meet in italy
FOR LIFE SCIENCES
GENOVA - LIGURIA 2021

MIT4LS SUB2021
Meet in ITaly for Life Sciences
StartUp Breeding

Meet in Italy for Life Sciences 2021

StartUp Breeding 2021 – MIT4LS SUB2021
Atlantis Pitching Arena
1st October 2021
Genova, Italy

Meet in Italy for Life Sciences Startup Breeding 2021

Atlantis Pitching Arena
1st October 2021, Genova - Italy

Meet in Italy for Life Sciences – MIT4LS – the leading international partnering event in the life sciences sector in Italy – is used to showing special attention for startups, with more than 540 startups participating in the networking sessions over six editions.
Since 2016, **specific initiatives to train and support international startups and business idea, have become a key component of MIT4LS**. Over the last five editions, more than 290 applications were collected, 95 startups attended the training and final sessions, more than 110 investors and corporate representatives were involved in the final pitch presentations event.

Within the framework of activities of the 2021 edition of MIT4LS, **MIT4LS StartUpBreeding - MIT4LS SUB2021** is the initiative dedicated to startups and business proposals.
The goal is to provide them with expertise, tools and connections in order to boost and fully exploit their business potential, thanks to the support of an **extensive network** of startup mentors, coaches, experts and several investors.
At the end of the training, the selected finalists pitch their proposals at the **Atlatis Pitching Arena 2021** in front of potential corporate partners and international investors, on the **1st of October 2021 in Genova**, during the MIT4LS days.
An expert jury will assign the title of MIT4LS2021 most innovative start-up award and the several special awards, offered by the **SUB2021 partners.**

Investors and corporates are invited to participate in the Atlantis Pitching Arena 2021 on the 1st of October and dive into its life sciences innovation showcase, exploring unique opportunities of investments and joining the several investment funds and life sciences organisations already supporting MIT4LS SUB2021.

Atlantis Pitching Arena is a free, physical event, but the pitch presentations will be also broadcasted in streaming. Connection details will be shared with registered participants only few days before the event.
Registration form here: **https://forms.gle/eYZNMqKZTqfsYzmx6**

For information, please contact: f.mazzini@scienzedellavita.it.

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Atlantis Pitching Arena 2021 finalists overview

APPROXIMA tricuspid therapy	**Medical devices** Tricuspid regurgitation, ventricular dilatation, right heart failure	**Approxima** develops a unique minimally invasive implantable device for tricuspid regurgitation and right heart failure treatment by reshaping of the right ventricle. The device targets directly the cause of the pathology (ventricular dilation) and could be offered to currently inoperable patients, solving a large unmet clinical need.
WEARnCARE by CoAImed	**Medical devices** Parkinson's disease monitoring, AI, DSS	**CoAImed** develops WEARnCARE, a decision support tool for very accurate and objective Parkinson's disease diagnosis, progression monitoring and management, combining proprietary AI algorithms, wearable devices and customized protocols.
COMPLEXDATA	**Medical devices;** Metastasis risk, AI, DSS, personalized medicine	**ComplexData** developed ARIADNE, a computational platform that can estimate the risk of metastasis in individual patients, thus help designing personalized therapies and avoiding overtreatment. ARIADNE has been already clinically validated for triple negative breast cancer, and is a CE marked medical device.
Fagoterapia LAB	**Pharma** Phage therapy, antimicrobial resistance, personalized medicine	**Fagoterapia LAB** develops effective treatments based on bacteriophages to eradicate drug-resistant infections (AMR) and significantly improve the quality of life of patients. Using a distinctive phage collection (phage bank) and a proprietary algorithm for phage screening, Fagoterapia Lab can develop personalised or broader-spectrum antibiotic formulations for the effective treatment of chronic or life-threatening AMR conditions.
FORESEE BIOSYSTEMS	**Pharma** Acute and chronic cardiotoxicity, laser technology	**Foresee Biosystems** developed an innovative device, using a new patented laser-based technology, for the non-invasive assessment of acute and chronic (several days up to few weeks monitoring) in-vitro cardiotoxicity, allowing the evaluation of the drug-related adverse effects on human heart cells.
Històs	**Dermocosmetics** Human skin model, in vivo-like test, responsive dermis	**Històs** developed a unique full thickness human skin model, composed by a viable epithelium grown on a viable native dermis, and capable to replicate morphology, responsiveness and function of the native counterpart. It extend the skin testing potential from safety to efficacy and adsorption, speeding-up the screening of protectants and repairing molecules, providing direct information on skin ageing and repairing.

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Atlantis Pitching Arena 2021 finalists overview

IMMAGINA · BioTECHNOLOGY ·	**Diagnostics,Pharma** Ribosome, genomics, proteomics, biomarkers	**IMMAGINA BioTechnology,** the ribosome company, developed the only tools allowing researchers to capture and analyse active ribosomes in real time enabling to know what proteins are been produced and the information encoded in the RNA at the same time, accelerating the path toward the discovery of novel biomarkers and therapeutic strategies.
MEDICUD	**Medical devices** Wound therapy, negative pressure, portable device	**Medicud** developed a portable, mechanical device to treat exudating wounds, using negative pressure treatment (NPWT), in particular chronic and post-surgical wounds. Current NPWT devices are expensive and unhandy, while Medicud device shows the same performance as its electronic counterparts, being very cost efficient, easier to use and sustainable compared to competitors.
PERFORMS PERSONALIZED FORMULATIONS	**Pharma** Psoriasis, chronic diseases, anti-inflammatory, nanotechnology	**PerFormS** developed a potential treatment for psoriasis, a chronic inflammatory disease. PerFormS patented technology is able to increase Palmitoylethanolamide (PEA) solubility by 100 times, making it bioavailable and very effective for long-term treatment of psoriasis plaques. PEA is a potent endogenous anti-inflammatory compound, currently unexploited as drug due to extremely poor solubility.
Quickly prc free your movement	**Medical devices** Rehabilitation, gait maintenance, Parkinson' disease	**QuicklyPRO** developed Q-WALK, a wearable device for Parkinson's disease patients rehabilitation, based on the proven scientific rationale of using visual feedback. Q-Walk consists of a pair of knee pads that project personalised light signals on the floor to guide walking, promoting rapid learning and shortening recovery time.
RegenSight	**Medical devices** Visual disorders, non-invasive correction, incision free	**Regensight** developed a breakthrough medical solution providing correction of visual disorders with no incisions, consisting in controlled delivery and photo-activation of a chromophore aqueous solution into the cornea of the eye, resulting in precise remodeling of the biomechanical properties of the cornea. Targeted visual disorders are keratoconus, myopia and presbyopia.

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Relief
Restoring urinary continence

Medical devices

Urinary incontinence, unisex, minimally invasive

Relief proposes an innovative endo-urethral artificial urinary sphincter system to completely restore the control over urination. The device is unisex, highly innovative, effective, minimally invasive, low-cost, patient-compliant and with a very simple implantation procedure. The sphincter opening/closing is possible by simply approaching a small external magnet for few seconds.

TAG Therapeutics | IFOM

Pharma

Aging-related diseases, senescence, rare diseases

TAG Therapeutics developed Teleblock, a very specific inhibitor of senescence. It is an antisense oligonucleotide against RNA produced at shortened or damaged telomeres (the trigger for most the pathways leading to cellular senescence), blocking cellular senescence at the source, while all competitive approaches intervene downstream. Inhibitor efficacy was demonstrated in animal models mimicking human diseases of old age (e.g. idiopathic pulmonary fibrosis and aplastic anaemia).

VERDI
AI for Personal Medicine
Technologies
MULTI OMICS MATCH

Pharma

Personalized medicine, immunization vs cancer, AI-based

VERDI, Viral Epitopes Ranked by Digital Intelligence, is an innovative AI-based technology to identify and develop personalized treatments to induce immune responses to destroy tumor cells. The approach allows developing vaccination by peptides matched to the DNA and RNA signature of the individual patient and the tumor. Its proprietary cloud AI-based application exploits large data to ensure the safety and immunogenicity of the personal peptides. First application is targeting breast cancer.

viper
Vein Image Processing for Edge Rendering

Medical devices

Venous ultrasound, image processing, hydratation status

Viper is developing a patented semi-automatic image-processing technology to support ultrasound (US) assessment of hydration status by US scan of inferior vena cava (IVC), a very common procedure performed on almost 10% of the emergency department accesses and of support for evaluation of other medical conditions. The system allows a correct acquisition and and an accurate, standardized, clear and precise output.

Approxima
Tricuspid therapy

Monza - Italy

Medical devices **Tricuspid regurgitation**

Ventricular dilatation **Right heart failure**

Founding year: 2020
Current stage: preclinical testing in progress – TRL 4
IP: 2 patents
Looking for funding: € 4 M, 3 years to complete preclinical validation

Approxima develops a patented, unique, minimally invasive implantable device for tricuspid regurgitation and right heart failure treatment by reshaping of the right ventricle. Tricuspid regurgitation is a condition affecting more than 4 M patients worldwide with poor prognosis. The device targets directly the cause of the pathology (ventricular dilation) and could be offered to currently inoperable patients,. The device design was guided by new clinical findings leading to a prototype developed and tested ex-vivo by a multidisciplinary team.

Context
Tricuspid regurgitation is a pathology of the aging society, affecting 4.2 M patients worldwide that are currently left untreated. This number is predicted to increase with population aging. Most of these frail patients cannot undergo a surgery and have poor prognosis (50% 2 years mortality rate: <1% surgery candidates). Palliative treatments are indeed ineffective, and the pathology worsens rapidly. The tricuspid valve open-heart surgery is performed rarely, as it is considered challenging and risky. Recent clinical studies showed that conservative tricuspid valve surgery has suboptimal long-term results, especially if concomitant right heart failure occurs, a condition commonly coexisting with tricuspid regurgitation. Poor clinical outcomes were associated with non-specificity of surgical techniques, that only address the improper closure of the valve, not the main cause of the pathology, the right ventricular dilation, that is left untreated. Emerging transcatheter and minimally invasive devices could offer a safer solution, but they just replicate the surgical approaches and might have the same suboptimal efficacy.

Value Proposition
Approxima develops a permanently implantable medical device intended to treat the tricuspid valve and right heart failure by reshaping of the right ventricle. The device will be implanted into the patient heart via minimally invasive procedure with a dedicated delivery tool (safe for patients with surgical risks). The implantation procedure will be performed under medical imaging guide, beating heart conditions.
Competitive advantages of Approxima solution are:
● Minimally invasive implantation – no need for open heart surgery; ● targeting ventricular dilation – the direct cause of the pathology – medical community agrees that ventricular intervention could provide more stable results and reduce the reoperation rate; ● post-operative adjustment – it allows to respect the right ventricle physiology and to perform gradual reduction of the pathological conditions; ● impact on right heart functions – concomitant treatment of right heart failure.

Considering anatomical suitability, Approxima device could be appliable in 75% of total tricuspid market. Moreover, the device could have a positive secondary effect in right heart failure treatment, which could expand applicability and market opportunity

Market overview
Global heart valve devices market is predicted to reach $ 16 Bn in 2024 with CAGR of 10%. Global tricuspid valve repair market, expected to be about $ 80 M in 2021, is estimated to grow with CAGR of 10% reaching about $ 200 M by 2030, fueled by population aging, increasing demand for minimally invasive therapies and advancements in medical imaging and transcatheter technologies. Worldwide, there are 4.2 M minimally invasive/transcatheter tricuspid valve therapy potential candidates with 500k new cases yearly.

by CoAImed

Medical devices | Parkinson's disease | AI | DSS | PD objective monitoring

Founding year: 2021
Current stage: multicentric clinical prevalidation in progress – TRL 7
IP: 2 patents, third in progress
Looking for funding: € 1.2 M to obtain class IIa medical device CE mark, 1 year

CoAImed

Collaborative development of AI-based technologies for Medical applications

Pisa – Italy; https://www.wearncare.it/

CoAImed - Collaborative development of AI-based technologies for Medical applications – aims to develop and market biomedical solutions based on artificial intelligence, sensors, and biorobotics, exploiting the body-brain interplay.
CoAImed develops WEARnCARE, a decision support tool for Parkinson's disease diagnosis, progression monitoring and management combining wearable devices, customized protocols and proprietary AI algorithms. The system returns to the clinician automated objective medical reports, easy to visualize and interpret, and it allows the monitoring at home of the patient response to treatments.

Context

Parkinson's disease (PD) is a neurodegenerative disorder affecting millions of people worldwide (1.4 million just in Europe) with an increasing incidence rate. The direct, indirect, and intangible costs related to the pathology define a severe economic impact on patients, caregivers, and national health systems (estimated in € 13.9 Bn in Europe yearly). Patient's motor evaluation (MDS-UPDRS section III tasks) represents the central and main part of standard clinical practice for PD diagnosis, follow-up visits and therapy adjustment. It requires neurologists to observe patients movements mentally evaluating several motor parameters (e.g., amplitude, rhythm, hesitations) in order to assign a clinical score. According to neurologists community, this evaluation is affected by subjectivity and variability, and at-home assessments rely on patients' subjective reports. Accurate and standardized data as well as immediate digitalized patient reports are needed.

Value Proposition

WEARnCARE is a decision support tool combining wearable devices, customized protocols and proprietary AI algorithms in order to provide to neurologists an objective and accurate evaluation of motor capabilities of PD patients relying on an automatic full-body exam adherent to the MDS-UPDRS III tasks. The objective assessment allows the evaluation of PD pathology progression and therapy adjustment, from the first diagnosis to the advanced stages, monitoring the subtle variations in motor performance during the follow-up visits. It can be used both in hospital and at home. WEARnCARE represents a plug & play approach and automated medical report with pooled indexes. The system acts as a decision support tool to standardize the procedure for motor assessment in PD, allowing better use of resources during the visits and improving the quality of life of PD patients at home. Compared to the direct competitors, WEARnCare offers a unique selling proposition and improved output and accuracy of PD clinical motor assessment (100% accuracy in characterizing PD motor symptoms), including bradykinesia and the tremor, thanks to the proprietary AI algorithms and sensor systems.

Market overview

PD is the second most common age-related neurodegenerative disorder, estimanted to affect up to 10 M people worldwide and with a prevalence set to double by 2030. Clinical decision support tools and PD telemedicine market are expected to reach € 1.47 Bn in 2023, CAGR 11.8%, and € 1.1 Bn in 2030, CAGR 5.8% respectively. PD patients diagnosis and follow-up market is estimated € 120 M just in Europe.

ComplexData

Creating value by decoding data

Milan – Italy; https://www.complexdata.it/

Medical devices | Metastasis risk | AI | DSS | Personalized medicine

Founding year: 2018
Current stage: CE mark obtained as medical device – Ready for market
IP: 1 patent
Looking for funding: € 1.5 M for 2 years for R&D expansion, marketing and sales

ComplexData develops innovative solutions based on big data analytics and artificial intelligence to analyse complex systems (including biomedical data, from genomics to imaging). ComplexData developed ARIADNE, a computational platform that can estimate the metastasis risk in individual patients, thus helping oncologists in designing personalized therapies and avoiding overtreatment. ARIADNE integrates a large set of transcriptomes describing the phenotype of the tumor obtained from patient bioptic samples and reconstructs the metastatic landscape of a specific tumor. ARIADNE has been already clinically validated for triple negative breast cancer, and it is a IIa CE marked medical device.

Context

Nowadays, people do not die for the primary tumor but for metastasis, which account for 90% of tumor mortality. A critical barrier to develop effective drugs to treat cancer metastasis is the high heterogeneity of cancer cells implying that each cell of a specific tumor is slightly different from the others. Currently available drugs are, however, not generally designed for such specificity and heterogeneity. It has been estimated that 60% of cancer patients receiving chemotherapy for metastasis prevention is overtreated, not responding to treatment and suffering side effects.
Breast cancer (BC) has the highest mortality than any other cancer in women worldwide. About 2 M cases of BC are diagnosed every year, 20% represented by triple negative type (TNBC). TNBC has no clear pharmacological therapeutic approach and it is more aggressive and have a poorer prognosis than other types of breast cancer.

Value Proposition

To face the issue of cancer heterogeneity, ComplexData developed ARIADNE, a computational platform that can estimate the risk of metastasis in individual patients, thus helping in designing personalized therapies. ARIADNE integrates a large set of transcriptomes that describe the phenotype of the tumor obtained from bioptic samples of cancer patients and reconstructs the metastatic landscape of a specific tumor. It is possible to interrogate the map and calculate the risk of aggressiveness of an individual patient to modulate the relevant therapy. ARIADNE has been already clinically validated for triple negative breast cancer and a patent filed on the methodology. Savings on overtreatment and side effects avoided expected by the use of ARIADNE is € 75 M.
ARIADNE can be extended to other tumor types, such as lung and stomach, and implementation to use with liquid biopsy is in progress, which would dramatically impact the field of cancer genetic tests. At the moment ARIADNE is the unique platform working on triple negative breast cancer.

Market overview

TNBC is a heterogeneous group of tumors characterized by aggressive behavior, high risk of distant recurrence, poor survival and not specific pharmacological options. Therefore, progress in the treatment of TNBC remains an important challenge. Robust predictive biomarkers to accelerate clinical progress are needed. New TBNC cases are 400k per year. Global TNBC treatment market is expected to grow with a 4.7% CAGR up to 2030.

Fagoterapia LAB

Winning the war against bacteria

Pisa– Italy; https://www.fagoterapia.it/

Pharma | Antimicrobial resistance | Phage therapy | Personalized medicine

Founding year: 2021
Current stage: proof of concept optimized – TRL 3/4
IP: patent in progress
Looking for funding: € 2.5 M, 18 months for 2 formulation PoC validation, compassionate usage pilot study

Fagoterapia LAB aims to develop effective treatments against drug-resistant (AMR) infections using solutions based on bacteriophages (natural viruses, killers of bacteria) to eradicate infections and significantly improve the quality of life of patients. A distinctive phage collection (phage bank) and a proprietary algorithm are its keys for the development of optimized bacteriophage formulations. Both antibiotics-like and personalized bacteriophage-based product can be obtained for effective treatment of antibiotic-resistant infections, with particular reference to chronic and life-threatening conditions, such as pandrug-resistant infections. First phage therapy formulations in development target K. pneumoniae and P. aeruginosa, some of the most frequent and dangerous AMR infections.

Context

Approximately 700k infections are diagnosed every year in Europe caused by AMR, which are very difficult to treat with antibiotics, often leading to chronic infections impossible to eradicate. Moreover, pandrug resistant cases are rapidly increasing over the last years. In Italy, the number of deaths from AMR infections is around 10k/year, >30k in Europe. Globally, the World Health Organization estimates that AMR deaths are set to increase up to 10 M/year by 2050 due to a lack of effective strategies. Todays, few antimicrobial strategies have been developing, and there is an urgent need of innovative treatments to face AMR growing wave.

Value Proposition

Bacteriophages are natural viruses that selectively attack bacteria being harmless to humans and thus providing an alternative to conventional antimicrobial therapy, in particular for AMR infections. Each kind of phage targets a specific type of bacteria, resulting highly selective, while cocktails of phages can be used to target a broader range of bacteria. Being so selective, they result harmless to the body and gut flora, and they can also be used in combination with standard antibiotics.
Fagoterapia LAB (FL) aims to develop and commercialize phage therapy taking advantage of two assets; the proprietary collection of phages ("Phage bank"), characterized and tested against a number of infection-causing bacteria; the proprietary AI algorithm (patent in progress) to identify the best mix of effective phages against a specific bacteria causing the infection, based on the genomic information of bacteria and phages. Using the two assets, FL can offer customized bacteriophage formulations, i.e. personalized antimicrobial treatment against patient-specific antibiotic-resistant infections and it is developing optimized formulations against K. Pneumoniae and P.aruginosa, two of the most common AMR infections, leading to high mortality rate and chronic infections.
In Italy, FL is currently the only player trying to develop this therapy. Other very few players have started to develop phage therapy in Europe and US, the most advanced being in phase I or II clinical trial.

Market overview

Recent estimates show that about 700k infections occur in Europe each year due to AMR bacteria, and that approximately 33k people die as a direct consequence of these infections. AMR infections cost to the healthcare systems of EU countries is around € 1.1 Bn/year. Resistance to second- and third-line antibiotics is expected to double by 2030. As an example, in Italy, K. pneumoniae causes 6.000/year AMR genito-urinary infections with 40% mortality rate; P. aeruginosa causes 1.000/year prosthetic AMR infections resulting in chronic illness of more than 15 years.

Foresee Biosystems

Reshape the future of drug safety

Genova – Italy; https://foreseebiosystems.com/

Pharma **Chronic cardiotoxicity**

Acute cardiotoxicity **Laser technology**

Founding year: 2021
Current stage: working and validated prototype – TRL 6
IP: 1 patent
Looking for funding: € 2 M, 2 years for marketing and application expansion to neurotoxicity

Foresee Biosystems developed innovative solutions for the assessment of in-vitro cardiotoxicity, evaluating the drug-related adverse effects on human heart cells. The platform is based on a new patented laser-based technology that allows simultaneous access to action potentials of thousands of cardiomyocytes, offering electrophysiological measurements with high quality, high parallelization and extreme reliability. The unique features of the laser technology unlock an unprecedent possibility. Indeed, thanks to the very low-invasiveness, the platform enables the recordings of action potentials from the same cells for several days, up to few weeks, allowing accurate evaluation on cardiac cells not only of acute but also of chronic cardiotoxicity.

Context

Heart disease is the most common cause of death in the world. Hundreds of laboratories across the globe are working on cardiac drugs to treat heart disease. However, cardiac drug safety is a major concern and one of the sticking points throughout cardiac drug development. When it comes to new cardiac medications, all current safety testing methodologies are lacking in efficacy in one way or another. Cardiotoxicity is one of the leading causes of drug attrition. It has been one of the main reasons for drug withdrawals, accounting for 45% of all drugs taken off the market between 1994 and 2006. Therefore, establishing in vitro assay at the early phases of drug development is critical in preventing late-stage failure.

Value Proposition

Foresee Biosystems (FB) developed a new methodology for accurately testing the safety of new cardiac medications. It is a non-invasive way of recording cell action potentials by means of cell poration with a patented laser-based optical technique. The technology allows for the precise recording of intracellular action potentials and drug effects on the ion channels of human cardiac cells, all label-free and in real-time. The very low invasiveness assay allows chronic action potential recording from the same culture over time windows that can reach several days, making the platform useful for studying the "hidden cardiotoxicity". The system unlocks the possibility to predict precisely drug-related adverse affects that very often oblige their withdrawn from the market.
The tool demonstrated high reliability across different commercially available cardiomyocytes co-culture, with accurately measuring changes in depolarization, repolarization, and, indeed, detecting arrhythmias phenomena. FB has thus created the most precise testing of human cardiac cells in the marketplace with the goal to reduce development costs for drugs and dramatically increase safety. FB is already in contact with several CROs working on cardiotoxicity testing.

Market overview

The global cardiovascular drugs market is expected to grow from $ 88 Bn in 2020 to $ 108 Bn in 2025 at a 4% CAGR. Half of drug development is carried out by specialized CROs, whose market is expected to reach € 45 Bn by 2022. It has been estimated that 1% of the total CRO market is focused on cardiotoxicity testing.

Històs

Living fully-endogenous engineered human skin

Napoli – Italy

Dermocosmetics | **Human skin model** | ***In vivo*-like test** | **Responsive dermis**

Founding year: to be incorporated beginning 2022
Current stage: working and validated prototype – TRL 6
IP: 1 patent
Looking for funding: € 1 M for manufacturing implementation & marketing, 1 year; additional 0.7 M for expansion, R&D on new applications, certifications, 2 years

Històs developed a unique full thickness human skin model (FT-HS) capable to replicate morphology, responsiveness and function of the native counterpart. It is composed by a viable epithelium grown on a viable native dermis, capable to replicate both cellular and structural modifications involved in the majority of the skin-related pathologies and unaesthetic conditions. The presence of the viable native dermis layer allows to extend the testing potential from safety to efficacy and adsorption; to speed-up the screening of protectants and repairing molecules; to increase the reliability of the efficacy tests with consequential benefits for both companies (higher market positioning) and citizens (higher safety and satisfaction). Històs provides in vivo-like skin models for testing, resulting in the only models providing direct information on skin ageing and repairing.

Context

According to the EU guidelines for the pre-market testing, pharmaceutics and cosmetics companies cannot test their products on animal models. That has fostered the development of engineered full-thickness human skin models (FT-HS) that are sold by tissue-provider companies to certified testing centers, in order to assess the safety and the efficacy of drugs and formulations protectant agents prior their commercialization. Nevertheless, the commercially available gold standard of FT-HS still possesses a huge limitation in mimicking real skin, as it is routinely fabricated by placing a viable human epidermis layer on an artificial dermis, which is neither able to provide reliable information concerning the efficacy of compounds nor to replicate the full functionalities of the native human skin. This implies a low prediction potential and a limited testing capability, when used as in vitro screening model. Improving the FT-HS performances still represents a crucial need for dermocosmetic and pharmaceutic industry and reconstruction surgery as well.

Value Proposition

Històs developed an innovative FT-HS composed by a viable epithelium grown on a viable native dermis, capable to replicate both cellular and structural modifications involved in the majority of the skin-related pathologies and unaesthetic conditions (e.g. wrinkles). The presence of the viable native dermis layer allows to accurately predict the efficacy and adsorption of dermocosmetic and pharmaceutical compounds besides their safety, simulating the real effect of a given coumpound on the dermis components. That results in the possibility to speed-up the screening of protectants and repairing molecules and to get direct information on dermis ageing and remodeling, providing a substantially in vivo-like test. The higher reliability regarding efficacy and safety translates into a higher market positioning of the products for the developing company.
The same technology can be used to develop human skin substitutes for deep burns and severe trauma healing. Preliminary results have been already obtained.

Market overview

FT-HS market for advanced testing purposes was valued $ 1 Bn in 2019. The market is expected to grow at a CAGR of 10% during 2019-2025. Current market is led by both multinational players and SME carrying out safety testing only. Accredited in vitro testing centers are more than 50 in Europe.

IMMAGINA BioTechnology

The ribosome company

Trento – Italy; https://immaginabiotech.com/

Diagnostics **Pharma** **Ribosome**

Genomics **Proteomics** **Biomarkers**

Founding year: 2014
Current stage: on the market
IP: 6 patents
Looking for funding: € 5 M, to support on-going industrialization, sales and R&D activities

IMMAGINA BioTechnology is an innovative company operating in the medtech sector of genomics, proteomics and enabling technology. IMMAGINA, the ribosome company, has developed the only tools which allow researchers to capture and analyse active ribosomes in real time together with associated RNAs and proteins, allowing to know at the same time what proteins are been produced and the information encoded in the RNA. The present platform is dedicated to research-use-only products with the potential to accelerate the path toward the discovery of novel biomarkers and therapeutic strategies in cancer and congenital disorders. Upgrade of the platform is in progress to identify small ncRNA associated with ribosomes as potential drug targets and biomarkers of disease.

Context

There is an unexplored path between genomics and proteomics. Access to mRNA identification and abundance is clear. Access to proteins is clear. But the ability to isolate, identify and study transcripts during the moments of active translation has been limited by the difficulty of catching ribosomes in action.

Value Proposition

Ribosome profiling is likely to become an important addition to the functional genomics analysis toolbox. It provides information that conventional RNA-seq methods cannot deliver with regard to translational initiation, control and regulation. Ribosome profiling holds the promise of gaining new insights into causes and potential treatments for cancer and other complex human diseases.
IMMAGINA provides unique technology to isolate components of the translational mechanism. The driving focus is to overcome limitations of existing tools to truly enable scientists to achieve their highest scientific objectives. IMMAGINA solutions allow for simultaneous measurement of newly synthesized proteins and the RNA template from which they are produced, and delivering the highest level of correlation between gene expression and the proteome. The current platform is dedicated to research-use-only products with the potential to accelerate the path toward the discovery of novel therapeutic strategies in cancer, other human diseases, and congenital disorders.
R&D is in progress to identify small ncRNA associated with ribosomes as potential drug targets and biomarkers of disease. Regarding that, strategic partnerships with pharma/biotech companies will be accomplished. IMMAGINA is already selling to +150 clients since 2019.

Market overview

The market for sequencing consumables was nearly € 2 Bn in 2020. Life science reagent/kits (molecular biology products) market is expected to grow with a 10% CAGR until 2025, boosted by prognostic IVD. A growing share of the market (about € 200 M in 2020) is dedicated to products capable of measuring parameters such as "translation efficiency" and "protein synthesis rate". For these purposes, approaches such as RNA sequencing (RNA-Seq), ribosome profiling (Ribo-Seq), and proteomic approaches (e.g. PUNCH-P, p-SILAC) are becoming more and more needed.

Medicud

Simplicity over complexity

Rome – Italy

Medical devices **Wound therapy**

Negative pressure **Portable device**

Founding year: 2020
Current stage: entering clinical trial for CE mark – TRL 5
IP: 1 patent
Looking for funding: € 1.5 M seed, followed by 2.5 M series A, 4 years to support CE mark, marketing and sales, further R&D.

Medicud aims to providing economically sustainable solutions to improve wound care by developing a device to treat exudating wounds (chronic and, in particular, post-surgical wounds) using negative pressure treatment (NPWT), the most effective treatment available for such wounds. Current NPWT devices are expensive, unhandy, with a non negligible environmental impact. Medicud, developed a portable mechanical device with the same performance as its electronic counterparts, that is cost efficient and economically sustainable, paving the way to a wider use of NPWT. Medicud is entering clinical trials in order to get the CE mark, with the manufacturing supply chain already arranged.

Context

Globally more than 150 million patients a year develop a wound that can be treated with negative pressure wound therapy (NPWT), ranging from chronic wounds to surgical closures. In particular, NPWT is considered the gold standard today for wounds following surgery (i.e. abdominal and cardiac surgery) and a very effective agent in complex non-healing wounds, as infection rate is reduced close to zero and tissue reparation is accelerated. Current devices are extremely expensive, unhandy and have a non negligible ecological impact.

Value Proposition

Medicud developed a patented mechanically NPWT device that will combine efficiency, sustainability, cost effectiveness and portability, matching the benchmark performance and operating at a continuous and costant negative pressure in the -75 to -125 mmHq range. Being mechanically powered, it has been possible to simplify the device, substantially lowering the cost compared to marketed competitors. It is realized using bio-sourced polymer with an innovative design. The patient doesn't need to carry a heavy and clumsy device, while charging the device results very easy, just a simple pression on a button once a day. The device has a 60 mL canister to store exudate produced by the wound, that corresponds to the usual volume produced in one week by patients. It is portable, discrete, lightweight and easy to connect to wound dressings, with a cost one third of the main competitor, SNaP from Acelity. Supply and manufacturing chain has been already identified, clinical trial for CE mark will start at beginning of Q4 2021.

Market overview

More than 150 M patients suffer from exuding wounds every year in the world, and exuding wounds are a raising problem as directly related to pathologies such as diabetes, obesity and aging, being estimated to double by 2045. At present, only 4 M of patients have access to NPWT, because of the high cost of devices. NPWT market generates $ 2.4 Bn annually, with a CAGR rate of 7.3% up to 2030.

PerFormS

Personalized formulations

Modena – Italy; https://performslab.it/

Pharma **Psoriasis** **Chronic diseases**
Anti-inflammatory **Nanotechnology**

Founding year: 2020
Current stage: starting GLP pre-clinical studies – TRL 4/5
IP: 1 patent
Looking for funding: € 1.2 M to support GLP pre-clinical studies completion, industrial scale-up

PerFormS has developed Nano-Palmitoylethanolamide (PEA), a candidate drug for the dermal chronic treatment of psoriasis, a chronic inflammatory disease still without a longterm cure, since anti-inflammatory drugs have heavy side effects especially in prolonged treatments. PEA is a potent endogenous anti-inflammatory compound, currently unexploited in the pharmaceutical field due to its extremely poor solubility in any medium. PerFormS patented technology is able to transform PEA in sub-micron particles, increasing PEA solubility by 100 times and making it bioavailable and very effective for long-term treatment of psoriasis plaques.

Context

Corticosteroids drugs, as cortisone, are largely employed as chronic inflammatory diseases treatments, representing the gold standard therapy. Psoriasis is defined as a severe skin chronic inflammation and affects more than 125 M people worldwide. All patients suffering from psoriasis are firstly prescribed with topical cortisone based drugs, regardless to the degree of the disease. Despite being very effective, corticosteroids cannot be used for prolonged period of time, as they lead to the occurrence of a number of adverse effects. This is a very crucial and limiting issue for chronic diseases such as psoriasis, that needs lifelong treatments. Therefore, the identification of alternative anti-inflammatory drugs becomes a central issue to be addressed.

Value Proposition

Palmitoyilethanolamide (PEA) is an endogenous molecule known for its potent anti-inflammatory, immuno-modulating properties and for its safety. However, PEA has not yet been exploited as a drug due to its very poor solubility in any medium, which dramatically limits its usage in pharmaceutical formulations. PerFormS developed a patented technology transforming PEA into sub-micron particles, the Nano-PEA formulation, in which the solubility of PEA is increased by more than 100 times, overcoming the bioavailability barrier. In this way, by adding Nano-PEA into a topical formulation, is possible to obtain a new drug with the potential to revolutionize psoriasis treatment, making it safe even for long-term use.
Nano-PEA, in contrast to raw PEA, has been shown to have anti-inflammatory activity comparable to a commercial cortisone on an animal model of psoriasis, without showing the adverse effects of cortisone.

Market overview

Psoriasis patients are more than 125 M worldwide, 85 M of whom are prescribed topical therapy. The annual expenditure for treatments related to psoriasis is currently estimated at about $30 Bn, of which $ 13 Bn on topical therapy alone. $ 6.5 Bn is the amount spent on topical cortisone anti-inflammatory drugs.

QuicklyPRO

Free your movement

Bergamo – Italy; https://quicklypro.it/

Medical devices **Rehabilitation**

Gait maintenance **Parkinson's disease**

Founding year: 2018
Current stage: pre-production phase – TRL 8
IP: 1 patent
Looking for funding: € 3 M, to support go to market, web platform development

QuicklyPRO, founded by physical therapists, developed Q-WALK, a wearable device for Parkinson's disease patients rehabilitation, based on the proven scientific rationale of using visual feedback. It can be used for rehabilitation and gait maintenance in people suffering from Parkinson's disease, and potentially also for use in other neuro-degenerative diseases. Q-Walk consists of a pair of knee pads that, when worn just below the knees, project personalised light signals on the floor to guide walking. These light signals indicate to the patient the ideal support point for each step, thus guiding the gait. It promotes rapid learning and shortens recovery time, while maintaining results over time, reducing walking disorders and enabling people to regain their independence.

Context

Parkinson's disease (PD) is a progressive disease estimated to affect 10 M people worldwide. It leads to a constant (albeit slow) evolution of the disease and a consequent loss of autonomy in performing basic activities of daily life. The loss of these autonomies creates a very deep and difficult discomfort, which often turns into a decrease in the patient's participation in social life. Rehabilitation therapy can be of help, but often lack of compliance, poor doctor-patient communication and patient discomfort from not being able to evaluate improvements from rehabilitation limits the therapy outcomes.

Value Proposition

The maintenance of walking ability is a fundamental aspect for the maintenance of motor, relational and social autonomy. In that regard, QuicklyPRO developed Q-WALK, a patented rehabilitation tool for Parkinson's patients with walking disorders, that is clinically effective, easy to use for both the patient and the physiotherapist, and that promotes the objectification of training. Q-WALK is made of a pair of wearable knee pads projecting personalised light signals that guide walking, indicating to the patient the ideal support point for each step.The light feedbacks are set (also remotely) by physiotherapists based on the processing of the biological and pathological anthropometric parameters of each individual patient. The integrated software allows the constant monitoring of the patient's gait, activity and exercises, involving the patient in the treatment path. Further improvements of the algorithms, remote rehabilitation and monitoring are in progress.

Market overview

PD is the second most common age-related neurodegenerative disorder, estimanted to affect up to 10 M people worldwide and with a prevalence set to double by 2030. It is estimated that up to 60% PD patients have impaired postural control, walking disorders. The global rehabilitation equipment market size ($ 15.2 Bn in 2020) is expected to grow to $ 19.1 Bn by 2030 at a CAGR of 9.2%, fueled by increasing prevalence of degenerative diseases. Home care settings and physiotherapy centers together accounted for nearly $ 3.2 Bn of the overall rehabilitation equipment market in 2020.

Regensight

The theranostic eye care health company

Rome – Italy; https://regensight.com/

Medical devices | **Visual disorders** | **Non-invasive correction** | **Incision free**

Founding year: 2019
Current stage: close to enter the keratoconus market (TRL 8), clinical validation for theranostic platform close to begin (TRL4/5)
IP: 3 patents from parent company, trademarks
Looking for funding: € 1.7 M, for platform clinical validation for myopia and presbyopia.

Regensight developed a breakthrough medical solution based on therapy guided by imaging diagnostics, providing non-invasive correction of visual disorders based on proprietary diagnostic and therapeutic features. The Regensight platform is the only existing surgical product designed to improve visual acuity with no incisions. It consists in a combination of a UV medical device for controlled delivery and photo-activation of a bio-chromophore aqueous solution into the cornea of the eye. Visual correction is attained by precise and personalized remodeling of the biomechanical properties of the cornea induced by theranostic-guided photo-polymerization of stromal proteins with UV-A light. Targeted visual disorders are keratoconus, myopia and presbyopia. CE certification of the platform for keratoconus has been obtained in 2021.

Context

Visual disorders, or refractive ocular disorders, are the most frequent causes of visual disability worldwide. More than 2/3 of the world population suffers from a refractive ocular disorder and needs for some type of optical correction to perform normal daily activities. Currently, surgical treatments of visual disability are invasive and associated with known problems, such as pain and risk of severe complications (e.g., infection, corneal scarring, corneal ectasia), which may induce vision loss. These invasive factors greatly limit the widespread adoption of current treatments, which have less than 1% penetration rate among candidate population. In addition, there is no effective and safe surgical solution for the most frequent and demanding visual disorder, such as presbyopia, which affects more than 40% people worldwide!

Value Proposition

Regensight developed the first medical solution based on proprietary therapy guided by imaging diagnostics (theranostics) for providing non-invasive correction of visual disorders. The Regensight platform is the only existing theranostic surgical product designed to improve visual acuity with no incisions. Visual correction is obtained by precise, non-invasive, incision free reshaping of the biomechanical properties of the cornea induced by theranostic-guided photo-polymerization of stromal proteins with UV-A light and a bio-chromophore spatially patterned delivered, through a proprietary drug-delivery module. The platform includes also an IoT system for remote predictive maintenance and a machine learning algorithm for improving product performance with use. CE certification was obtained in 2021, allowing access to the keratoconus market. Next phases are clinical validation of the theranostic paradigm (to be completed by Q3 2023) and clinical proof-of-concept for correcting visual disorders (myopia, presbyopia, to be completed by Q2 2024).

Market overview

Instrumentation for diagnosis and treatment of eye disorders market is growing steadily (6% CAGR globally from 2017 to 2022). Refractive eye disorders market is one of the biggest of the ophthalmic market, with € 1.2 Bn annual revenue by 2021. Technological advancements in the field promises greater growth in the near future with a projected CAGR of 10% in 2021-2027. The highly specialized market segment of keratoconus has a projected CAGR of 4.1%. It is expected to reach a value greater than €465M by 2025.

Relief
Restoring urinary continence

Relief
Restoring urinary continence

Pisa – Italy; https://www.reliefsrl.com/

Medical devices **Urinary incontinence**

Unisex **Minimally invasive**

Founding year: 2019
Current stage: first prototype tested in pilot clinical study – TRL 7
IP: 2 patents
Looking for funding: € 5 M, 4 years, for 2nd pilot study, clinical validation for CE.

Relief proposes a new therapeutic approach to restore urinary continence: the world's first miniaturized, unisex, highly innovative, effective, minimally invasive, low-cost and patient-compliant endo-urethral artificial urinary sphincter (AUS), with clear advantages over the competitors. The device fully disappears within the body, with no visible parts outside, and it is able to completely restore the control over urination. The implantation procedure is very simple and performed in outpatient endoscopic procedure. The sphincter opening/closing is possible by simply approaching a small external magnet for few seconds. The device has been devised and optimized over the last 5 years and recently was successfully tested in a pilot study.

Context
Urinary incontinence (UI) is often due to aging, pathologies, traumas or surgical treatments and constitutes a global health problem with a growing social and economic impact. Currently, there are 500 M incontinent people globally (about 60 M people in Europe). UI considerably reduces the quality of life of patients, especially elderly ones, and it has enormous associated costs ($ 18 Bn/y in EU). The treatments available on the market for moderate/severe UI are highly invasive and have transitorial effects on the patients. Adult diapers or catheters are often used for weak UI but imply huge costs ($ 12.6Bn in 2018 at global level), and they only address the effects of the pathology. For severe UI the standard is the implantation of commercial artificial sphincters whose main drawbacks are: failures due to tissue atrophy, erosion and infections; difficult management of the occlusion mechanism; the high components invasiveness; the risks of mechanical failure and use only in men.

Value Proposition
Relief developed RELIEF, the world first miniaturized, unisex, highly innovative, effective, minimally invasive, low-cost and patient-compliant endo-urethral artificial urinary sphincter AUS, able to completely restore the urination control, even in patients suffering of severe urinary incontinence forms.
The AUS consists of an external case, a stent to constrain the sphincter to the bladder neck, a unidirectional polymeric valve and a magnetic safety system. It has been designed to be installed by a simple routine clinical procedure (10-15 min on average) performed during many normal urological examinations, in outpatient endoscopic procedure with local anaesthesia. The sphincter opening/closing is possible by simply approaching a small external magnet to the patient perianal area for few seconds. The device benefits from an extremely simple and innovative design, without electronic components on board, maximizing the acceptability and usability of the device, even by patients with limited psychomotor skills.

Market overview
Currently, there are 500 M incontinent people worldwide, 60 M in Europe, and these numbers are destined to increase in the incoming years due to the continuous aging of the population. Europe was one of the largest markets of incontinence care products and devices in 2018, with a revenue of $ 5 Bn and 25% global market share in 2019. The total cost for UI treatments and related healthcare is $ 18 Bn per year.

TAG Therapeutics

An end to aging related diseases

Milan – Italy

Pharma **Aging-related diseases** **Senescence** **Rare diseases**

Founding year: to be incorporeted within 2021
Current stage: PoC using clinically-relevant preclinical models completed – TRL 3/4
IP: 2 patents (IFOM)
Looking for funding: € 2 M, 1 years, to complete pre-clinical activities; further 7 M to cover activities prior to IND filing.

TAG Therapeutics, business proposal from IFOM institute, developed Teleblock, a universal inhibitor of senescence with unprecedented specificity. Teloblock is an antisense oligonucleotide against an RNA produced at shortened or damaged telomeres – the trigger for most, if not all, the pathways leading to cellular senescence. Proof of concept was achieved and efficacy demonstrated in clinically-relevant animal models mimicking human diseases of old age (progeria, idiopathic pulmonary fibrosis and aplastic anaemia). Teloblock blocks cellular senescence at the source (the telomere), while all competitive approaches intervene downstream.

Context

As we grow old, senescent cells accumulate in our tissues and organs, which are unable to proliferate and function properly. Aging makes us vulnerable to several conditions related to chronic inflammation, neurodegeneration and immunological decline. During cell replication, telomeres undergo progressive shortening at every cell division and when they become critically short they are sensed as damaged DNA.
Short and damaged telomeres activate an alarm known as the DNA damage response (DDR) that triggers and maintains the senescence program. Cellular senescence limits tissue regeneration. Senescent cells accumulate in humans in several tissues with age and more so in patients of age-related diseases, releasing inflammatory cytokines/chemokines (SASP) leading to tissue inflammation and fibrosis.
Short or damage telomeres are associated with multiple severe age-related degenerative conditions, such as idiopathic pulmonary fibrosis, irradiation-induced lung fibrosis, aplastic anemia, chronic obstructive pulmonary disease, chronic kidney disease, neurodegeneration, liver cirrhosis, and atherosclerosis.

Value Proposition

The most effective way to eliminate diseases of aging is by blocking cellular senescence at the source, the telomere. TAG Therapeutics founders at IFOM have recently demonstrated that non-coding RNAs (DDRNAs) are generated upon transcription of the telomere when telomeres are short or damaged, fueling DDR activation. Using of sequence-specific antisense oligonucleotides (ASO) targeting telomeric DDRNAs, called telomeric ASO Teloblock, allows for the first time the inhibition of DDR selectively at the telomeres. The efficacy of Teleblock was demonstrated in clinically-relevant animal models mimicking human diseases of old age i.e progeria, idiopathic pulmonary fibrosis and aplastic anaemia).

Market overview

Idiopathic Pulmonary Fibrosis (IPF) affects approximately 3 M people worldwide. It is a chronic lung disease with progressive and irreversible decline in lung function, associated with severe complications. The current market size is about $ 2.7 Bn and expected to grow up to $ 3.6 Bn by 2029. Aplastic anemia(AA) is a fatal bone marrow disorder. Every year around 14.000 patients are diagnosed with AA in US, Europe, China and Japan. The current drug market size is around $ 4 Bn.

VERDI Technologies

AI for Personal Medicine

Sassari – Italy

Pharma | **Personalized medicine** | **Immunization vs cancer** | **AI-based**

Founding year: to be incorporated by 2021
Current stage: clinically validated prototype – TRL 5
IP: 1 patent in progress
Looking for funding: € 1 M, 2.5 years for PoC trial on iEpitope cocktails for specific viral pathologies.

VERDI - Viral Epitopes Ranked by Digital Intelligence - employs AI to develop personalized treatments to induce immune responses to destroy tumor cells. Since one vaccine does not fit all, VERDI is developing vaccination by peptides matched to the DNA and RNA signature of the individual patient and the tumor. Its proprietary cloud AI-based application exploits large data to ensure the safety and immunogenicity of the personal peptides. Multi-OMICS data collected from 50 breast cancer patients followed by the VERDI analysis allowed the identification of 100 peptides coding an epitope library. A pilot clinical trial will be conducted with 2.500 potential personal peptides produced for the individual patient from the epitope library according to the prescription of VERDI. That will allow to clinically validate the best personal peptides to be used to develop a breast cancer vaccine using mRNA technology.

Context

Alongside antibodies, the immune system produces a battalion of T-cells that can destroy the tumor cells in the body without attacking the healthy cells. These tumor-specific T-cell responses are complex and patient specific. Cancer is the most variable disease since each patient has a unique tumor that mutates in time. In addition, T-cells recognize different epitopes on the surface of the tumor. Therefore, successful immunizations against tumors require a personalized approach. Artificial Intelligence (AI) is essential to analyze the unique genomic signature of the tumor and the patient and to develop safe and effective multi-OMICS-matched personal vaccines.

Value Proposition

VERDI (Viral Epitopes Ranked by Digital Intelligence) is an AI based technology trained to develop tumor-specific personal peptides matching with the patient's OMICS data. Personal peptides most likely induce potent immune responses in the matching patient but are ineffective in another individual. VERDI will be used to develop personal peptides for the treatment of individuals with breast cancer. A pilot clinical trial is planned to be conducted with 2.500 potential personal peptides produced for the individual patient identified from the epitope library according to the prescription of VERDI. The goals will be to prove that personalized peptides designed by VERDI are safe and induce potent immune responses and to select a set of personalized peptides for the development of an mRNA vaccine for the prevention and treatment of breast cancer. This strategy not only mitigates the risk of cancer vaccine development and offers a companion diagnostic to predict likely vaccine responders but also offers a personalized medicine solution for immunization concomitant to all other likely curative treatment options.

Market overview

In 2020 9 million people died of cancer, more than of COVID-19 (3 million). Annually, 2 million women are diagnosed with breast cancer. Breast cancer therapeutics market is projected to reach $ 55 Bn by 2027 with a CAGR of 13%. There is a market potential for breast cancer immunizations that are used in addition, not instead of any likely effective therapy.

Viper
Vein Image Processing for Edge Rendering

Turin – Italy; https://viper.polito.it/

Medical devices | **Venous ultrasound** | **Image processing** | **Hydratation status**

Founding year: to be incorporated by 2021
Current stage: proof of concept prototype – TRL 4
IP: 1 patents
Looking for funding: € 0.7 M for clical trial and CE, 2 years.

Viper offers semi-automatic solution to support ultrasound (US) exams of cardiovascular system and to process data in real time. The first application prototyped by Viper concerns the study of hydration by US scan of inferior vena cava (IVC), a very common procedure performed on almost 10% of the accesses at the emergency department (2.4 M scans/y in Italy) and of support for other medical conditions evaluation. The Viper patented image-processing technology supports the physicians in real time non-invasive assessment of blood vessels size from US videos, providing a correct acquisition and processing of the US video, pointing out accurate, standardized, clear and precise outputs.

Context
Approximately 10% of patients who access the emergency department undergo an examination to assess hydration status by the ultrasound (US) study of inferior vena cava (IVC) pulsatility. There are two main procedures to perform this exam. One is a qualitative evaluation of the pusatility of the IVC, in which physicians examine US video procedure and make a qualitative binary evaluation of IVC (full or empty), according to respectively a low or high pulsatility of the vessel. This is the most common methodology used in emergency departments. The other procedure is more accurate and it consistsof the measurement of IVC diameter by M-mode, although it is still subjective (as it requires to place markers indicating maximum and minimum IVC diameter), operator-dependent, poor of information and too complex to be used in situations with high stress level such as in emergency departments. Main limitations of these procedures are the very low precision of the measurement and lack of efficiency in the process with loss of information which would be useful for patient's diagnosis and follow up.

Value Proposition
Viper is a smart plug-in solution based on a patented image-processing technology to support the physicians in the non-invasive assessment of blood vessels size from US video procedure. Two algorithms delineate automatically the insonated blood vessel after tracking and compensating its movements, either in long and short axis. The software can be installed in any PC with average performance. The rendering of the borders is provided in real time on the PC over the recorded echography and stable pulsatility indexes are provided immediately. The physicias will handle the same recording system now in use accessing to augmented information provided by the software. In order to transfer the video on the PC in real time, Viper offers also a plug and play frame grabber to be connected to the US machine, but other frame grabbers can be used. Veins bring a lot of information but their study is difficult and there is a low level of standardization. Viper standardizes the non-invasive measurement of IVC, allowing also not specialized practitioners to perform the US scan and a clear and accurate output to support decisions.

Market overview
Every year in Western Europe 50 M emergency and general medicine department ultrasound procedures are carried out regarding cardiovascular issues, 10% of which addressing volemic status assessment. The global clinical decision support system market is expected to reach $ 1.8 Bn by 2025 ($1.2 Bn in 2020) at a CAGR of 9.1%. The global cardiac imaging software market was projected to grow at a CAGR of 8% from 2021 to 2027 and estimated to reach $ 530 M by 2023.

Meet in Italy for Life Sciences 2021
StartUp Breeding 2021
Atlantis Pitching Arena
1st October 2021

MIT4LS organizers

MIT4LS is an initiative of the ALISEI National Technological Cluster for Life Sciences, and it groups together all the main organisations working for the promotion and growth of the life sciences sector in Italy (regional clusters, innovation agencies, local and national industrial associations). At international level it is supported by the Enterprise Europe Network - EEN (EEN promotes the internationalisation of European SMEs), that support the event since its first edition, with several of its 600 members.

For the 2021 edition, that will take place in Genova, the coordinating organizer is Liguria Digitale as managing body of Polo Ligure Scienze della Vita (the life sciences cluster of Liguria). More than 130 EEN members from several countries support the promotion and assistance of participants for MIT4LS2021.

MIT4LS2021 promoting and coordinating organisers:

MIT4LS2021 Organisers:

The list may grow further, as other organisations are interested to join. For the full and most updated list of 2021 organisers and sponsors have a look here:
https://meetinitalylifesciences.eu/en/partner/organisers/

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