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Startups & Tech Projects

This document gathers a number of dynamic, promising and ambitious startups and tech projects that populate the Italian Life Sciences ecosystem. The projects and the relative technologies have been grouped in the following categories:



Pharma & Biotech



Medical Devices



Digital Healthcare



Pharma & Biotech

ALDA srl

Bioindustry Park (1)

Biouniversa

Detoxizymes

EPI-C srl

Farmalabor srl

Institute of Genetics & Biophysics (1)

ReiThera

Ri.MED Foundation (1)

Takis



ALDA srl

www.alda-srl.com



ALDA-TEST is an experimental assay based on FRET proprietary microscopy technology. It is based on the use of patented probes for monitoring pathological relevant protein-protein interactions via super-resolution microscopy techniques. ALDA-TEST allows to measure the activation of cytokine receptors in the blood cells of patients with chronic inflammatory disorders. ALDA-TEST is exploitable both for research purposes on clinical samples and as a clinical diagnostic test, being crucial as companion diagnostic in inflammatory-based diseases. It has been proved to be effective in the research field, in collaboration with a Multinational Pharma Company.

Development Stage

TRL 6

Headquarters

Naples, Campania

Biouniversa

www.biouniversa.com



Biouniversa is developing an antibody able to interact and to neutralize the protein Bag3 that has been demonstrated to induce the development and the progression of pancreatic tumor. Several animal models of pancreatic tumors have shown that neutralizing Bag3 is sufficient to inhibit the progression of the tumor. Moreover, the antibody against Bag3 has been shown to be able to identify Bag3 from blood of patients with pancreatic cancer. Indeed, Biouniversa has created a in vitro diagnostic kit (ELISA to be still validated on large scale) able to detect Bag3 in early stage of cancer development.

Development Stage

Preclinical

Headquarters

Salerno, Campania

Bioindustry Park (1)

www.bioindustrypark.eu



Pre-clinical stage biotech company focused on the development of novel therapies for rare pulmonary diseases with high unmet medical needs. The product has a unique mechanism of action that blocks a protein-protein interaction of PI3K α increasing cAMP in the lungs significantly helping CF patients.

The pipeline also includes a proprietary molecule with promising results in pre-clinical models of Idiopathic Pulmonary Fibrosis and potential long-term use with COVID-19 patients. The start-up has a proprietary compound for the treatment of Cystic Fibrosis with pre-clinical data showing strong superiority vs. the current standard of care.

Development Stage

Preclinical

Headquarters

Turin, Piedmont

Detoxizymes

www.detoxizymes.com



Thermostable enzymes are produced and used for the detection and inactivation of nerve agents and the containment of the biofilm formation.

The proposed technology targets different markets: integrated systems for the detection and detoxification of nerve gases in the case of a terroristic act in closed and sensitive spaces; decontamination of pesticide residues from fruits and vegetables; removal of stock of obsolete pesticides from the third world countries; containment of biofilm formed by pathogenic microorganisms in water, food industrial plants, humans.

Development Stage

Prototyping

Headquarters

Naples, Campania



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EPI-C srl

www.epi-c.com



EPI-C is a 'disease-oriented', biotech drug discovery company, focused on molecules, toxicology and epigenetics for cancer therapy and prevention. Heterozygous MTHFR-C677T polymorphism represents a risk factor for thrombosis and CVDs. We propose an innovative pharmacologic alternative to prevention of genetic-based CVD predisposition. ISIDE11 is a SIRT1 activator able to rescue endothelial dysfunction reducing thrombogenicity. EPI-C has discovered a molecule able to activate SIRT1 and displaying activity as an anti-thrombotic agent in a genetic-based MTHFR mutant model.

Development Stage

Preclinical

Headquarters

Naples, Campania

IGB – CNR (1)

www.igb.cnr.it



Novel peptides and peptidomimetics as potent targeted agents for prevention and treatment of cell migration/invasion related diseases. The invention concerns linear and cyclic decapeptides for the treatment of diseases and pathological conditions associated with altered cellular motility, migration and adhesion, including angiogenesis, invasion, tumor metastases, ophthalmic and cardiovascular pathologies.

All the information about uPAcyclin biochemistry and activities of uPAcyclin in 3D cell cultures and in mouse models of tumor dissemination are available.

Development Stage

Preclinical

Headquarters

Naples, Campania

Farmalabor srl

www.farmalabor.it



Farmalabor is a leading Italian company in the research, preparation and distribution of raw materials for use in the manufacturing of pharmaceuticals, cosmetics and foodstuffs. Recent studies have shown that anti-retroviral drugs may have therapeutic effect on coronavirus. Unfortunately, anti-retroviral drugs formulations have a limited water solubility and they need a high percentage of solvents (alcohol and propylene glycol) which may cause long term side effects and liver damage. Farmalabor is working on the development of innovative galenic formulations capable of solubilizing anti-retroviral drugs in water.

Development Stage

TRL 4

Headquarters

Barletta, Apulia

ReiThera

www.reithera.com



ReiThera is a biotech company dedicated to the development, GMP manufacturing and clinical translation of genetic vaccines and medicinal products for advanced therapies. The company has recently developed a candidate vaccine against SARS-CoV-2 (GRAd-COV2) based on a novel and proprietary replication-defective simian (gorilla) adenoviral vector called GRAd encoding the full-length coronavirus spike protein. REI has strongly invested in its CDMO organization by expanding the existing GMP area and by acquiring state-of-the-art technologies including stirred-tank bioreactors supporting a working volume of 200L, 1000L and 2000L.

Development Stage

Phase II

Headquarters

Rome, Lazio



Ri.MED Foundation (1)

www.fondazionerimed.eu

Over-activation of the NLRP3 inflammasome has been associated with a state of chronic inflammation that underlies a wide range of chronic age-related diseases. Inhibition of NLRP3 is a promising strategy for the development of new treatments for inflammatory diseases. Several small molecule inhibitors have been identified but no compounds have reached the market yet. Herein, we propose a screening project aimed at discovering new chemical entities as potential selective NLRP3 inhibitors. Our multidisciplinary team owns the potential of taking the project further for a deeper investigation.

Development Stage

Design and synthesis of new chemotypes in progress

Headquarters

Palermo, Sicily

Takis srl

www.takisbiotech.it



COVID-eVax is a vaccine against COVID-19 based on a DNA plasmid encoding a portion of the Spike protein (called RBD), present on SARS-CoV-2 surface and key for viral infectivity. COVID-eVax is a “precision medicine vaccine” approach designed to induce a strong immune response while minimizing potential undesired effects. COVID-eVax was validated in pre-clinical settings with support of the National Institute for Infectious Diseases (INMI) Spallanzani in Italy and Ulm University in Germany. Data enabling the start of the Phase II part of the study are foreseen for August 2021. Phase III enabling data are foreseen to be available by the fall of 2021.

Development Stage

Phase I-II

Headquarters

Rome, Lazio



Medical Devices

Bioindustry Park (2)

Bioindustry Park (3)

Bioindustry Park (4)

CEINGE

Ri.MED Foundation (2)

Ri.MED Foundation (3)

Gelesis

*Institute of Genetics
& Biophysics (2)*

Ivis Technologies

NGN Healthcare

Pandhora srl

*University of Naples
"Federico II" (1)*

*University of Naples
"Federico II" (2)*



Bioindustry Park (2)

www.bioindustryark.eu



The start-up is committed to provide medical and technological innovations developing next generation devices for a safe and effective transcatheter treatment of the stenotic aortic native valve. A transcatheter aortic valve procedure to functionally restore stenotic aortic valves at optimal cost/benefit ratio and without implanting a new heart valve prosthesis could be the next generation of stenotic aortic valve procedures. The start-up is starting the clinical trial in April 2021 and it is in pre-clinical phase with the second product, a device capturing all embolic debris, directed towards the brain vessels and peripheral vascular districts may improve the TAVI procedure outcomes.

Development Stage

Phase I

Headquarters

Turin, Piedmont

Bioindustry Park (4)

www.bioindustryark.eu



A medical device company that designs, develops and commercializes innovative systems for robot-mediated rehabilitation and assistance. The company developed the first all-in-one and plug-and-play medical system supporting rehabilitation professionals in providing intensive treatments for neurological patients, even after hospital discharge. Through interactive and engaging games, designed according to the latest scientific evidences about neuroplasticity stimulation, the solution promotes active motor planning and generates adaptive force fields to provide assistance as needed

Development Stage

On EU and Asian markets

Headquarters

Turin, Piedmont

Bioindustry Park (3)

www.bioindustryark.eu



Started in November 2017 from 3 Biotechnologists interested in revolutionizing the world of personalized regenerative medicine.

An automated device creates a bioabsorbable patch combining patient's own blood with a special biopolymeric mixture. The patch acts like a second skin: reducing healing times by 50%, with an intrinsic antimicrobial activity, without scars and with exceptional aesthetic and functional results. Today sold in the veterinary market for animal wound care, the goal is to certify it for the treatment of human difficult to heal wounds, like bedsores or venous ulcers.

Development Stage

On the veterinary market

Headquarters

Turin, Piedmont

CEINGE Adv. Biotech

www.ceinge.unina.it



The proposed technology aims at providing an integrated system for blood processing in diagnostic and therapeutic devices and in drug testing. One of the key features is the small scale of the system, which makes it a potential candidate for home health care and point of care applications.

The main objective of the proposal is to take the lab prototype to the stage where it can be tested on blood samples in vitro. Depending on the outcome of this activity and the available funding, the next step will be to bring the device to the animal testing stage.

Development Stage

Prototyping

Headquarters

Naples, Campania



Ri.MED Foundation (2)

www.fondazionerimed.eu

The proposed technology addresses the limitations of current prosthetic devices for annuloplasty mitral repair. It allows to achieve an optimum annular dynamic with a circular band deformed to selectively align its flexible direction so as to mimic the physiological displacements. The simplicity of the design and manufacture process would result in a very economic solution, well superior to competing alternative due to its physiological 3-dimensional dynamics of the mitral annulus. Moreover, the device would be suitable for MIS implantation procedures and to serve as an ideal docking site for the implantation of transcatheter valve replacements

Development Stage

Proof of Concept

Headquarters

Palermo, Sicily

Gelesis

www.gelesis.com



A biotechnology company developing a novel category of therapies for GI-related chronic diseases. A spin-off from the University of Salento (Apulia), the company set-up its HQ in Boston (USA) whilst maintaining R&D activities in Lecce. Gelesis has developed a hydrogel platform technology to treat weight problems, obesity and chronic diseases related to the GI pathway. The proprietary approach is designed to act mechanically in the GI pathway to potentially alter the course of certain chronic diseases. The Gelesis platform technology allows for the design of specific hydrogels with different properties, that potentially may address different GI related indications.

Development Stage

*Main product received
FDA clearance*

Headquarters

*Boston, US
Lecce, Italy*

Ri.MED Foundation (3)

www.fondazionerimed.eu

Cardiovascular Disease is the #1 killer hitting millions of patients worldwide. Materials currently used to repair or replace parts of a diseased heart have huge limitations. Neolife has pioneered a unique processing, called Double Component Deposition (DCD), that produces polymeric scaffolds mimicking human living heart tissue (Biomimicry). Once implanted, it enables the body's natural healing process.

Neolife synthetic tissue remodels into native cardiac tissue that grows with the patient, is non-thrombogenic, does not require blood thinners, is calcification resistant, and has lifelong durability.

Development Stage

Preclinical

Headquarters

Palermo, Sicily

IGB – CNR (2)

www.igb.cnr.it



The uc.8+ Bladder cancer detection is a laboratory test intended to aid in the diagnosis of bladder cancer in an accurate, timely cost-effective and non-invasive manner. The purpose of this study is to: (i) evaluate the performance of uc.8+ Bladder cancer detection by qRT-PCR as an aid in the primary diagnosis of bladder cancer in patients presenting with haematuria and lower urinary tract symptoms with a suspicion of malignancy and (ii), compare it with the gold standard investigations flexible cystoscopy, imaging and biopsy. Currently, we obtained very promising results about its detection in the urine of BICa pts.

Development Stage

Preclinical

Headquarters

Naples, Campania



IvisTechnologies

www.ivistechnologies.com



iVis Technologies designs and manufactures a complete platform of medical devices for customized corneal surgery: the iVis Suite™ conceived to cover the entire 4D (Diagnosis-Design-Delivery-Debriefing) process for customized corneal surgery, allowing surgeons to “close the loop” from corneal diagnosis to surgical postop follow up. iVis Technologies is currently engaged in an extensive R&D project which aims to launch, in 2023, the 4D Suite™, conceived to guarantee full remote control of the entire corneal surgical process involving the Screening, Diagnosis, Treatment and Follow-up of corneal pathologies and refractive diseases.

Development Stage

TRL 7

Headquarters

Taranto, Apulia

Pandhora srl

www.pandhora.it



Bilateral Robotic Orthothesis with infrared proprioceptive stimulation for the intensive care of the functional locomotor apparatus (patented). Li-Walk allows the user to perform Robotic Neurorehabilitation through physical and perceptual stimuli, accelerating and maximizing the rehabilitation process and consists of a treadmill on which the user, supported by a dynamic weight lifting system, performs an assisted motion of physiological walking. Design and patenting already done, looking for investments for prototype realization and suitable certification acquisition.

Development Stage

TRL 5

Headquarters

Salerno, Campania

NGN Healthcare

www.ngnhealthcare.com



EatStop® is an innovative nutraceutical formulation for the physiological control of body weight. Combination of plant-based phytocomplexes exclusively based on bitter active ingredients, in gastro-resistant oral formulations, to reduce the sense of appetite. This project would provide the opportunity to formulate an innovative nutraceutical product characterized by a validated clinical efficacy and safety, by biology resolution mechanism, in comparison to the majority of similar food supplements used in the same therapeutical area.

Development Stage

Preclinical

Headquarters

Avellino, Campania

University of Naples (1)

www.unina.it



The future company intends to develop, produce and market a diagnostic kit (ObImmune kit) for the prevention, diagnosis and treatment of overweight and obesity based on the novel principle that common polygenic obesity recognizes also an immune-mediated origin, independent by a mere issue of metabolism and caloric intake. Thanks to the results obtained in the preliminary development phases we have decided to create a spin-off within the Federico II University of Naples employing a collaboration between Academia private institutions

Development Stage

Seed

Headquarters

Naples, Campania



University of Naples (2)

www.unina.it



Immunotherapy has drastically changed the therapeutic landscape in the oncology field. However, to date, therapeutic success remains confined to 30-40% of treated patients and with the onset of serious adverse side effects. In addition, some tumors show a total refractoriness to immunotherapy. Currently, no reliable biomarkers are available. We propose IPO as biomarker able to: identify patients who will respond to immunotherapy; follow the patients and monitor the success of the therapy; support diagnostic tools in sensing and defining the presence of tumors. Our proposal aims to realize an academic spin-off to start the industrial development of our kit.

Development Stage

Validated in 3 different cohorts of patients

Headquarters

Naples, Campania



Digital Healthcare

Bioindustry Park (5)

Bioindustry Park (6)

Bioindustry Park (7)

Bioindustry Park (8)

Complexdata srl

Ri.MED Foundation (4)

Ri.MED Foundation (5)

Ri.MED Foundation (6)

IamHero



Bioindustry Park (5)



www.bioindustrypark.eu

The start-up developed an AI based platform to transform gynecological medical ultrasound in objective, easy-to-read information with custom Artificial Intelligence to assist gynecologist in the early diagnosis of gynecological pathologies. The core product enables early diagnosis of Ovarian cancer through Ultrasound Scans. It is cloud based and AI-powered. It provides: a data-driven, objective, second opinion and is available at any time and allows 1st level gynecologists to improve their ability to detect Ovarian cancer (that is usually based on 2nd level oncologists experience).

Development Stage

CE mark in June 2021

Headquarters

Turin, Piedmont

Bioindustry Park (6)



www.bioindustrypark.eu

Start-up in social impact and ageing services, the first national digital portal in guidance, advising and search assistant solutions for families caregiver taking care of elderly people. The first Care Advisory digital system that helps families find tailor made care and care solutions, optimize time and money, improve work life balance and reduce the risk of stress. Throughout Italy, by telephone and video call. It provides a range of care advisory services to both individuals and business to business such as corporate welfare systems, insurance, health, employee training and coaching, focused on improving caregivers work-life balance and well-being

Development Stage

On the market

Headquarters

Turin, Piedmont

Bioindustry Park (7)



www.bioindustrypark.eu

The spin-off addresses a widespread need: balancing one's busy life with the care of a person who is not completely autonomous, is mostly an elderly, and who wishes to keep her/his independence. The solution uses the assisted person position and movement data combined with several proprietary Machine Learning and Artificial Intelligence algorithms to detect the main Activities of Daily Living, which are standard definitions of daily tasks used by geriatricians to assess how independent a person is. Instead of an occasional check-up, you can now have access to a daily report of trends to set up a custom care plan.

Development Stage

On the market

Headquarters

Turin, Piedmont

Bioindustry Park (8)



www.bioindustrypark.eu

A Benefit Company and an Innovative Start up that aims to enable the transition of health systems towards more advanced and patient centered models, more sustainable and resilient to health crisis. The company's innovation journey unfolds in the field of Digital Health and focuses on: i) optimizing the utilization of enterprise resources to reduce waste, latency and costs, and redirect resources to high-value business opportunities; ii) leveraging real-time patient event data, operational intelligence and predictive analytics necessary to transform workflows and business processes and capitalize on new opportunities to create value.

Development Stage

On the market

Headquarters

Turin, Piedmont



Complexdata srl

www.complexdata.it



The platform ARIADNE has been developed for triple negative breast cancer starting from transcriptome obtained from bioptic samples. The technology will be adapted to liquid biopsy. Moreover, in general ARIADNE can be extended to every kind of cancers. Complexdata is now adapting the platform to other strategic tumors such as lung and stomach. We are looking for strategic partnership that can help us to scale up and enter in new markets. In particular, we need to expand the platform to liquid biopsy, to reinforce and automatize infrastructure and to create awareness in oncologists.

Development Stage

TRL 6

Headquarters

Milan, Lombardy

Ri.MED Foundation (4)

www.fondazionerimed.eu

We propose the realization of a web platform useful to analyze the biological interactions involved in the outcome or the recovery from a disease. Specifically, we aim at considering interactions among proteins, RNA and small molecules. The study of complex diseases needs integrated approaches of data analysis, and here we aim to collect data from existing database and merge it with novel prediction tools designed to be adaptable to the disease the user is interested to. The integration of known biological interactions with the custom predicted ones could be specialized up to the single patient tissue behavior, promoting the realization of personalized therapies

Development Stage

Prototyping

Headquarters

Palermo, Sicily

Ri.MED Foundation (5)

www.fondazionerimed.eu

The proposed technology would assist the risk stratification of thrombosis and support the clinical planning. Thrombosis is a pathology caused by blood clots, and represents one the leading causes of mortality worldwide. Due to the great complexity of the phenomenon, analytical solutions of blood clotting process are almost never possible. This project aims at implementing an efficient and reliable computational platform, able of predicting thrombus formation, growth and its effects on blood flow in patient-specific framework.

Development Stage

Basic algorithms validated

Headquarters

Palermo, Sicily

Ri.MED Foundation (6)

www.fondazionerimed.eu

Development of AI algorithm to predict small molecules biological activity in cancer. Virtual screening, a first stage in drug discovery campaigns, often suffer from reliability issues due to both the algorithm used and the input structures encoders. The research group has been developing 1 D and 2 D CNN architectures to be used for biological activity prediction. The group is also moving towards the definition of a new encoder for molecular structures to be used as network input. Such an approach can be used for activity prediction, profiling and drug repurposing. The use of multiple targets has been demonstrated as a useful tool to assess target selectivity.

Development Stage

First network architectures released and tested

Headquarters

Palermo, Sicily



IamHero

www.iamhero.eu



IamHero srl is developing digital health solutions for the treatment of ADHD. The solution lies in an advanced therapeutic environment to be used alongside cognitive-behavioral therapy to enhance its effectiveness. The product developed consists of: three serious games based on the use of cutting-edge technologies, such as VR, motion-sensing equipment, biofeedback detectors; gamification platform with 3 minigames to continue therapy at home; therapy management platform to monitor the progress of the sessions, evaluate the achievement of goals and as a result customize the therapy

Development Stage

*Obtaining certification
and starting sales*

Headquarters

Naples, Campania

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