Call for proposals

ReGEN Biomedical Developmental Program

Dynamic Suspension-Based Expansion of Human Cells for Scalable Regenerative Medicine Manufacturing

"Scalable Expansion of Human Cells"

Details

Submission Deadline:	May 4th 2026
Funding Details:	This specific call allows for projects up to 50.000 euro. Only 1 project will be awarded funding.
Project duration:	Projects needs to be finalized in 3 months after granting.
Eligibility Criteria:	Please refer to the general call for proposals guideline.
Application Process:	Please refer to the general call for proposals guideline.

1. Background and Rationale

ReGEN Biomedical is developing an open, scalable manufacturing infrastructure for regenerative medicine, with a strong focus on robust, reproducible, and cost-effective production of human cells and tissues. A key challenge across the field is the transition from static or low-throughput culture systems to dynamic, controlled suspension-based processes that are compatible with scale-up, automation, and future GMP translation.

Dynamic culture systems (e.g. stirred, perfused, or otherwise actively mixed environments) offer significant potential advantages over static culture, including improved mass transfer, better process control, and higher volumetric productivity. However, the optimal integration of cell type, culture medium, feeding strategy, and hydrodynamic conditions remains insufficiently understood and validated for many clinically and industrially relevant cell types.

Through this call, ReGEN Biomedical invites project proposals that address these challenges by developing, optimizing, and benchmarking dynamic suspension-based expansion processes for human cells relevant to regenerative medicine and advanced cell-based models.

2. Objective of the Call

The objective of this call is to support projects that:

- Establish or improve dynamic suspension culture processes for human cells with a focus on bioreactor protocols that have shown to be compatible with organoids, microtissues suspension cultures;
- Generate reproducible, scalable expansion protocols suitable for translation toward automated or semi-automated manufacturing with a stepwise approach but scalability to liter volume cultures in mind;

- Contribute to ReGEN Biomedical's broader roadmap toward automated, high-quality, and cost-effective regenerative medicine manufacturing.

Projects should focus on process development and experimental validation, rather than routine optimization or purely exploratory biology.

3. Scope of Eligible Projects

Projects submitted under this call should fall within industrial research and/or experimental development and may include, but are not limited to, the following activities:

- Development and optimization of dynamic suspension culture protocols for human cells (e.g. pluripotent stem cells, progenitors, microtissues, organoids, or other relevant cell systems);
- Investigation of key process parameters such as:
  - Seeding density and aggregation strategy
  - Hydrodynamic conditions (e.g. mixing, stirring, shear exposure)
  - Feeding and medium exchange regimes
  - Passage timing and culture duration
- Assessment of cell quality and performance, such as growth kinetics, viability, phenotype maintenance, differentiation potential, or functional readouts relevant to the intended application;
- Evaluation of process robustness, scalability, and compatibility with future automation or GMP translation.

Projects may use commercially available or custom-developed culture media, devices, and bioreactor systems, provided their selection is well-justified and meet a scalability roadmap requirement.

4. Out of Scope

The following are explicitly out of scope for this call:

- Purely descriptive or exploratory biological studies without a clear process-development objective;
- Routine scale-up of already fully established and validated manufacturing processes;
- Clinical studies or activities requiring clinical-grade manufacturing;
- Projects without a clear link to scalable, suspension-based culture concepts.

5. Expected Outcomes

At the end of the project, applicants are expected to deliver:

- A validated dynamic suspension culture protocol, including clearly defined operating parameters for human cells;
- Quantitative data demonstrating performance and reproducibility;

- A structured comparison with relevant reference culture systems;
- Clear conclusions on scalability, limitations, and next development steps;
- Documentation suitable for internal decision-making and potential follow-up development within the ReGEN Biomedical infrastructure.

6. Who Can Apply

Applications are welcome from:

- Small, medium-sized, and large enterprises active in cell therapy, regenerative medicine, bioprocessing, or enabling technologies;
- Consortia of companies and/or research organizations, provided at least one industrial partner is included;
- Applicants must demonstrate relevant expertise in human cell culture and experimental process development.

Projects should make use of ReGEN Biomedical facilities and expertise where relevant, or clearly justify the use of external infrastructure.

7. Evaluation Criteria

Proposals will be evaluated based on:

- Alignment with the objective and scope of this call;
- Scientific and technical quality of the proposed approach;
- Feasibility and robustness of the experimental plan;
- Relevance for scalable regenerative medicine manufacturing;
- Quality of benchmarking and validation strategy;
- Expertise and complementarity of the project team;
- Potential for follow-up development within the ReGEN Biomedical ecosystem.
- Cost effectiveness and timelines
- Feasibility to deliver and conditionality of the commitment
- Technological potential;
- Innovation;
- Business potential;
- Potential economic and societal impact.

8. Contact Information:

To acquire more details on the project and its specifics please reach out to projects@regenbiomedical.com.

9. Applications

Applications for the ReGEN Biomedical Developmental Program may be submitted at any time during the call period. The full application comprises the following:

- a signed application form including a completed project plan, including appendices;
- project budget;
- declaration of no financial difficulties;
- relevant support letters (optional).

Projects must fit within the scope of the facilities of ReGEN Biomedical and when possible make use of pilot factory facilities (ReGEN Biomedical, SBMC, NEXCTGEN and ICAT). ReGEN Biomedical will appoint a project supervisor who will explore opportunities with applicants during the drafting period. If there are compelling arguments, facilities may be used elsewhere. The cost of using ReGEN Biomedical facilities and/or expertise is made available at market rates and is budgeted as third-party costs.

Templates for the application form including project plan and project budget can be downloaded from www.regenbiomedical.com.

The full application can be sent to projects@regenbiomedical.com