



## Backing visionary entrepreneurs

EIC funding and EIC Health and Biotech non-funding (strategic intelligence-based) support

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## **EIC part of EISMEA**



#### **EISMEA**: The European Innovation Council and SME Executive Agency

EIC Board & President appointed by the EC

-Pilot Advisory Board term ended (May 2021)

-A new Board is in place since Oct 2021.

-Selection of a full time President is underway (Open call, end of 2021)



#### Innovation EIC, Europe's most effective catalyst of breakthrough science into disruptive innovation

€10 bn programme to identify, develop and scale up breakthrough technologies and disruptive innovations in Europe

Unique in the world to combine research on emerging technologies with Accelerator for startups, SMEs and scaleups

EIC Fund largest VC deep-tech investor in Europe (over €3 bn)

Portfolio approach, Challenge Calls, Program Managers





# For advanced research to underpin breakthrough / game-changing technologies

Mainly open ("bottom up"), but also Pathfinder challenges (for emerging health, energy and digital technologies)

Mainly collaborative (3 or more partners)

Grants up to €3/4 Mt €3/4 million Management of portfolios of projects by Programme Managers



#### Pathfinder Open proposals evaluation scheme Applicant has the right to address evaluators' comments





## Pathfinder Challenge proposals evaluation scheme leading to the creation of portfolios



## Additional opportunities for Pathfinder projects



to receive additional **Ad hoc grants** (up to 3 per project or more if duly justified) with fixed amounts of up to €50,000 : a) for complementary activities to explore potential pathways to commercialization

b) for portfolio activities.

#### their beneficiaries

**Projects or** 

funded through EIC Pathfinder are eligible

to submit a proposal to the **EIC Transition** for transforming their research results into innovation opportunities;

to submit an EIC Accelerator proposal via the Fast Track scheme;

to receive free access to a wide range of **Business Acceleration Services** 





For transforming research results into innovation opportunities

New funding scheme to bridge gap between research phase (proof of concept) and innovation application

Mainly open ("bottom up"), but also Transition challenges (for medtech, energy storage)

Single applicants or small collaborations (max. 5 partners)

Grants up to 2.5M In first phase, only for follow up to results from EIC Pathfinder and ERC PoC





#### Eligibility time wise :

• Pathfinder projects and ERC Proof of Concept. Start date of the grant is more than 12 months before the date of the Transition call deadline and end date of the grant for the eligible project is less than 24 months from the date of the Transition call deadline

#### IP status:

• You do not have to be the owner of the IP or one of the original beneficiaries, but have the right to use the IP or know-how generated in the initial project.

### **EIC Accelerator**



# For startups & SMEs to develop and scale up innovations with high risk and high impact

For individual companies (startups, SMEs) Continuously open for applications (also from individuals intending to start a company and investors intend to support a company)

Mainly open but also Accelerator challenges in Green Deal, Strategic Digital & Health Technologies Mainly blended finance (grant + investment), but options for "grant only" and "grant first" (with investment follow up)

## EIC Accelerator: a four-step evaluation process





• Tell us your story with short application <u>at any time</u>

• You prepare a full application with your **business plan** 

• We will help you with a dedicated AI tool and free coaching

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You submit your full proposal at one of the regular cut-off dates
Your application will be assessed by expert evaluators matched to your field

• You pitch your innovation to a Jury of experienced investors/ entrepreneurs

• If selected, you will sign the grant and start due diligence for the equity

## **EIC Accelerator: Statistics Greece**



#### 2021:

• No Greek company can be found among the beneficiaries of the EIC/Horizon Europe Cut offs of June and October 2021!

#### 2014-2020:

 A total of 32 Greek companies have been funded throughout SME instrument phase 1, phase 2 and phase 2b (EIC Accelerator Pilot) with 28 out of them, to have received phase 1 (50k€); Total funding received since 2014 = 13 M€. EIC Programme Managers (EIC PMs): three key roles Council



Oversees a thematic sector in a cross-cutting manner EIC (Pathfinder→Transition → Accelerator).

Identifies S/T critical thematic areas, pre-select topics within these areas and validates the topics for the purpose of developing Challenge Calls

Manages sector-specific portfolios (a set of projects with shared perspectives) created on the basis of the outcome of Challenge Calls



## EIC Programme Managers: How they select areas Guiding principles

- Strategic areas selected for Challenges must provide sufficient evidence of their disruptive and innovation potential
- Selection should not be overly influenced by the existing areas bearing most of the projects in the EIC portfolio, in order to ensure that EIC remains open and closely follows the constantly evolving trends
- There has to be even limited recognizable innovative industry activity in the selected area, so we do not start entirely for scratch
- Areas of intense focus attracting ample funding (COVID, epidemics monitoring), operated by other EC DGs or Agencies, should be avoided for obvious reasons

## EIC Program Managers: How they pre-select topics



# EIC Programme Managers: How do they debate and validate topics











## **Strategic intelligence** EIC Health and biotech portfolio



Building strategic intelligence for EIC beneficiaries

How do we Select EIC challenges

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#### Why cell and gene Therapy? Challenges



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### Why cell and gene Therapy? Challenges in manufacturing



Despite the undeniable ability of viral vectors to deliver pay and despite the remarkable potential of this approach to treat a wide range of diseases, gene therapy manufacturing is being faced with serious challenges such as:

- Scalability
- Advanced analytics to maintain quality and meet regulatory requirements
- Cost effectiveness
- Difficulty in maintaining productivity
- Accessibility



#### EIC's response to CGT challenges: 1: EIC Pathfinder Challenge call in the Work Program 2021:

#### Expanding CAR-T cell therapies to solid tumors

Other than T cell Type effective Cell Therapies Development and Manufacturing of autologous and allogeneic CAR-T cells

New gene therapeutic approaches Improving gene delivery systems (viral and non-viral vectors) Improving cell and gene therapy manufacturing



# EIC's response to CGT challenges:

29 June 2021

The e-report for the cell and gene therapy workshop held last June, is now available on the EISMEA's website:

https://eic.ec.europa.eu/news/cell-andgene-therapy-first-eic-erc-workshoprecordings-and-presentations-availablenow-2021 en The e-report encompasses all presentations, 3 recordings, a Statement by the two Chairs and a summary Statement:

Statement from the EIC-ERC contact group co-chairs (europa.eu)

Statement from EIC Programme Manager Iordanis Arzimanoglou (europa.eu)

#### Selected examples of EIC-Pathfinder projects within the Health and Biotech portfolio



## 1. EVs for drug delivery in specific tissues (project: Ves4Us)

- Extracellular vesicles (EVs) are cell-derived, membranous particles that can transfer proteins and RNAs
- EVs as drug delivery vehicle are: i) well tolerated in the body, ii) have long circulating half-life, iii) are internalised by recipient cells and iv) are able of crossing the BBB

#### The aims of this project are to develop:

- a) EVs derived from natural source for drug delivery in a tissue-specific manner (brain, lung, skin, dendritic or tumor cells..) and
- b) A new platform for the efficient production and functionalisation of EVs (current challenges), which would enable for their exploitation as tailormade products



## Selected examples of EIC Pathfinder projects within the Health and Biotech portfolio



#### 2. Modelling pancreatic diseases with bioprinting (project: Pan3DP)

Developing therapies for pancreatic diseases, such as diabetes and pancreatic cancer, is hampered by a limited access to pancreatic tissue in vivo. Bioprinted (3D) tissue models, can mimic the native organ and, therefore, be used for modeling the pancreatic diseases in pharmaceutical testing.

#### The aims of this project are to:

- a) Expand and unify the knowledge of 3D in vivo architecture of the developing pancreas
- b) Develop technology that would effectively support vascularization in bioprinted pancreatic tissue units and
- c) Establish conditions for in vitro differentiation and maturation of the bioprinted pancreatic tissue



#### Selected examples of EIC Pathfinder projects within the Health and Biotech portfolio



### 3. A Synthetic Biology approach for mRNA (project: NEWmRNA)

- mRNA is a major actor in the expression of cellular information. Its diverse role encompasses major life science applications including vaccination via mRNA-based gene therapy and diagnostics to control pests in agriculture.
- A novel cellular assay is proposed to rapidly assess the impact of non-canonical forms of mRNA on translation and cellular signaling, by reengineering enzymatic mRNA synthesis via T7 RNA polymerase
- Two specific aims of this project, which clearly constitutes a synthetic biology approach, are to:

   a) Redraw the chemical map of the translation of mRNAs in human cells, and
   b) Transform biological mass production of

mRNAs by introducing crucial steps to its industrial-scale production of mRNA



#### Selected examples of EIC Pathfinder projects within the Health and Biotech portfolio



## 4. Changing current industrial biotransformations catalyzed by enzymes (*project: <u>Hotzymes</u>*)

- Enzymes catalyze complex biotransformations. This project proposes a new concept to exert functional control over different enzymes using magnetic heating
- To accomplish this, there is a need to design and fabricate a new generation of magnetic bioreactors suitable to Biocatalysis
- From high-cost to low-cost biopharmaceuticals



The main aim of this project is to contribute to the change of the current industrial biotransformation process with uncoordinated enzyme function, sequential reactions and disposable bioprocesses into a coordinated enzyme function, concurrent reactions and recyclable bioprocesses (game-changing?)

#### Selected examples of EIC Pathfinder projects within the Health and Biotech portfolio



## 5. A platform for selection, expansion and training of T cells for solid Tumor adaptive cell therapy (*project: INCITE*)

Adoptive Cell Therapy with engineered T cells (TCR-transgenic and CAR-T cells) has indeed demonstrated success in the treatment of patients affected by leukemias, but is much less effective against lymphomas and solid tumors. One likely explanation is that we do not educate the right type of T cells. The T cells considered to be the gold standard for tumor therapy, but the proper and safe way to generate these fit T cells for clinical purposes is still an unresolved matter

The aim of this project is to engineer a tailored micro-environment (using a novel 3D microfabrication technology), that will be used for T cell education, in order to generate the fittest anti-tumor T cells for advanced adoptive T cell therapy



lymphorganoids for in vivo applications showing accumulation of antigen-specific T cells into newly developed immune niches

#### Health and Biotech Pathfinder portfolio Cancer Categories





#### Health & Biotechnology sector/Portfolio Pathfinder Thematic Areas/Categories



**PROJECTS PER CATEGORY** 

	Disease Modelling/ Regenerative Medicine: 10 (Bone, Imflammation and	Biopharmaceutical Processing and	Infectious Disease Diagnostics: 6
	Neurological)	Antibody Platforms: 8	
Cancer Diagnostics,	Synthetic Biology, Synthetic		Cell and Gene Therapy, RNA therapies, and Single cell_Spatial approaches: 5
Modelling and	Genomic and Systems	Extracellular vesicles:	Industrial
treatment: 11	Biology: 9	7	Biotechnology: 2