevant proteins by two methods. The first, based on the Cohn's plasma fractionation process followed by customized chromatography, can handle large-scale purification (1000s liters of plasma) and is employed for the majority of Kedrion's products. The second, based on an alternative technology (affinity chromatography) has been acquired in 2021 and is a smaller scale process (100s liters), currently employed to produce Ryplazim®, a plasma-derived Plasminogen. Kedrion is the holder of 19 patents, the majority on the purification of proteins from plasma for therapeutic purposes.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

### OTHER INFO:

In Italy, Kedrion is a partner of the National Health System, which it concretely supports in the pursuit of self-sufficiency in the supply of plasma-derived products.

Date of foundation: 2001

Employees: 2,700 worldwide

### Contacts:

Headquarter: Loc. Il Ciocco, Castelvechio Pascoli

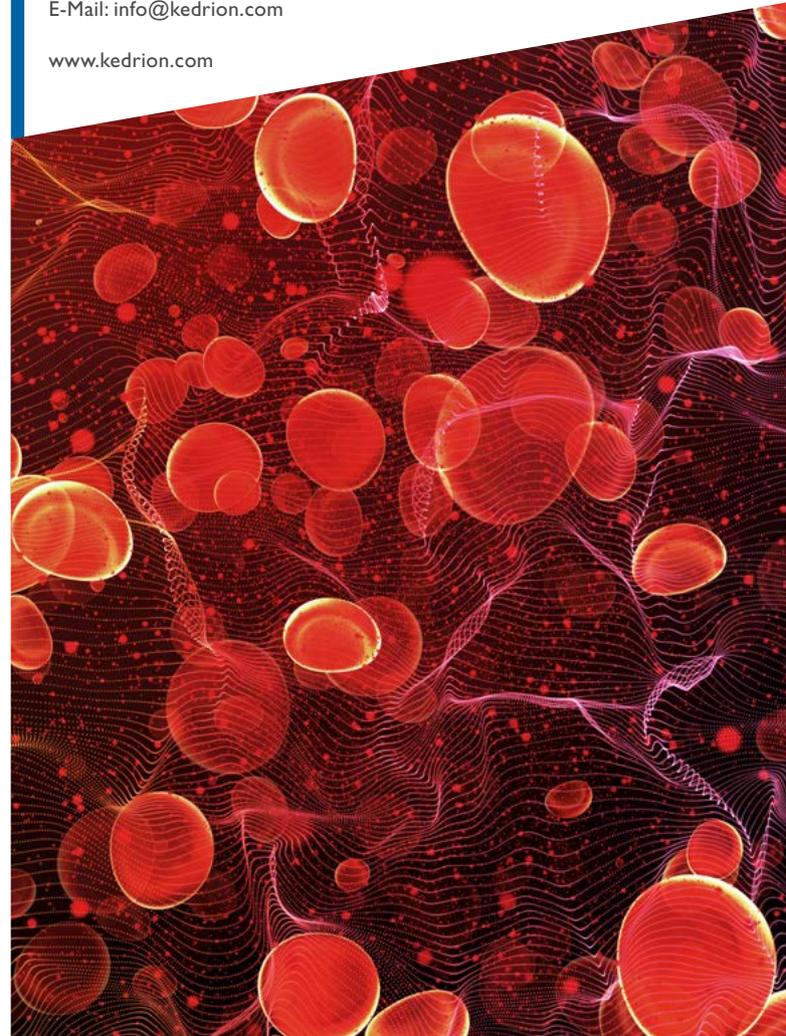
55051 Barga, Lucca (Italy)

Tel: +39 0583 767100

Fax: +39 02 57763789

E-Mail: [info@kedrion.com](mailto:info@kedrion.com)

[www.kedrion.com](http://www.kedrion.com)



## LONZA

Lonza is the preferred global partner to the pharmaceutical, biotech and nutrition markets. We work to enable a healthier world by supporting our customers to deliver new and innovative medicines that help treat a wide range of diseases. We achieve this by combining technological insight with world-class manufacturing, scientific expertise and process excellence. Our unparalleled breadth of offerings enables our customers to commercialize their discoveries and innovations in the healthcare sector.

Founded in 1897 in the Swiss Alps, today, Lonza operates across five continents. With approximately 15,000 full-time employees, we comprise high-performing teams and individual talent that make a meaningful difference to our own business, as well as to the communities in which we operate. The company generated sales of CHF 2.5 billion with a CORE EBITDA of CHF 847 million in H1 2021. Find out more at [www.lonza.com](http://www.lonza.com).

### ACTIVITY

Exosomes and other extracellular vesicles (EVs) are emerging as new therapeutic and/or drug carrier modalities with the potential to overcome or, at least complement, the existing platforms for cell and gene therapy. Incorporated within the Cell and Gene Lonza Business Unit, the newly established unit in Siena will provide dedicated services for EV characterization, assay and process development for the manufacturing of EV-based therapies. A dedicated team of 12 EV experts will support biotech and pharma companies to bring their EV therapies to life.

### TECHNOLOGIES AND PATENTS

The Unit will leverage intellectual property and technologies that have been developed within Lonza or accessed through recent M&A to serve clients and, at the same time, drive innovation to advance the whole EV field in the coming years.

### POTENTIAL (IN 1-3 YEARS)

The Unit has the objective to organically grow in a market that is still in its infancy and will work to bring products on the path to commercialization in the near future.

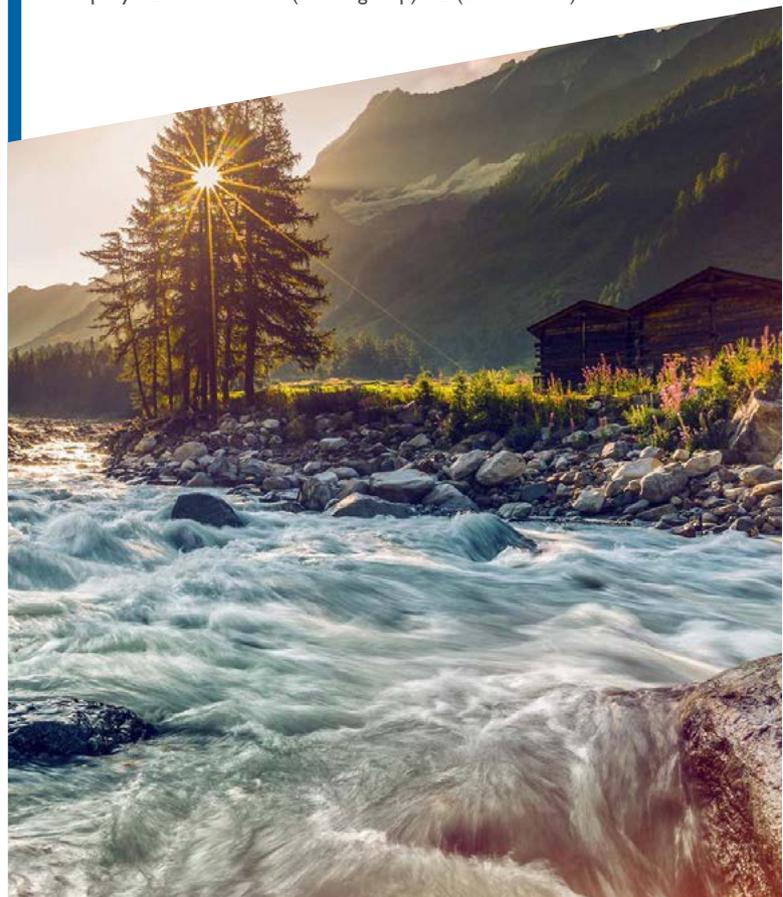
### KEY PARTNERING OPPORTUNITY

- Scientific collaboration
- Strategic partnership
- Grant search

### OTHER INFO:

Date of foundation: 1897 (Lonza group), 2021 (Lonza Siena)

Company size: over 15000 (Lonza group). 12 (Lonza Siena)



# MATERIA MEDICA PROCESSING S.R.L.

Materia Medica Processing is a new company dedicated to the extraction, purification and analysis of hemp. Our mission reflects the increasing need for scientific knowledge in the field of healthcare and wellness products in a market characterised by evolved consumers. Our staff has backgrounds in chemistry and are experienced in pharmaceutical R&D, phytochemical analysis and the purification of natural molecules

## ACTIVITY

Materia Medica Processing is devoted to the support and development of standardized processes that hold great technological and scientific value in the field of phytotherapy, with a particular focus on the chemistry of phytocomplexes, including characterization and extraction optimization. The laboratory is fully equipped for the scientific investigation of secondary metabolites and contaminants found in botanical material. Furthermore, Materia Labs is the only dedicated cannabis testing facility in Italy. We monitor every phase of the extraction and purification in compliance with national and international standards: we obtained ISO 9001:2015 and GMP cosmetics 22716: 2008 certifications.

## POTENTIAL (IN 1-3 YEARS)

The cannabis industry is one of the fastest growing industries in countries where medical and adult use have been legalized. There is significant space for research, product development and business opportunities, but more importantly there is an urgent and unmet medical need. We are active in processing extracts and in analytical service. We have the potential to fully manage our operations out of a GMP pharma environment.

## KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership



### OTHER INFO:

Date of foundation: 2018

Company Size: 3 employees plus a CTO a CEO and a CFO

### Contacts:

Headquarter: Via della Rena 20, 39100 Bolzano

Tel. +39 057 738 1420

Laboratory: Via Fiorentina 1, 53100 Siena

Tel. +39 057 7231294

info@materiamedicaprocessing.eu

materiamedicaprocessing.eu

## MICROBIOTEC S.R.L.

A knowledge-based SME founded in 2009, with headquarters in Monteriggioni and Office/Laboratory at the “Toscana Life Sciences” (TLS) Science Park since 2011. Microbiotec is a Start-up company based on the technology and innovation developed at the Laboratory of Molecular Microbiology and Biotechnology of the University of Siena. The company works in the fields of microbial biotechnology, probiotics, vaccines and diagnostics.

### ACTIVITY

Current research activities include projects on Microbial Biotechnology with focus on bacterial lysates, probiotics based on Lactobacilli, vaccines formulations and new diagnostics. From 2015, Microbiotec has implemented several methods for transcriptome analysis of RNA Sequencing data for study the human immune response to Ebola vaccine.

Microbiotec has been Partner in many EU Projects as CHAARM (Combined Highly Active Anti-Retroviral Microbiocides), ADITEC (Advanced Immunization Technologies) and MOTIF (Microbicide Optimization Through Innovative Formulation). Actually is engaged in VSV-EBOVAC (Vaccine safety and immunogenicity signature of human responses to VSV-ZEBOV), VSV-EBOPLUS (Systems analysis of adult and pediatric response to the VSV-ZEBOV Ebola vaccine) funded by IMI2 and VacPath (Novel vaccine vectors to resist pathogen challenge) in the Marie Skłodowska-Curie Innovative Training Networks. Recently, the company started the Quality Management Systems and obtained the quality certifications for UNI EN ISO 9001:2015, UNI EN ISO 13485:2016 for Medical Devices and GMP for Dietary Supplements.

### TECHNOLOGY AND PATENTS

Technologies include laboratory for bacteriology and biotechnology and basic biochemistry. Other relevant

instruments include a benchtop Lyophilizer and an High Pressure Homogenizer. Computers with appropriate programs are also available for bioinformatics analysis of Next Generation Sequencing (NGS) data.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership

#### OTHER INFO:

Date of foundation: 2009  
Company Size: 3 employees

#### Contacts:

Strada del Petriccio e Belriguardo, 35, 53100 Siena  
Tel. +39 0577 381303  
[microbiotec@microbiotec.eu](mailto:microbiotec@microbiotec.eu)



# PHARMA INTEGRATION S.R.L.

Pharma Integration is an innovative Italian company founded in 2016 thanks to the expertise and inventiveness of highly specialised Italian technicians and the support of multinational pharmaceutical companies. Its goal is to help pharmaceutical companies anticipate the world of tomorrow by creating the best fill-finishing systems to deliver life-saving drugs within the shortest possible time.

Today the company is led by a talented young team specialised in robotics, artificial intelligence, and pharmaceuticals.

## TECHNOLOGY

Pharma Integration designs and develops cutting-edge systems dedicated to small volume fill-finishing for next-generation drugs. Services, technology, and products are offered worldwide.

The systems are characterised by the massive use of robotics: 6-axis robotic arms are able to handle each and every phase of the fill-finishing process in complete autonomy, without requiring any human intervention and at the same time guaranteeing great productivity, extreme precision and absolute repeatability of actions.

## ACTIVITY

Pharma Integration stems from the need to deeply renew the pharmaceutical process in order to make it safe and efficient, flexible and capable of facing the new challenges that arise every day in the biopharmaceutical field, providing pharmaceutical companies with fill-finishing systems as innovative as their medicines and making Pharma 4.0 a present reality - not just a future goal.

In 2016, Pharma Integration started the design and prototyping of the systems, with the aim of renewing the

pharmaceutical process to make it safer and more efficient at the same time, at a lower cost than traditional “elephant” lines. After 4 years of development and investments, in 2021, the company began the industrialisation of Pharma Integration systems, proposing an Off-the-Shelf approach that allows pharmaceutical companies to get to market faster.

### OTHER INFO:

Date of foundation: 2016

Company Size: 28 employees

### Contacts:

Strada Del Petriccio e Belriguardo 35, 53100 - Siena (Italy)

Tel. +39 0577 381201

[info@pharma-integration.it](mailto:info@pharma-integration.it)

[www.pharmaintegration.it](http://www.pharmaintegration.it)



## PIERRE IMPIANTI

Pierre Impianti is a company that has been offering design, set-up and technical assistance services for chemical and scientific research laboratories, for over 30 years. The company is incubated at the Toscana Life Sciences (TLS) Foundation and it is specialized in the creation of technologically advanced systems and in the setting up field of the layout of the technical furniture laboratory; starting from the study of functionality and equipment, adapted to the specific needs of the customer. The company also offers technical assistance for scientific equipment such as chemical and biological hoods, isolators, incubators and centrifuges. Since its creation, Pierre Impianti has developed a specific know-how in the field of laboratory reconfiguration, in the integrated hi-tech equipment logistics and in the realization of utilities intended to supply new equipment projects.

### ACTIVITY

Pierre Impianti makes ordinary and extraordinary maintenance activities and periodic checks of scientific equipment and collective protection devices (DPC), to ensure maximum safety and efficiency of the machineries. Moreover, Pierre Impianti offers periodic equipment sanitization services and workplaces made with: Bioquell technology that use Vaporized Hydrogen Peroxide (HPV); environmental sterilization made through the use of Ozonizers-Ionizers and, it also provides to create sterilization systems by using fixed or mobile systems of germicidal lamps, for rooms that are at risk of biological contamination. Within TLS and its bio incubator, this company oversaw the setting up of laboratories, built inside the “building 36” and in the “MRC building” too. In addition to the general maintenance, it also makes periodic checks and reconfigurations of the technical furniture and all utilities at the service of the companies that are affiliated with the TLS Foundation.



### OTHER INFO:

#### Contacts:

Operational headquarters:  
Via Fiorentina I, 53100, Siena  
Email: pierre.impianti@virgilio.it

## POLO GGB S.R.L

Polo GGB is a highly specialized company working in the Life Sciences field to develop and promote Genomics and Genetics services to the academic and public/private sector. The Headquarters and the Genomics & Bioinformatics laboratory are located in Siena, at the MRC of TLS, while Terni hosts an Immunoassay Laboratory and a state-of-the-art mosquito confined-release facility for Ecological and Genetics studies to control vector borne diseases. The company has been expanding in recent years to incorporate/include diagnostic services. Polo GGB can now count on two Diagnostics laboratories (in Siena and Abano Terme) and two sampling hubs. A team of more than 30 young and highly qualified members of staff, mostly PhD researchers, with expertise in different areas represent Polo GGB and its extraordinary environment where it is possible to continuously learn and innovate.

### ACTIVITY

The activities of Polo GGB can be classified in two main areas: Services and Research both operating in the Genetics, Genomics and Diagnostics fields. The Genomics & Bioinformatics Laboratory is committed to delivering next-generation sequencing services and bioinformatics services for research and diagnostic applications. The laboratory is equipped with the most innovative Next generation Sequencing equipment based on the Illumina and Nanopore technologies and with an outstanding Bioinformatics capability for the processing of biological data. The Ecology & Genetics Laboratory is engaged in cutting-edge research for the control of vector-borne diseases, with a particular focus on Malaria and on the development of genetically modified mosquitoes for its control. The activities of the Immunoassay Laboratory focus on the production of custom monoclonal antibodies (MAb) and ELISA immunoassays for Research purposes. Finally, the Diagnostics laboratories of Siena and Abano carry out numerous tests and examinations, from COVID-19

diagnostic tests, laboratory medicine and genetic analyses. Polo GGB collaborates with hospitals and national health centers for the validation of new diagnostic assays, which Polo GGB designs and implements in house to constantly update its diagnostic offer.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership

#### OTHER INFO:

Date of foundation: 2011

Company Size: more than 30 employees

#### Contacts:

**c/o TLS Incubator** - Via Fiorentina 1, 53100, Siena - Italy  
Tel. +39 0577 381312

**c/o Laboratorio di Biotecnologie** - Via Mazzieri SNC, 05100 Terni, Italy - Tel. +39 0744 220112 / +39 0744 202816

info@pologgb.com  
www.pologgb.com



## SIENA IMAGING

Siena Imaging is hosted in TLS since June 2017 when the company was founded as a spin-off of the neuroimaging research group at the Siena University. The idea to start a business based on the high level proprietary technology, was born after more than 15 years of research developed inside the academic laboratories. Founders and shareholders are: Nicola De Stefano full professor of Neurology at the Department of Medical Science, Neuroscience and Chirurgia; Giacomo Demurtas expert in computer science; Marco Battaglini Researcher at Siena University and CEO of the newborn company.

### ACTIVITY

Hospitals and pharma companies, quantitative indexes of tissue damage from NMR images of the brain. Moreover customers can get access to dedicated software for monitoring and diagnoses of neurodegenerative and autoimmune diseases like Alzheimer and Multiple Sclerosis. In particular the company is working at the development of a Web 2.0 platform for the centralized analysis of NMR images coming from clinical trials aimed at the measurement of brain damage.

The company develops its software in collaboration with the most important neuroimaging centers in the world like the one in Oxford (UK) and can count on a large network of national and international pharma companies and information technology centers.

### POTENTIAL (IN 1-3 YEARS)

1. Siena Imaging, in addition to performing the Central Readers activities in clinical trials, aims to become a Contract Research Organization (CRO).
2. The company wants to make the image visualization and management platform available to neurologists and neuroradiologists.



### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- grant search

#### OTHER INFO:

Date of foundation: 2017

Company Size: 15 employees

#### Contacts:

c/o Toscana Life Sciences Foundation - Via Fiorentina 1, 53100 Siena - Italy - Phone: +39 0577 231211

[www.sienaimaging.it](http://www.sienaimaging.it)

## TECHNOLOGY FOR ALL - T4ALL S.R.L.

Technology for All - T4ALL is a private company providing R&D and IT solutions in a widespread set of domains, including some relevant socio-economic fields such as healthcare, remote monitoring tourism, cultural heritage and mobile services.

Founded in 2008 as a spin-off company of University of Siena - Dept. of Information Engineering - since 2010 the company has been incubated into Toscana Life Sciences Technological park and since 2018 has been listed in the innovative SMEs' special register, hold by Italian Ministry of Economic Development.

### ACTIVITY

The company's key activities refer to two different business units:

The **Digital Health Division** provides solutions for remote monitoring of vital signs and telemedicine, supporting ageing people and patients affected by chronic diseases. The company is also engaged in clinical risk management, addressing secure identification of patients in the hospital setting.

The **ICT Division** promotes the adoption of smart technologies in Web and Mobile service scenarios, with focus on user engagement (proximity marketing, augmented reality, digital storytelling), mobility and sustainable development, Beacon and RF-IId technology and wireless sensor networks.

### POTENTIAL (IN 1-3 YEARS)

- Double digit growth in turnover in the last 2 years, the company is gathering new projects and customers to increase market penetration.
- Unique Italian certified distributor of the Laserband solution for patient identification.
- Design of a smart and sustainable platform based on wearable technology to support deaf women in a sound oriented world. The company has designed the

QUIETUDE integrated platform, a collection of interactive jewellery, able to filter, recognise and notify environmental sounds through vibration, dynamic lights and shape changes. By wearing these accessories, deaf women will be able to perceive voices and other sounds through their body.

### KEY PARTNERING OPPORTUNITIES

- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: 2008

Company Size: 6 employees

#### Contacts:

c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy

Tel. +39 0577 231257

info@t4all.it

www.t4all.it



## VISMEDERI GROUP

The **VisMederi Group** is a highly innovative reality in the Sienese area, Tuscany, Italy, especially well-known and appreciated on the international market of Research Services for the Pharmaceutical Industry.

**VisMederi Holding Srl unipersonale** ([www.vismederiholding.com](http://www.vismederiholding.com)) is the company that holds a qualified share of the companies that are part of the VisMederi Group.

Over the years, the Group has experienced a stable growth path that led it to **employ more than 150 people** in the area in 2022, including researchers and highly qualified laboratory personnel.

Its longest-running and best-known company is **VisMederi Srl** ([www.vismederi.com](http://www.vismederi.com)) which, set out to consolidate its reputation as a reference centre for clinical research in the field of vaccines, boasts a rapid increase in size and a turnover in massive expansion, underlining the strategic importance of the reference sector, in strong contrast to the negative trend that the recent pandemic crisis has generated across the whole of the traditional manufacturing sectors. Always active in several areas of Life Sciences, VisMederi's core business lies on the evaluation of vaccine efficacy and offers its customers a wide range of services including the development of serological and virological tests, diagnostic tests, cell cultures and project management related to clinical research protocols.

The VisMederi Group encompasses its activities to several related sectors, such as food and environmental analyses, recently under development thanks to the commercial success achieved by innovative types of tests offered by **VisMederi Life Sciences Srl** ([www.vismederilifesciences.com](http://www.vismederilifesciences.com)), devoted to the evaluation of effectiveness of antiviral treatments in fabrics and different types of food packaging. **VisMederi Pharma Srl** ([www.vismederipharma.com](http://www.vismederipharma.com)) operates in the wholesale sector of medical devices, such as Covid-19 swabs, and food

supplements. Other activities carried out by the company range from Quality Control on the textile market with **VisMederi Textyle Srl** ([www.vismederitextyle.com](http://www.vismederitextyle.com)) to Higher Education in Life Sciences offered by its unipersonal limited liability company, **ETHS - Education and Training for Health Sciences Srl unipersonale**. Research in VisMederi plays a prominent role and remains the core business of **VisMederi Research Srl** ([www.vismederiresearch.com](http://www.vismederiresearch.com)), in which many of the innovative methods offered by the VisMederi Group are designed and tested. Alongside the latter, the **VisMederi Foundation** operates with its commitment to spread the value created by research in the area of Siena, the city where the origins of the Group are rooted and the place where its activities are focused.

### OTHER INFO:

#### Contacts:

Laboratories: Strada del Petriccio e Belriguardo, 35  
53100 Siena, Italy  
Phone +39 0577 381253/55

Headquarter: Via Franco Ferrini 53  
Loc. Tognazza - San Martino  
53035 Monteriggioni (SI), Italy  
Phone +39 0577 1520990



## VISMEDERI GROUP VISMEDERI SRL

VisMederi Srl, founded in 2009 thanks to the considerable scientific expertise and experience of its management and staff, is a globally skilled, well-resourced Research and Service Company that supports businesses and big pharma industries in improving public health through the development and optimization of safer and more effective drugs and vaccines.

VisMederi conducts and perfects serological tests to evaluate the immunogenicity of vaccines, creates and validates bioanalytical methods and experimental protocols for the release of therapeutic molecules and vaccines in development phases and performs quality control during the intermediate stages of vaccine production.

The tests carried out by VisMederi always require a validation process consistent with international guidelines such as “Validation of Analytical Procedures: Text and Methodology (ICH)” and as required by leading international regulatory bodies such as EMA (European Medicines Agency), FDA (Food and Drug Administration) and PMDA (Pharmaceuticals and Medical Devices Agency).

### OTHER INFO:

Date of foundation: 2009  
Administrator: Duccio Meiattini  
Company size: 80

### Contacts:

**VisMederi Srl**  
Strada del Petriccio e Belriguardo, 35  
53100 Siena, Italia  
Phone +39 0577 381254/55  
info@vismederi.com



## VISMEDERI GROUP VISMEDERI RESEARCH SRL

Founded in 2014, and based in Siena, VisMederi Research Srl is VisMederi's "sister company" that is deputy to performing basic and applied research activities, supporting the development and optimization of new protocols. Among various activities, Vismederi Research handles culturing and storage of various human and animal cell lines; growth and propagation of influenza viruses in the cell and embryonated chicken eggs platforms; production of pseudotyped viral particles along with many assays optimised to be applied in research studies for Influenza and for newly emerging infectious diseases.

### OTHER INFO:

Date of foundation: 2014  
Administrator: Duccio Meiattini  
Company size: 8

### Contacts:

**VisMederi Research Srl**  
Strada del Petriccio e Belriguardo, 35  
53100 Siena, Italia  
Phone +39 0577 381259



## VISMEDERI GROUP VISMEDERI LIFE SCIENCES SRL

VisMederi Life Sciences offers professional chemical-physical and microbiological analysis services within the scope of food and environmental self-control procedures through investigation on food, work surfaces, water and soil. It also carries out validation and drafting of HACCP self-control plans, training courses on current regulations, internal and supplier inspections and qualified consultancy.

Today the VisMederi Life Sciences laboratory is able to carry out tests for the detection of Coronavirus on different types of surfaces and in any structure, detecting the presence of SARS COV- 2 virus RNA using a Real Time PCR technique.

### OTHER INFO:

Date of foundation: 2012  
Administrator: Duccio Meiattini  
Company size: 7

### Contacts:

**VisMederi Life Sciences**  
Strada del Petriccio e Belriguardo, 35  
53100 Siena, Italia  
Phone +39 0577 381257  
[info@vismederilifesciences.com](mailto:info@vismederilifesciences.com)







## RESEARCH GROUPS



## COMPUTATIONAL AND TRANSLATIONAL GENOMICS LABORATORY, INSTITUTE OF INFORMATICS AND TELEMATICS OF THE NATIONAL RESEARCH COUNCIL (IIT-CNR)

The CTG Laboratory's research focuses on the development of computational and analytical methods to transform experimental molecular and clinical data into relevant information to improve clinical decision-making in the field of Precision Medicine. The approach is multidisciplinary combining mathematics, statistics, and computer science to dissect the complexity of biological and medical data.

### ACTIVITY

Researchers have wide expertise in analyzing high-throughput data (whole and exome seq, RNAseq, small RNAseq), and in developing ML/DP methods for copy number variation (CNV) identification from HTS data and their characterization. Further research interests include interpreting the role of non-coding variants in genetic disease; modeling patient-specific tumor heterogeneity using multi-omics data integration; identifying actionable cancer neoepitopes; the characterization of the functional role of microRNAs and their regulatory networks in tumor drug resistance mechanisms and in cardiac pathogenesis; the identification of non-invasive biomarkers for therapeutic oncological monitoring and drug resistance.

### TECHNOLOGY AND PATENTS

For the complete list of publications please refer to <https://scholar.google.com/citations?user=fvdBhXYAAAAJ&hl=en>

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

### OTHER INFO:

Employees: 9

### Contacts:

Romina D'Aurizio, PhD  
Researcher, IIT-CNR  
[romina.daurizio@iit.cnr.it](mailto:romina.daurizio@iit.cnr.it)

### Website:

<https://ctglab.github.io>  
<https://www.iit.cnr.it/>

## CENTER FOR IMMUNO-ONCOLOGY, UNIVERSITY HOSPITAL OF SIENA

The Center for Immuno-Oncology (CIO) is a multidisciplinary entity of the Azienda Ospedaliera Universitaria Senese (AOUS), established in 2017 by the AOUS to allow clinical and pre-clinical researchers to operate in a highly integrated, comprehensive scientific environment dedicated to cancer immunotherapy. The CIO has 4 fundamental structural units: the clinical facilities of Medical Oncology and Immunotherapy, the Clinical Research unit for clinical trials, the Translational Laboratories dedicated to the activities supporting the clinical trial programs, and the Pre-Clinical Laboratories dedicated to basic research (located at MRC Building c/o TLS incubator).

### ACTIVITY

Main activities of the Center are:

- Clinical and experimental immunotherapy of solid malignancies;
- Immunomonitoring of patients treated within clinical trials of cancer immunotherapy;
- Epigenetic regulation of immune-related mechanisms involved in tumor progression and resistance to immunotherapy;
- Immunomodulatory activity of new epigenetic drugs to identify new partners for immunotherapy protocols;
- Therapeutic efficacy of new bio-immunotherapeutic agents and their combinations to evaluate their anti-tumor activities.

### POTENTIAL (IN 1-3 YEARS)

- Identification of epigenetically-modeled, immune-related features underlying tumor progression and metastatization;
- Characterization of epigenetically-sustained mechanism(s) accounting for primary and secondary resistance to immunotherapies;



- Implementation of highly innovative, hypothesis-driven, epigenetically-based, immunotherapy clinical trials in cancer patients;
- Identification of predictive biomarkers in the context of innovative immunotherapies;
- Development of new personalized combined epigenetic-immunotherapeutic approaches.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

##### Contacts:

CIO Director: Prof. Michele Maio, Azienda Ospedaliera Universitaria Senese e Università degli studi di Siena, viale Bracci 16, 53100 Siena - Italy  
mmaiocro@gmail.com

CIO Pre-Clinical Laboratories: Dr. Alessia Covre, MRC Building c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy  
alessiacovre@gmail.com

## CERM FOUNDATION (COMPETITIVENESS, RULES AND MARKETS)

CeRM is an independent research center created with the institutional aim at contributing to the enhancement of the technical quality and transparency of economic policy and market regulation decisions.

### ACTIVITY

CeRM's studies mainly regard institutional reforms, the modernization of the welfare system, scientific and technological innovation, healthcare and research systems,

the transformation of the labor market, and the design of regulatory structures and governance models with application to the different contexts in which the business activity is carried out.

OTHER INFO:  
[www.cermlab.it](http://www.cermlab.it)



## DEPARTMENT OF MEDICAL SCIENCES, SURGICAL AND NEUROSCIENCES (DSMNC), UNIVERSITY OF SIENA

The Department of Medical Sciences, Surgical and Neurosciences (DSMNC) was born from the desire to aggregate the initial proposal of three Departments of the University of Siena thus favouring a broad aggregation in a context of organic continuity among the Scientific-Disciplinary Sectors. DSMNC promotes teaching and research activities in the Area of Biomedical and Medical Sciences and is an active part of the Tuscany Regional Centre for Precision Medicine (CReMeP).

### ACTIVITY

Research activities cross multiple contexts and are aimed at the identification of novel molecular mechanisms of various diseases, including metabolic disorders, endocrine, neurodegenerative, cancer and immune-mediated diseases, as well as at the identification of innovative biomarkers in order to foster a broad development of precision and personalized medicine. The development and implementation of high-throughput platforms for nucleic acid sequencing and analysis and the existence of an advanced high-resolution microscopy image analysis platforms and expertise represent two of the multiple strengths upon which the translational research activities of the DSMCN are based.

### TECHNOLOGY AND PATENTS

DSMNC research lab has a strong know-how on the analysis of multiples biomarkers molecules (e.g. small RNAs) from biological fluids in several metabolic/endocrine and

immune-related disease contexts. Researchers of DSMNC have recently developed a standardized platform for sequencing analysis of small RNAs from biological fluids. Moreover, high-throughput molecular solutions (exome, whole genome, microbiome sequencing) have been well established, alongside with a solid expertise in confocal microscopy, whole slide fluorescence microscopy and laser capture microdissection analysis.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- grant search

#### OTHER INFO:

Employees: 14

#### Contacts:

Headquarter: Dipartimento di Scienze Mediche Chirurgiche e Neuroscienze\_ Università degli Studi di Siena

Viale M. Bracci, 16

53100 Siena, Italy

Website: <https://www.dsmcn.unisi.it/it>



## LIAISON OFFICE (LO), UNIVERSITY OF SIENA

The Liaison Office (LO) of the University of Siena was founded in 1998 to promote the research activities and the entrepreneurship of students, researchers and professors carried out in university departments through virtuous technology transfer practices. The LO offers a series of services to facilitate new partnerships between academic community and companies, Intellectual Property, licensing activities and the creation of spin-off companies. The LO opened an office at Toscana Life Sciences incubator in March 2008, along with the signature of a TLS - University of Siena collaboration agreement.

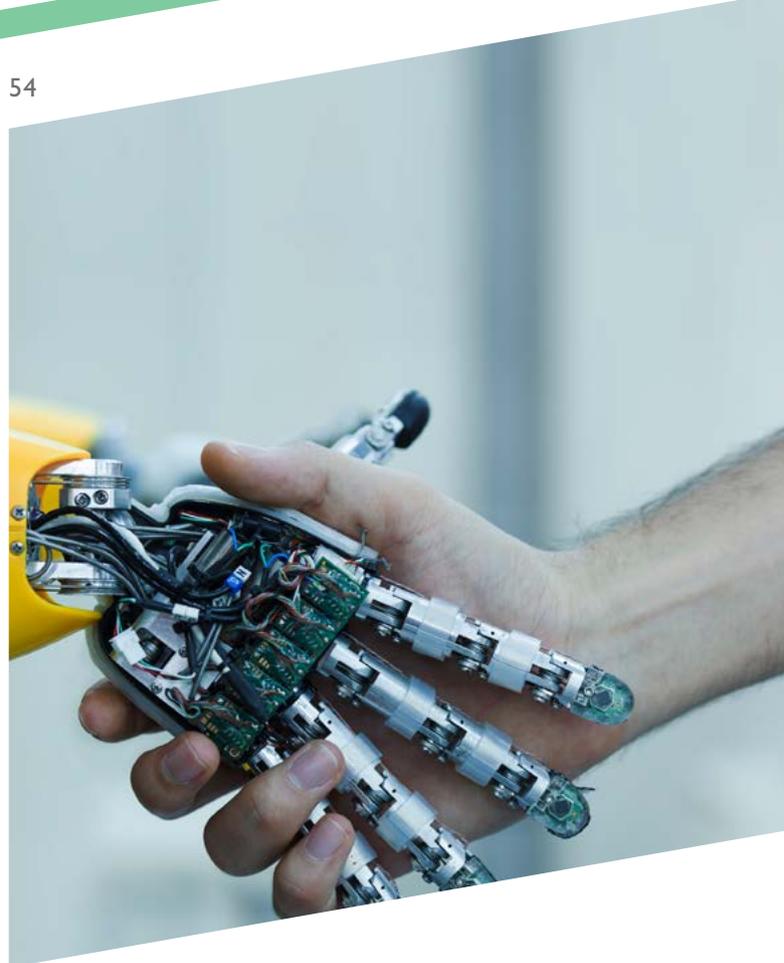
### ACTIVITY

The Liaison Office promotes and coordinates initiatives between the University and all the players that can contribute to empower the potentials of the University. Among others, it is possible to define four main fields in which the LO operates:

- a. Academic spin-offs and start-ups;
- b. Intellectual property services;
- c. Joint Research Laboratories (JRL);
- d. Education, dissemination and technology transfer.

### TECHNOLOGY AND PATENTS

The Liaison Office promotes several projects developed at the University of Siena and its spin-offs in the area of Life Sciences (vaccines, applied immunology, pharmacology, oncology, development of diagnostic tests, genomics), of Medical Devices (rehabilitation and assistive technologies, haptic systems), Information and Communication Technologies (internet of things, software applications), Agri-food (weighted management of the territory, traceability, nutraceuticals, cosmetics, sustainable development), Cultural Heritage (landscape assessment, museum itineraries), and Territory Assessment (geological surveys, environmental analyses). Further details about the University of Siena patent portfolio are available at: <http://gateway.unisi.it/brevetti>



### PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- intellectual property services
- investment opportunities
- grant search

#### OTHER INFO:

Date of foundation: 1998

#### Contacts:

Via Valdimontone 1, 53100, Siena - Italy

Tel. +39 0577 235373

[liaison@unisi.it](mailto:liaison@unisi.it)

[www.unisi.it/ricerca/imprese-e-trasferimento-tecnologico](http://www.unisi.it/ricerca/imprese-e-trasferimento-tecnologico)

## INSTITUTE OF CLINICAL PHYSIOLOGY OF THE NATIONAL RESEARCH COUNCIL (CNR)

The Siena Unit of the Institute of Clinical Physiology (IFC) of the National Research Council (CNR) carries out and promotes activities in the field of Biomedical and Health Sciences focusing on experimental oncology. Its mission is to sustain and promote the scientific and technological research through collaborations among national and international institutions and industrial partners.

### ACTIVITY

The Siena Unit of the IFC-CNR is focused on different research projects:

- i) Study of molecular mechanisms controlling cell growth and transformation, mediated by mitogen activated protein kinases (MAPK);
- ii) Study of the role of autophagy in cancer and rare genetic diseases;
- iii) Development of new theranostic approaches to cancer by targeted delivery of active molecules and contrast agents to tumor cells and tissues.

The Unit works in strict collaboration with the Core Research Laboratory (CRL) of the Institute for the Study, Prevention and Network of Oncology (ISPRO). The Unit also carries out activity of tutoring and training for undergraduate, postgraduate and doctorate fellows, collaborating with National and Foreign Universities and participating in project of alternating traineeship (work-linked training).

### PUBLICATIONS AND RESEARCH SUPPORT

Research conducted in the Unit is reported in high rated international scientific journals such as Autophagy, JBC,

Oncogene, Journal of Medicinal Chemistry, Cell Reports. Support to research is based on competitive grants from Italian and international institutions (AIRC, Ministero della Salute, Regione Toscana, European Joint Programme on Rare Diseases) and from ad hoc funding from private companies. For a complete list of publications and grants please refer to ORCID ID: [http:// orcid.org/0000-0001-8434-5177](http://orcid.org/0000-0001-8434-5177).

### POTENTIAL (IN 1-3 YEARS)

- Identification of novel molecular targets for improved pharmacological approaches to cancer.
- Development of improved delivery systems to specifically target tumor tissues.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- grant search

### OTHER INFO:

Date of foundation: 2007

Company Size: 8 employees

### Contacts:

Mario Chiariello, MD, PhD

Director of Research IFC-CNR

[mario.chiariello@cnr.it](mailto:mario.chiariello@cnr.it)

<https://www.ifc.cnr.it/index.php/en/le-sedi-secondarie/siena#siena>





## ISPRO (INSTITUTE FOR THE STUDY, PREVENTION AND NETWORK OF ONCOLOGY)

The Institute for the Study, Prevention and Network of Oncology (ISPRO) is a body of the Regional Health Service whose purpose is to promote, measure and study primary, secondary and tertiary actions for cancer prevention and to organize and coordinate, in synergy with other bodies of the regional health service, prevention, diagnosis, treatment and research in the oncology field.

### ACTIVITY

Inside ISPRO, the Core Research Laboratory operates, through different Units located in Florence, Siena and Pisa, with the task of carrying out basic research in cancer and, in particular, in the study of the molecular mechanisms that are at its origins, creating synergies within the regional oncology network. In particular, the “Signal Transduction” Unit is located in Siena and its interests are focused on different research projects:

- i) Study of molecular mechanisms controlling cell growth and transformation, mediated by mitogen activated protein kinases (MAPK);
- ii) Study of the role of autophagy in cancer and rare genetic diseases;
- iii) Development of new theranostic approaches to cancer by targeted delivery of active molecules and contrast agents to tumor cells and tissues.

The “Signal Transduction” Unit works in strict collaboration with the Institute of Clinical Physiology (IFC) of the National Research Council (CNR). The Unit also carries out activity of tutoring and training for undergraduate, postgraduate and doctorate fellows, collaborating with National and Foreign Universities and participating in project of alternating traineeship (work-linked training).

### PUBLICATIONS AND RESEARCH SUPPORT

Research conducted in the Unit is frequently reported in high rated international scientific journals such as Autophagy, JBC, Oncogene, Journal of Medicinal Chemistry, Cell Reports. Support to research is based on competitive grants from Italian and international institutions (AIRC, Ministero della Salute, Regione Toscana, European Joint Programme on Rare Diseases) and from ad hoc funding from private companies. For a complete list of publications and grants please refer to ORCID ID: [http:// orcid.org/0000-0001-8434-5177](http://orcid.org/0000-0001-8434-5177).

### POTENTIAL (IN 1-3 YEARS)

- Identification of novel molecular targets for improved pharmacological approaches to cancer.
- Development of improved delivery systems to specifically target tumor tissues.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- grant search

### OTHER INFO:

Date of foundation: 2007  
Company Size: 8 employees

### Contacts:

Mario Chiariello, MD, PhD  
Principal Investigator, CRL-ISPRO  
[m.chiariello@ispro.toscana.it](mailto:m.chiariello@ispro.toscana.it)  
<http://www.ispo.toscana.it/crl/trasduzione>

## ITALIAN NETWORK FOR TUMOR BIO-IMMUNOTHERAPY (NIBIT) FOUNDATION

The NIBIT Foundation was established on the initiative of “NIBIT” in 2012, aiming to carry out scientific and research activities in the biomedical oncological sector, with particular but not exclusive regard to applied research in the pre-clinical and clinical fields in cancer bio-immunotherapy. The president of the NIBIT Foundation is Prof. Michele Maio, Director of the Center for Immuno-Oncology at the Azienda Ospedaliera Universitaria Senese (AOUS). The Foundation collaborates with the AOUS and has extensive national and international collaborations with major scientific Institutions and with public and private granting Agencies.

### ACTIVITY

Main activities are:

- Design, develop and implement phase I-IV clinical trials
- Coordinate and/or cooperate at multicenter clinical studies
- Promote scientific and educational activities in cancer bio-immunotherapy
- Support basic and/or translational research projects

The NIBIT Foundation also designs and develops national and international scientific educational events in Immuno-Oncology (e.g., Masters, Master-classes, Think Tank, etc.).

### POTENTIAL (IN 1-3 YEARS)

Development and promotion of clinical trials of cancer immunotherapy in solid tumors;  
Development of technological platforms for translational studies in cancer immunology;  
Identification of predictive biomarkers in the context of innovative immunotherapies and biological therapies and

development of new personalised immunotherapeutic approaches;  
Scientific advice and support to develop educational activities and international scientific events focusing on clinical and translational activities developed by the Foundation.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- grant search

### OTHER INFO:

#### Contacts:

NIBIT Foundation Laboratories: c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy  
Legal address: c/o Studio Buzzo Bernardi, via Goffredo Mameli 3/1 - 16122 Genova - Italy  
segreteria@fondazionenibit.org  
www.fondazionenibit.org



## MOLSYS

MolSys is the technology platform of the Department of Biotechnology, Chemistry, and Pharmacy of the University of Siena. MolSys provides expertise for your proteomics, metabolomics, and computational modeling research projects, three complementary fields in a single hub.

### Activity and Services

MolSys is a technology platform that offers molecular characterization at many levels, from small molecules to proteins, from complex biological matrices such as biofluids to cellular and vegetal extracts. The goal is accomplished by combining many complementary technology platforms in a multi-omics approach: the Spectrometry Centre for structural determination, the High Throughput Screening lab for biological activity investigation, and the High Performance Computing lab for Bioinformatics and computational studies.

### TECHNOLOGY AND PATENTS

MolSys is a platform offering many complementary technologies: MALDI TOF/TOF mass spectrometer (proteomics, tissue imaging); timsTOF UHPLC/Mass spectrometer with ion mobility (structural characterization, metabolomics); Nuclear magnetic resonance spectrometer 600Mhz (3D structures of small molecules and proteins, metabolomics); Cell culture facility and high throughput screening of biological activity with Integra Assist plus - liquid handling robots (also in a sterile environment); Cluster computer equipped with state-of-the-art hardware and software, suitable for high demanding applications such as computational chemistry, bioinformatics, Next Genome Sequencing and AI application with native Tensor support.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

### OTHER INFO:

Date of foundation: 2021

Employees: 6

### Contacts:

Headquarter: Dept. of Biotechnology, Chemistry, and Pharmacy, via A. Moro 2, 53100 Siena

Laboratory: TLS - MRC Building, Strada Petriccio e Belriguardo 35, 53100 Siena

Dr. Andrea Bernini, +39 0577235275, andrea.bernini@unisi.it

<http://molsys.dbcf.unisi.it/>



## QUANTITATIVE NEUROIMAGING LAB (QNL)

The Quantitative Neuroimaging Laboratory (QNL) of the University of Siena, founded and directed by Prof. De Stefano during the late 1990', conducts clinical research activity in the field of neurodegenerative pathologies, with specific research projects aimed at the development and application of new neuroimaging techniques.

Over the years, the Laboratory has leveraged on the collaboration of other centres that deal with new aspects of the biomedical research such as the Functional Magnetic Resonance Imaging of the Brain (FMRIB) of the Oxford University and the Brain Imaging Centre of the Montreal Neurological Institute - McGill University.

### ACTIVITY

The research activity aims at improving the understanding of chronic neurological diseases through an improved ability in important biomarkers quantification of global and focal brain damage. In particular, the laboratory activity has been focused on the development of new tools for the quantification of structural damage and the application of the more advanced techniques for the assessment of functional and metabolic damage.

Examples of the fruitful collaborations engaged by QNL with Oxford University is the creation and validation of SIENA (Structural Imaging Evaluation of Normalized Atrophy), a worldwide spread software for the quantification of percentage brain volume changes over time.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- grant search

### OTHER INFO:

Company Size: 15 employees

### Contacts:

Viale Bracci 2, 53100, Siena - Italy  
efimenko@unisi.it



## UMBERTO DI MARIO FOUNDATION (FDM) ONLUS

The Umberto Di Mario Research Foundation, based in Rome and Siena, works in the translational medicine arena, and in particular in the treatment of diabetes, including rare forms of childhood diabetes. The Foundation, assisted by an International Scientific Committee, promotes and supports excellent research projects and other initiatives (fellowships, workshops, meetings etc.).

### ACTIVITY

The specific interests of the Foundation include diabetes mellitus, chronic inflammatory diseases and immune-mediated diseases, in addition to tumours of the nervous system. The Siena-based group is composed of 5 researchers under the scientific coordination of Prof. Francesco Dotta, Full Professor of Endocrinology at the University of Siena.

The Foundation participates in national and international research networks supported by institutions including the European Commission, the Juvenile Diabetes Research Foundation, the Italian Ministry for Research and the Italian Ministry of Health.

### TECHNOLOGY AND PATENTS

Umberto di Mario Research Foundation researchers developed standardized protocols for high-throughput identification of novel human blood circulating biomarkers molecules (small non-coding RNAs), multiplexed imaging fluorescence analysis and microdissection of human tissues, and molecular biology assays to evaluate the role of microRNAs in diabetes mellitus, both as disease biomarkers and as determinants of diabetes-associated pathogenic mechanisms.

Umberto di Mario Researchers in collaboration with University of Siena and University of Leuven patented a set of plasma-circulating microRNAs whose expression is



able to predict the success of an autoantigen specific-based therapeutic approach in autoimmune diabetes.

### POTENTIAL (IN 1-3 YEARS)

Discovery of novel diabetes biomarkers; identification of innovative therapeutic targets in diabetes. fosters new collaborations in diabetes and translational/precision medicine.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- grant search

#### OTHER INFO:

Date of foundation: 2000

#### Contacts:

Largo Ettore Marchiafava 1, 00161, Roma - Italy  
c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy  
Tel. +39 0577 231283  
info@fondazioneDIMARIO.org  
www.fondazioneDIMARIO.org



## AFFILIATED COMPANIES

## BBA SRL - BESPOKE BIOTECH ADVISORY

Bespoke Biotech Advisory, <bba>, is a strategy consulting company targeting the Life Sciences.

<bba> provides entrepreneurs or decision makers with expert guidance in key decision areas, covering the value chain from the go-to-market to the international development

Its business model combines a core of experienced partners with equally experienced business partners, specialising in every single step of the product as well as company's life cycle.

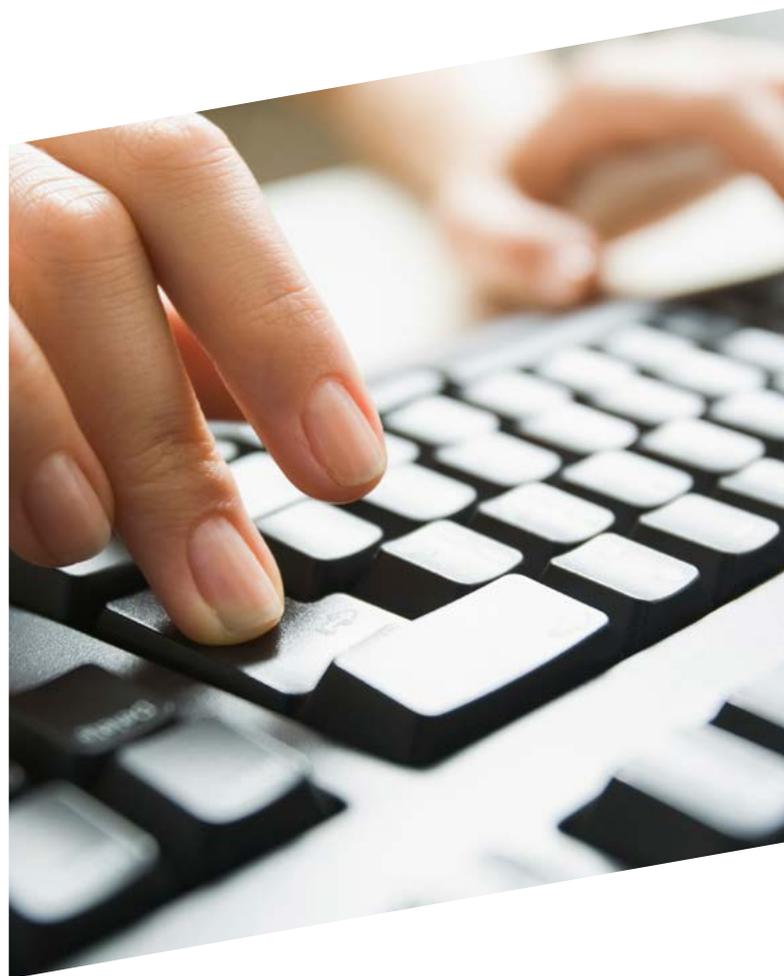
This ensures a flexible response and the right seniority to the customer's specific needs

### ACTIVITY

The <bba> method "DESIGN-DELIVER" is perfectly suited to SMEs, companies undergoing renewal, expanding enterprises, small product-making companies, start-ups and all investors needing industry-specific expertise to make targeted, informed investments.

BBA helps customers through transformation, transition or growth towards Digital Biotech and Personalised Medicine by helping them develop strategies with business models that use digital technology, all supported by Design Thinking and Service Design.

To this end, a Trust of Companies specializing in key digital topics concerning Big Data has been established. Operating under the brand name DVA (Data Value Alliance), it provides skills that range from scientific data management to system architecture, from the application of AI to blockchain technology, from Augmented Reality to Virtual Reality. The <bba> main areas of expertise are: Biotech products and ancillary Services, Digital Health, Diagnostics, Vaccines and Infective Diseases, Precision Medicine, Nutraceuticals and Cosmeceuticals; Strategy (definition and execution, including the most appropriate digital strategy), Marketing and Sales, M&A, Fund Raising



### KEY PARTNERING OPPORTUNITIES

- strategic partnership
- investment opportunity

#### OTHER INFO:

Date of foundation: 2017

#### Contacts:

Legal Address: Via Fiorentina 1, 53100 Siena - Italy

Admin Address: Via S. Tommaso 118, 56029 Santa Croce sull'Arno (PI) - Italy

info@bespokebiotech.com

www.bespokebiotech.com

## BIOMVIS S.R.L.

BiOMViS Srl is a Biotech Company founded in 2018 to foster prophylactic and immunotherapeutic interventions in infectious diseases and cancer.

### ACTIVITY

The Company has two main focuses:

#### **Development of innovative OMV-based vaccines against infectious diseases and cancer**

OMVs are closed spheroid particles released by Gram-negative bacteria which are particularly attractive as vaccine platform. BiOMViS' technology of OMV engineering and preparation is particularly attractive for both anti-microbial vaccines and personalized cancer vaccines.

#### **High-tech research services in Vaccinology and Immunology**

BiOMViS Srl offers external partners highly qualified services in several research areas, including molecular and cell biology, microbial fermentation and cell culture, protein purification, immunological assays (ELISA, T cell analyses), FACS, confocal microscopy and models of infectious diseases and cancer.

### TECHNOLOGY AND PATENTS

BiOMViS has a solid know-how on the OMV vaccine platform and in particular on the synthetic biology strategies to be used to decorate OMVs with foreign antigens. Several innovating engineering approaches have been developed to deliver and compartmentalize heterologous antigens/epitope in OMVs.

BiOMViS has developed and is the owner of a unique *E. coli* strains that release high quantities of OMVs deprived of «unnecessary» endogenous components that might either “dilute” or “impair” immune responses against target antigens.

A large body of data have been generated demonstrating the remarkable immunogenicity properties of the engineered OMVs.

BiOMViS has set-up methods for OMVs production, purification and characterization.

### POTENTIAL (IN 1-3 YEARS)

BiOMViS is ready for Phase/II clinical trials with:

1. Viral vaccine: SARS-CoV2 OMV based vaccine
2. Two different OMV based bacterial vaccines against *Staphylococcus aureus* and *Group A Streptococcus*
3. A personalized cancer vaccine

A number of Research Contracts have been already finalized and others are foreseen for the next two years.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity

#### OTHER INFO:

Date of foundation: 2018

Company Size: 5 employees

#### Contacts:

Address: Via Fiorentina, 1 53100, Siena Italy

Phone: +39 0577 231278

e-mail: [info@biomvis.com](mailto:info@biomvis.com)



## BIORIDIS S.R.L.

BIORIDIS is a biotech, founded in Bologna in 2016. BIORIDIS' objectives is development, production and marketing of innovative kits for nucleic acid (DNA, RNA) detection for R&D and diagnostics application. BIORIDIS has managed to break the current technological barrier and develop, in the last 4 years of high-risk research, a revolutionary assay for nucleic acids analysis: the LIVELMIA method.

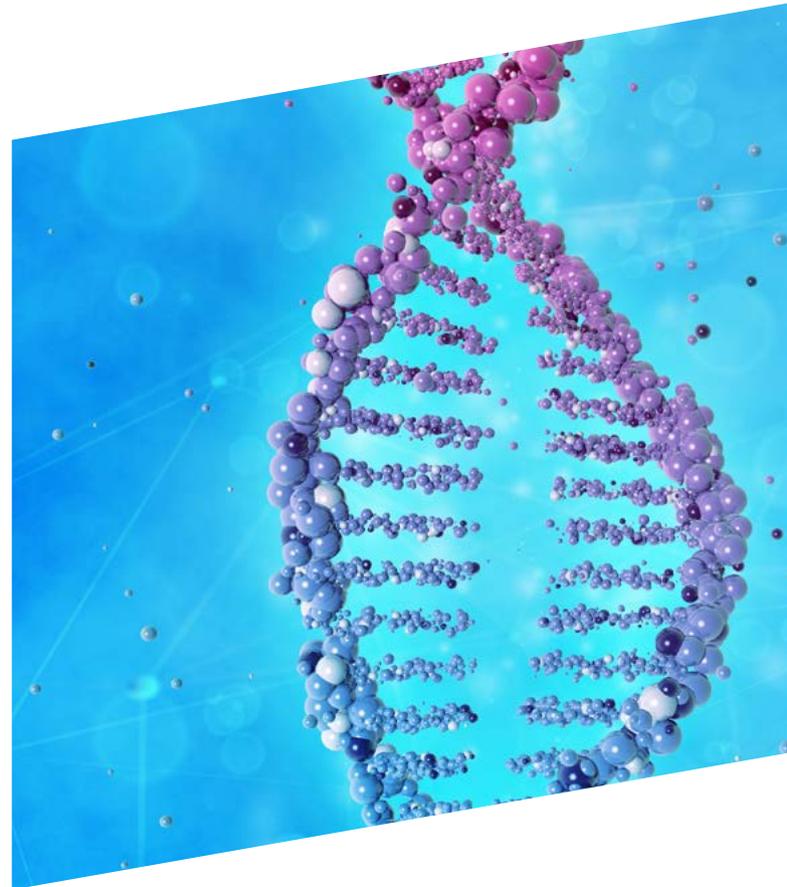
### ACTIVITY

From LIVELMIA method we have developed the Power Marker kits, quick and easy assay for nucleic acids detection. Power Marker kits are designed to work directly on the sample, no extraction/purification steps are required. EV Power Marker is a kit for in vitro detection and quantification of RNA and DNA. Mir Power Marker is a kit optimized for in vitro detection and quantification of miRNA. Bioridis developed a software for rapid design of kits for target NA with advantage of LIVELMIA. We offer a personalized service on the NA target requested by the customer.

### TECHNOLOGY AND PATENTS

The novelty of the LIVELMIA method is a new target recognition system based on a specific probes design, which exhibits ideal characteristics to hybridize target NA more rapidly, with higher affinity and specificity, improving the recognition of NAs. LIVELMIA method has been successfully tested on various types of samples (cell lysate, serum, plasma and saliva). Total time for analysis 1h and hand-on <10min.

The LIVELMIA, innovative technology for nucleic acid analysis is owned by BIORIDIS, it is Italy patent granted, PCT positive report, EPO, USA, China and South Korea pending.



### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: 2016  
Employees: 3

#### Contacts:

Headquarter: Via Alfonso Rubbiani 5, 40124 Bologna - Italy  
andreatortori@bioridis.com  
www.bioridis.com



## EGOHEALTH

egoHEALTH is a start-up focused on the development, production, engineering and scientific marketing of innovative products and services with a high level of technological content, particularly in the field of UV and near-UV light disinfection. It operates in the bioengineering and biomedical informatics sectors, primarily with proprietary and patented technology.

egoHEALTH also performs activities for the promotion and conduction of research and development programs in the field of education and Public Health.

### ACTIVITY

egoHEALTH figures have technical and scientific expertise that allow to assist Companies from their idea, up to the pre-industrial production of devices in the field of the disinfection. The multi-dimensional approach characterizes the operandi strategy because of competencies in engineering and re-engineering, fluid-dynamics studies, mechatronics, prototyping, photometric measurements (also with innovative sources of light) and microbiological tests. All the expertise is matched to assist and produce scientific documents experimenting in lab and real environments.

The company has developed several products in the field of disinfection. In particular, the Stet Clean family, multi-awarded and internationally recognized, is an innovative UV-C LED device that prevents cross contamination between patients disinfecting the stethoscope membrane.

### TECHNOLOGY AND PATENTS

Device for the hygienisation of medical instruments (IT0001416112, US9114184; India pending); Device for the hygienisation of medical instruments, Device for the sterilisation of stethoscopes (IT0001424711, EP3164161, CA2954129, US 10,226,542, JP6553100, AU2015283749, Corea 10-2017-7000777); Device for the hygienisation

of contact lenses (IT102015000049940 ); Dispositivo di disinfezione (IT102020000013072); Lampada igienizzante (IT102021000001538 pending).

### POTENTIAL (IN 1-3 YEARS)

Milestones: finding a partner for developing projects in the field of personal Hygiene; Evolution of STET CLEAN family; projects focused on air, surfaces and liquids disinfection.

### KEY PARTNERING OPPORTUNITIES

- strategic partnership
- grant search

#### OTHER INFO:

Date of foundation: 2013  
Company Size: 4 employees

#### Contacts:

c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy  
Mob +39 339 6699422 Tel +39 0577 231211 - Fax +39 0577 43444  
info@egohealth.it  
www.egohealth.it - www.stetclean.com

## EUROPEAN NETWORK OF IMMUNOLOGY INSTITUTES (ENII)

The European Network of Immunology Institutes (ENII) was founded in 1985 by 15 European Institutes devoted to research in molecular and cellular immunology.

The mission was to promote the quality of education and research in the field of immunology through scientific exchanges between laboratories and Research Centres belonging to European countries.

Since March 2018, ENII has the administrative headquarters at the TLS bioincubator.

The commitment was to create a European Network of Excellence and organize annual activities on the small island of Les Embiez, in the south of France, where initially was based. In 2006 the ENII activities were relocated to another island, Sardinia, in Italy. The Faculty Members of ENII Summer School are prestigious scientists and immunologists, including 3 Nobel Prizes.

### ACTIVITY

Presently, the ENII Institutes are 31 European Research Departments located in Belgium, Finland, France, Germany, Ireland, Israel, Italy, Norway, Portugal, Spain, Sweden, Switzerland, The Netherlands, United Kingdom.

ENII has organized 21 annual workshops (1986-2006) and 3 EMBO Conferences (2007-2009-2011) on Molecular and Cellular Mechanisms of Immune Regulation.

Since 2006, under the direction of Prof.ssa Paola Ricciardi-Castagnoli and of the general manager Erica Lomnes, ENII organizes every year the Summer School dedicated to 100 European students aiming at promoting the discussion on cutting-edge topics in the quickly developing field of immunology with specific interest on the mechanisms that regulate immunity.

For over 30 years, ENII aims to promote the quality

of European education and research in immunology by fostering scientific information exchanges through scientific educational activities and by creating an European network (ENII Alumni) through international mobility of scientists and researchers.

### OTHER INFO:

Date of foundation: 1985

### Contacts:

c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy

Tel. +39 333 8715717

school@enii.org

www.enii.org



## EXOSOMICS S.P.A.

Operating in Siena since 2012, Exosomics (EXS) has developed solutions and IP for EVs characterization and bio-processing, liquid biopsy and cancer Dx. In the decade of presence in Siena, Exosomics has been able to grow an international reputation in the EV field and to attract important multinational Pharma and Biotech companies, such as Lonza and Agilent, to invest in the company and to land on Siena's territory. In November 2022 Exosomics sold to Lonza (Capsugel Italy) the branch of business relative to services to industry and bio-processing, including research facilities and employees, consolidating Lonza's business in the EV field and its presence in Tuscany. Exosomics, where Lonza and Agilent remain as the main industrial shareholders, is now an holding company, owning Hansabiomed Life Science, based in Tallinn, and Rivela Diagnostics, newly established in UK. The former is the oldest and larger EV focused company in Europe, developing and commercializing technologies and applications in the life sciences arena, the latter is focused on developing the patrimony of Exosomics in the field of cancer diagnostics.

### ACTIVITY

Exosomics will continue to expand its portfolio in the EV field through M&A or other spin-offs in several additional EV related fields such as cosmetics, nutraceuticals, agronomy, veterinary and, of course, human diagnostics.

### KEY PARTNERING OPPORTUNITIES

Key opportunities with EXS' Portfolio companies include:

- scientific collaboration
- strategic partnership
- investment opportunity
- grant applications

### OTHER INFO:

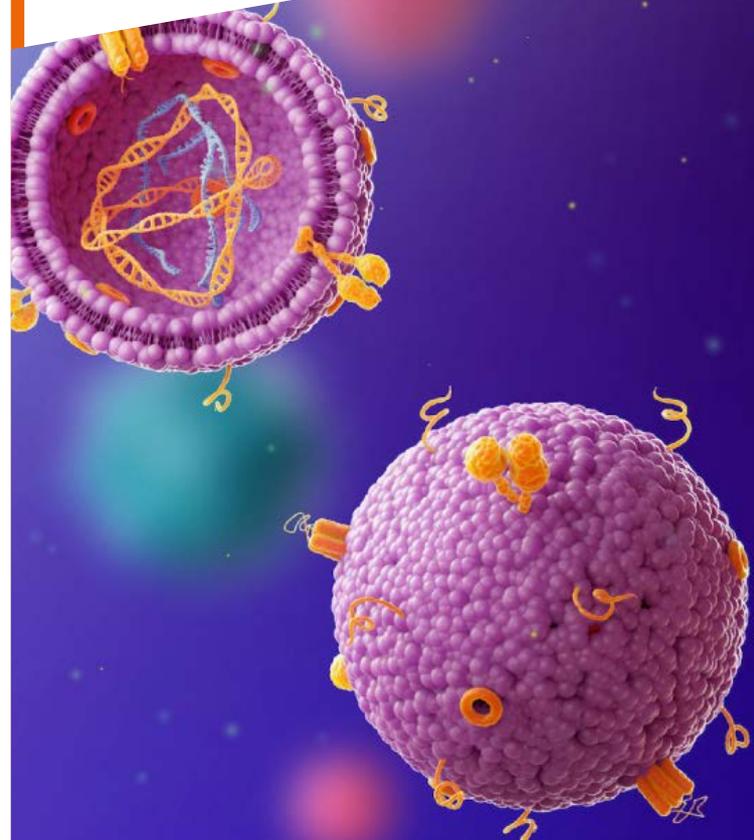
Date of incorporation: 2011  
 Holding Company controlling:  
 • HansaBiomed Life Sciences  
 • Rivela Diagnostics

### Contacts:

Legal Address: Strada del Petriccio e Belriguardo 35, 53100 Siena, Italy  
[www.exosomics.eu](http://www.exosomics.eu)

Key contact: Antonio Chiesi, MD  
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 Tel. +44 7900027496



## GENOMEUP S.R.L.

GenomeUp is an Italian Innovative SME (small and medium-sized enterprise) that develops, produces and delivers bioinformatics and digital solutions high technological value added with the aim of supporting diagnostics and scientific research in the field of human genetics.

### ACTIVITY

GenomeUp makes the potential of digital solutions accessible to Genetics Laboratories in order to simplify the patients and samples management process, reduce human errors and support the interpretation and translation in easy-to-understand of genetic data from Next Generation Sequencing. We integrate bioinformatics algorithms and AI for the development of precision medicine in the diagnosis and therapy of genetic diseases and support the clinical decision for an accurate treatment of patients. Genomics and omic sciences are responding to the most difficult problems of human health conditions and are giving new hopes to people around the world. GenomeUp offer an ecosystem of digital services to support scientific, diagnostic, clinical and pharmaceutical research, for doctors and patients towards a path of awareness, management, monitoring and healing.

### TECHNOLOGY AND PATENTS

GenomeUp developed JuliaOmix™, a modular solution for all stakeholders involved in the diagnosis journey: physicians, genetics biologists and laboratory technicians. JuliaOmix™ works with three independent smart tools, the JOMED, JOTRK and JOLAB. It collects all patients' health data (symptoms, drugs treatment and phenotypes), offers an innovative system of samples tracking and integrates bioinformatics pipelines for omics data analysis (whole genome, exome and microbiome), providing a digital in-cloud interactive clinical interpretation and report of genomic variants. JuliaOmix™ streamlines the daily disease management workflow to offer a novel approach to patient diagnosis. The SaMD platform is licensed

on an annual renewable basis to hospitals and genetic laboratories companies, providers, research and government organizations. It is privacy compliant (GDPR), available in Italian and English, and can be easily integrated with other offerings and white-labeled.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: 2017

Company Size: 5-20 employees

#### Contacts:

Headquarter viale Pasteur 6, Roma (00144)

info@genomeup.com

www.juliaomix.com



## HEALTH RSI

Health RSI is a start-up company whose aim is to design, develop, promote and sell innovative technologies and/or services with high technological value, more precisely: research and experimental development in the field of medical engineering and biotechnology.

### ACTIVITY

The Main Focus of the company is to define the first scientific validation system to “objectively” measure chronic pain on a neurophysiological and customized basis. This is a globally recognized unmet medical need for the sake of appropriate therapy both in the pain therapy field and in the clinical field of painful diseases.

Our research and development is based on engineering to produce a device detecting pain on a neurophysiological basis. It is based on combined stimuli given by a transcutaneous stimulation-based technology.

### TECHNOLOGY AND PATENTS

The device uses “graph radar”, a patented algorithm which integrates and involves four functional elements to detect the reaction of the somato-sensory system: electro-stimulation; mechanic/vibration; gas/air flow; thermal (hot/cold)

The perception of these stimuli will allow detecting a specific pain threshold for each patient and assessing its modification over time in relation to the possible therapy -therapeutic appropriateness applied.

Dolorimeter Plus is the innovative technological proposal by Health RSI to measure the pain threshold:

- objectively (operator-independent)
- comparatively (Big Data / advanced statistics)
- in a classifiable way (multifunctional)

### POTENTIAL (IN 1 YEAR)

Over the next six months, Health RSI is ready for a clinical investigation study to detect the pain threshold

value in the Italian population based on the physiological neurostimulation underlying pain and then to measure / quantify pain for each person through a unique digital value being replicable and to be monitored over time. Once this objective will be reached, the final prototype engineering will rapidly start for it to be placed on the market.

### KEY PARTNERING OPPORTUNITIES

- strategic cooperation
- investment opportunities
- allow research

#### OTHER INFO:

Date of foundation: 2020 Company

Company size: 3 employees

#### Contacts:

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e-mail: direzione@healthrsi.it

<http://harsi.it/>



## INNBIOTEC PHARMA S.R.L.

Innbiotec Pharma researches and produces innovative biomedical solutions for people's well-being. Spin-off of the Department of Biomedical Sciences of the University of Florence, the company exploits technologies developed in over 20 years of research. The two main biotechnologies used by the company are bioavailable glutathione and oleuropein, molecules with strong antioxidant and anti-inflammatory properties, which form the basis of the formulations used in the company's research and products.

### ACTIVITY

After years of development with its own internal team and in collaboration with Italian and international universities, Innbiotec is now structured in two divisions: R&D and Commercial. R&D studies high-impact pharma applications of the company's molecules, and takes them through testing for approval and distribution. Fields under study include: neurodegeneration (Alzheimer), liver diseases (NASH) and advanced respiratory diseases (ARDS). The retail firm sells over-the-counter nutraceutical food supplements for health, metabolism and sports, as well as dermatological/skincare products.

### TECHNOLOGY AND PATENTS

The company holds over 18 patents, including:

1. New s-acyl glutathione derivatives, synthesis and use in treatment of cellular oxidative stress related pathologies.
2. Pharmaceutical composition containing glutathione thioesters to increase longevity.
3. Method and kit for rapid determination of total antioxidant capacity in whole blood and other biological samples.
4. Use of Oleuropein and its derivatives for type 2 diabetes treatment and diseases associated with protein aggregation.
5. Pharmaceutical composition for the prevention and treatment of age-related memory and cognitive deficits.

### KEY PARTNERING OPPORTUNITIES

- Scientific collaboration
- Strategic partnership
- Investment opportunity
- Grant search

#### OTHER INFO:

Date of foundation: 2020

Employees: 10 including founders

#### Contacts:

Headquarter: via Martiri di Civitella, 5 - 52100, Arezzo, Italy

Phone: +39 0575 348113

Info@innbiotecpharma.com

www.innbiotecpharma.com



## INNOVATION ACTA

Innovation Acta is focused on support in planning and execution of EU funding research programs. We support private and public organizations as well as individual researchers and SMEs to participate in multi-national collaboration projects or other grant opportunities. The first step of our mission is to assist our Clients in the preparation of project applications: we start with the identification of an appropriate financing strategy through the establishment of a successful consortia, then we organize the writing of the proposal and finally we take care of the formal submission of the project. In the second step our aim is to contribute to the management, to assist the consortium for all administrative aspects, for the communication and the dissemination of the project.

### ACTIVITY

Our Services are:

**FUNDING STRATEGIES** - searching for the best financing strategy suitable for your project. Helps you find the right partner for Consortium Construction also considering own database of High-Level contacts in scientific field.

**PROJECT MANAGEMENT** - support in the organization and writing of the proposal and care of the formal submission of the proposal. Once granted, our aim is to support the management, the administrative issues, the progress reports preparation and submission. Legal assistance (grant agreements and consortium agreements preparation, Amendment Ethical Issues).

**COMMUNICATION & DISSEMINATION** - support the Coordinator in the Communication and Dissemination activities of the projects. Thanks to a competent and qualified staff we support the Consortium during the life-cycle of the project to achieve the following objectives: to communicate and disseminate the project results to a large audience and potential users (clinical/scientific community, general public and patients); to facilitate and promote

interaction with stakeholders (like patients and their families, clinicians and regulatory agencies etc.). Innovation Acta also creates the visual identity of the projects including web design (graphics material and contents), implements project websites, as an information tool with a public facing section and a private section, and creates and manages the Social Accounts, using news and contents provided by all the consortium's partners.

### MEETING & EVENTS ORGANIZATION -

organization of meetings, scientific events and congresses, from strategic planning and on through coordination, operations, on-site management, evaluation and subsequent follow-up.

### KEY PARTNERING OPPORTUNITIES

- strategic partnership
- grant search

#### OTHER INFO:

Date of foundation: 14/01/2015

Company Size: 6 employees

#### Contacts:

Headquarter: Roma Via D.A. Azuni, 9 and Operative Office in Siena Via delle Province 1

Phone: +39 0577 1652729

Mobile: +39 366 3746125



## ITALIAN SCIENTIFIC SOCIETY FOR MEDICAL HEMP (SICAM)

The Italian Scientific Society for Medical Hemp (SICaM) was born in 2017, to become a reference point in the ever-changing national landscape regarding therapeutic cannabis. SICaM is responsible for supporting the spread of cannabinoid-based therapies by promoting a network of health, chemical and agronomic professionals. The company also deals with scientific research regarding the preparation of cannabis-based products and extracts and the agronomic techniques to be applied to the cultivation itself.

### ACTIVITY

SICaM provides training and consulting services for pharmacists, doctors and agronomists working in the field of cannabis for therapeutic use. SICaM is also involved in research and development for growers and producers of cannabis-based extracts and preparations, providing advice and analysis services.

### POTENTIAL (IN 1-3 YEARS)

Today SICaM has more than 50 associated professionals, including pharmacies and doctors. In the next 3 years the company expects to reach an exponentially higher number and to provide more and more integrated services for training and consulting (webinars, etc.). Furthermore, SICaM aims to formulate standards for both the first and second processing of raw cannabis materials.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search



### OTHER INFO:

Date of foundation: 2017

Company Size: 4 founding members and operational council; 10 pharmacist and medical partners

### Contacts:

via Fabio Massimo 25, 58100, Grosseto (GR) - Italy  
 c/o TLS Incubator - Via Fiorentina 1, 53100, Siena - Italy  
 Tel. +39 0564 490841 / +39 347 3062741  
[sicam.segreteria@gmail.com](mailto:sicam.segreteria@gmail.com)  
[www.sicamweb.it](http://www.sicamweb.it)

## KW APPARECCHI SCIENTIFICI

KW Apparecchi Scientifici srl (Scientific Instruments) is operating since 1953 in Siena, where has started the production of -80°C ULT freezers in the early 1960s, needed for the Sabin polyhemolytic vaccine. Today KW is the first supplier of cold chain devices for Italian National Healthcare System and exports its devices in over 80 countries worldwide. KW collaborates with universities, high schools and research centers for product optimization and for the development of innovative projects.

### ACTIVITY

The continuous R&D activities let it to operate in the engineering and manufacturing of a wide range of products with operating temperatures between -125°C and +300°C, equipped with smart connection for integrated solutions, according to IoT/Industry 4.0. The numerous Italian and international certifications, including medical devices, are the result of the commitment to satisfy even the most demanding customers.

The devices are designed to satisfy the most demanding requirements of Research Laboratories, Pharmaceutical Companies, Hospitals, Analysis Laboratories, Bio Banks and more.

The production is focused on a wide range temperature of plug-in devices, installations and special projects designed as unique solution for special applications. With concern to the medical sector, KW is one of the largest Italian manufacturers of medical devices (CE Class IIa and Class I) for blood banks and transfusion centers. All the products are GMP compliant.

### TECHNOLOGY AND PATENTS

The most important product lines are:  
**ULT Freezer -86°C**, cascade system with pure gases;

recognized among the highest quality / low energy consumption ratio in the market.

**Biological Bank® (registered trademark by KW)**, with two independent refrigerating systems operating alternately to ensure the -86°C preservation in case one of the two systems fails.

**Medical devices for the management of blood and its derivatives:** shock plasma freezers, plasma storage freezers (-80°C/-20°C), plasma thawers, platelets incubators and agitators. The thawer is covered by European patent (Registration N° EP2510965) for plasma and staminal cells thawing.

The traceability of all the process is possible by an innovative HMI and a complete connectivity with the BAS. High stability and uniformity of the temperature is guaranteed thanks to the heavy technology research.

### POTENTIAL

**The Biobank sector is the new goal for which KW wants to become a landmark.**

KW is growing and is expanding the production site to increase the production of 50% to satisfy the global needs and to let the production of special products for new different applications.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity

#### OTHER INFO:

##### Contacts:

Via della Resistenza 117-119, 53035 Monteriggioni (Siena)

info@kwkw.it

www.kwkw.it

## LABORATORI ALIVEDA S.R.L.

Laboratori Aliveda, was established in 2013 in the countryside of Pisa, as a small manufacturer family company with the passion towards natural health products. The company develops, produces and commercializes food supplements for psychophysical well-being and quality of life improvement. Over the years, the company has grown a lot, up to a significant breakthrough in 2018 with the inauguration of a new advanced production facility developed to provide customers with higher quality standards and advanced production technologies. The manufacturing site is HACCP certified, and the management system is ISO 9001/2015 certified.

### ACTIVITY

The strength of the company is certainly the ability to manage the entire production process of natural food supplements: research and development, formulation, production, quality control and marketing; However, R&D remains the corporate asset that distinguishes it and represents its growth engine. As a matter of fact, Aliveda stably collaborate with the University of Pisa, supporting young researchers, and developing projects for in vitro, in vivo and multicentre clinical trials, especially in neurological field.

### TECHNOLOGY AND PATENTS

Thanks to ongoing research, Aliveda developed two patents obtained in Italy: the first, a patent concerning a production technology that greatly improves the absorption, protection and bioavailability of important active ingredients and the other, a formulation patent, to increase the expression levels of sirtuin I, which has allowed highly innovative products to be placed on the market.



### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership

#### OTHER INFO:

Date of foundation: 22.04.2013  
Employees: 30

#### Contacts:

Laboratori Aliveda S.r.l.  
Headquarter: Viale K. Wojtyła 19, 56042 Crespina-Lorenzana (PI)  
Tel. 050662674 - info@aliveda.com  
www.aliveda.com



## LIQUIDWEB S.R.L.

Liquidweb is an ICT company focused on Artificial Intelligence (AI) applied to human-computer interaction (HCI). The company believes that HI-TECH innovation should improve the quality of people's life. Starting from this belief, Liquidweb has developed BRAINCONTROL (class I medical software - CE certification), an augmentative and alternative communication software based on AI to support interaction through bio-feedback enabling people with severe disabilities to interact with the outside world. The uniqueness and potential of the software allowed the company to win the Horizon2020 call for tenders, issued by the European Union, which provides non-repayable funding.

### ACTIVITY

BrainControl provides three different solutions aimed at people suffering from pathologies such as Amyotrophic Lateral Sclerosis (ALS), Multiple Sclerosis, quadriplegia and various kinds of muscular dystrophies. Our solutions help people to overcome severe physical and communicative disabilities.

BrainControl BCI AAC. Profiting off Brain-Computer Interface and thanks to an EEG headset, the device allows people with severe disabilities (also in LIS/C-LIS) to interact with the outside world using their thoughts.

BrainControl Sensory AAC. Thanks to a grid of sensors, the device exploits the patient's residual movements (eye, hand, finger, cheekbone movements, etc.) to interact for communication and entertainment.

BrainControl Avatar. These interaction methods allow to drive from remote a robotic avatar to enable virtual visits to exhibitions, museums and other spaces.

### TECHNOLOGY AND PATENTS

Patent 1: IT102015000052009 (IT) 15/09/2016 - 23/03/2017

Patent 2: Application EURO-PCT (EURO-PCT) 13/09/2016 - Pending

Patent 3: Application JP (JP) 14/03/2018 - Pending

Patent 4: Application USA (USA) 16/03/2018 - Pending

Patent 5: Application Cina (Cina) 15/03/2018 - Pending  
Patent 6: Application Canada (Canada) 13/04/2018 - Pending

### POTENTIAL

Our next goal concerns the improvement and promotion of the solutions we offer to become a point of reference in EU and USA markets. In the meantime, new products and services, covering other fields, are under development. These include the planning and production of devices for cognitive and consciousness assessment. To reach these goals the company has been planning to significantly increase our research team and implement new projects with professionals, hospitals and universities.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: 2010  
Company Size: 8 employees

#### Contacts:

Via Cesare Maccari 1, 53100, Siena - Italy  
Tel. +39 0577 1916187  
info@braincontrol.eu  
www.braincontrol.eu

## PHARMASI S.R.L.

PharmaSi, a company specialized in the field of food supplements, was born from the passion and experience of a group of professionals from leading pharmaceutical companies.

### ACTIVITY

The main activity is focused on the creation and sale of nutraceutical products. List: **TIGER** (Adjuvant in the treatment of hypercholesterolemia and Hyperomocystinemia Prevention of cardiovascular risk); **PROSTASI** (Adjuvant in the treatment of benign prostatic hypertrophy); **LITOCALC** (Natural solution in the treatment of kidney stones); **MAGNESIO** (States of asthenia Fatigue, Cramps, Contractures, Tone of Mood, Prelast Syndrome); **MELURESIO** (Natural solution to recurrent urinary infections); **VENERA** (It intervenes on the venous circulation, on the functionality of the microcirculation and on the drainage of body fluids); **KATARSI** (Adjuvant mucoregulation with fluidifying effect); **POLARIS** (Useful to counteract oxidative stress during pregnancy); **RELAXSI** (Adjuvant for sleep disorders such as difficulty falling asleep, jet lag; Anxious syndrome); **DYNAMO** (Useful in states of fatigue and convalescence, increased energy requirements, sports performance); **OMEGASI** (Adjuvant in the treatment of hypertriglyceridemia).

### POTENTIAL (IN 1-3 YEARS)

150% growth.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership

### OTHER INFO:

Date of foundation: 2014

Company Size: 6 employees

### Contacts:

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- Italy - Tel. +39 329 2434734

info@pharmasi.org

www.pharmasi.org



## SATUS S.R.L.

Satus is an operating company of Monte dei Paschi di Siena Foundation (FMPS), active in the field, among others, of scientific and technological research.

### ACTIVITY

Satus acts as a partner, acquiring shares of start-ups that conduct research in the field of high innovation, including the biomedical, pharmaceutical and biotechnological industries.

### POTENTIAL (IN 1-3 YEARS)

In the next three years, Satus is expected to expand its field of action, becoming a sort of revolving fund for companies with a high potential for innovation, established in the reference territory of the Foundation.

### KEY PARTNERING OPPORTUNITIES

- strategic partnership
- investment opportunity
- grant search

#### OTHER INFO:

Date of foundation: 2006

#### Contacts:

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 marco.forte@fondazionemps.it  
 (Mr. Forte is the Sole Administrator of the company)



# TECNOSCIENTIA

Tecnoscienza proposes itself as a single interlocutor to accompany companies in their digital transformation and/or adjustment processes. It was born from the desire to concretely put the technical and business experience gained in 30 years of my personal activity around the world at the service of Italian companies (and beyond).

Our core business focuses on the analysis, optimization and automation of business processes, making the best use of the tools already existing in the company and integrating them with custom products or applications based on specific needs and the context in which the customer operates.

Tecnoscienza also makes use of experts from individual industrial sectors, functional and process analysts, and high-level technicians to cover, in the context of digital transformation, the areas in which the customer needs more support.

## ACTIVITY

Tecnoscienza is an innovative startup that deals with consultancy for the design and development of IT solutions in order to optimize production processes, making them efficient and resilient over time, keeping in mind the ambitions of its customers and their objectives.

We have four main concepts that we like to use to identify our activity:

- 1 . Straight to the point: the team is made up of competent and professionally trained people. This allows easy identification of the most suitable solution for our customers.
- 2 . The word Process is linked to the experience of automation, analysis and finally measurement to find the most suitable solution for customer's needs.
3. We know the Cloud like the back of our hands: professional's company move freely in every environment (Docker, Vagrant, Azure, Google, Amazon WS), finding the most suitable expertise.
4. Web Application: the team has been developing and integrating web applications with different systems for over 30 years, operating in: Finance, Logistics, Pharma, GDO, Retail, Food).

## TECHNOLOGY AND PATENTS

In recent years we have developed many applications and expertise, ranging from basic technologies (Data Center, DevOps) passing through the main platforms (Open Source, Closed Source, Infrastructure) up to management consulting with Business process management, Business Reorganization and Digital Transformation.

The Tecnoscienza team develops web applications ranging in different sectors.

The main highlights include: Semantic Knowledge Base for IGT-lottomatica, the orchestration of all services via DevOps Azure for Interroll; Inclusion Remediation for the American University of Lugano and Supply Chain Digitization services for various clients in the fields of logistics, pharmaceuticals and large-scale distribution. Thanks to important collaborations, projects such as IGT-LOTTOMATICA and DBInformation were born. Furthermore, we have partnerships with different realities such as the Grana Padano Consortium and two other important international realities.

## KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

### OTHER INFO:

Date of foundation: 2019  
Employees: Fabrizio Lodi

### Contacts:

Headquarter: via Sebastiano Veniero, 2, 20148 Milano MI,  
Fabrizio Lodi Tel: +(39) 335.345.390

[www.tecnoscienza.com](http://www.tecnoscienza.com)





## UBT SRL SB (Umbria Bioengineering Technologies)

UBT SRL (Umbria Bioengineering Technologies), born as academic Spin Off of the Department of Physics and Geology of the University of Perugia, Italy, is a biomedical company which develops and commercialises a portfolio of innovative medical imaging devices based on cutting-edge microwave technology instead of dangerous ionizing radiation (X-Rays).

### ACTIVITY

UBT has so far developed two different products, which present unique selling propositions (USPs):  
A) MammoWave; a novel X-rays free mammogram for breast cancer screening. MammoWave recently got CE Mark approval and ISO 13-485.

### USPs are

- USP1: The absence of harmful radiations enables more frequent screenings to a wider population, including young women.  
USP2: the breast is not compressed as it is in mammography.  
USP3: excellent engineering solution / price-competitive
- B) BrainWave. a novel device for Brain stroke detection and classification. The device is a handy and mobile apparatus that fits into the ambulance setting, allowing examinations prior to the arrival to the hospital.

### TECHNOLOGY AND PATENTS

MammoWave's imaging technique employs low power (1 mW) microwaves in the 1-9 GHz band. The device contains two antennas, which illuminate the breast using electromagnetic fields in microwave band and measure the correspondent scattered electromagnetic fields. The screening takes five minutes per breast and is performed with the patient lying in comfortable position.

The technology patented in EU, CHINA, and USA is based on the exploitation of dielectric properties of human tissue, as the contrast between normal/ malignant tissues at microwave frequencies is captured and depicted in the final image, allowing breast cancer detection with accuracy >90%. If augmented by AI, we achieve accuracy >98%.

### KEY PARTNERING OPPORTUNITIES

- scientific collaboration
- strategic partnership
- investment opportunity
- grant search

### OTHER INFO:

Date of foundation: February 2015  
Employees: 10 Employees + 4 PhD and Post PhD Student at London South Bank University funded by UBT SRL

### Contacts:

Headquarter: via Santa Maria della Spina 25, Rivotorto di Assisi  
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