

## **Smart and multifunctional biomaterials for health innovations (RIA)**

TOPIC ID: HORIZON-CL4-2022-RESILIENCE-01-13

Deadline date: **30 March 2022 17:00:00 Brussels time**

Expected EU contribution per project: **3-5 M EUR**

Number of projects expected to be funded: **3**

### **Scope:**

Multifunctional biomaterials play a major part in shaping the future of Advanced Therapies and Medical Devices. Health applications may include but are not limited to tissue engineering, artificial organs, implants, bioprinting platforms, microfluidics, bioactive scaffolds, wearable and implantable devices, in-vitro diagnostics etc.

Projects funded under this topic should further:

- Develop and/or validate specific multifunctional biomaterials or micro systems for use in an eventual advanced therapy, medicinal product or medical device;
- Preclinical regulatory affairs as well as manufacturing processes would also need to be addressed, including up-scaling and good manufacturing practice (GMP);
- Pay special attention to the needs of Small and Medium-Sized Enterprises (SMEs) as well as to the ultimate clinical applications of these biomaterials;
- Present a solid economical evaluation of possible savings, together with patient benefits.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic is open for international cooperation where the EU has reciprocal benefit, while excluding industrial competitors from countries where the safeguarding of IPRs cannot be guaranteed.

### **Specific Topic Conditions**

Activities are expected to start at TRL 3 and achieve TRL 5 by the end of the project – see General Annex B.

### **Cross-cutting Priorities:**

#### **International Cooperation**

### **Expected Outcome:**

Multi-functional biomaterials are capable, by virtue of their own material ingredients or surface properties, of achieving several biological responses simultaneously. They may also help to dampen those that are undesirable such as inflammation, infection, corrosion and issues related to bio and immune compatibility, while taking into account the specificities due to sex, race and age.

Projects are expected to contribute to the following outcomes:

- Offer solutions through the development of multifunctional biomaterials to address and mitigate multiple bottlenecks in response to unmet clinical needs;
- Provide improved biocompatibility, biospecificity and longevity of medical devices or if relevant, improved bioactivity and/or biodegradability; physiological and biomechanical constraints and implications should also be considered.
- Show that the regulatory and IPR strategies are compatible with the overall research objectives.