

## #08 Organoid and immuno-oncology coculture assay for indications with poor in vivo predictivity or high need for animal use reduction



### EXPECTED DELIVERABLE

*Indicative duration: 6 - 9 months*

Development of human tumor organoid models and organoid immune co culture systems to address oncology indications where in vivo models are poorly predictive, animal use is high and reduction is a priority, immune-tumor interactions are not faithfully recapitulated in animals, or the tumor microenvironment is too complex to model with traditional in vivo approaches.

**Target indications may include (not exhaustive, to be updated):**

- Neuroendocrine tumors (NETs) – poor immunocompetent mouse models.
- Pancreatic cancer – immunosuppressive stroma, limited translatability of mouse models.
- Rare cancers– lack of validated immuno competent in vivo models.
- Bone tumors / sarcomas – immune stroma interactions difficult to reproduce in vivo.
- Tumor-immune suppression models (e.g., M2 macrophage rich tumors; Treg dominated tumors).

**Deliverables include:**

- Establishment or optimization of tumoroid cultures alone or combined with: Autologous immune cells, Peripheral blood mononuclear cells (PBMCs), Engineered immune effectors (e.g., activated T cells, NK cells, macrophages), Stromal components (CAF, fibroblasts, endothelial cells),
- Development of immunocompetent organoid assays to measure: cytotoxic activity, immune cell infiltration, cytokine/chemokine release, tumor escape mechanisms
- Pilot evaluation using Ipsen test and reference compounds, including immunomodulatory agents or compounds impacting tumor microenvironment.

Preference will be given to partners experienced in complex co-culture systems, especially tumor-immune interactions and low-passage patient-derived materials. Access to 3D imaging, microfluidic or OoC platforms is a plus. Partners must ensure ethical sourcing of human tissues and provide documentation when required.



### LONG-TERM COLLABORATION POTENTIAL

*Subject to scientific and strategic alignment*

This challenge aligns with Ipsen's strategy to develop human relevant, translationally predictive, and animal sparing models, especially for oncology programs where: animal models lack immune relevance, the tumor-immune microenvironment cannot be recapitulated in vivo, rare tumors lack validated preclinical models, the number of animals required for immuno-oncology assays is high and murine immunity does not reflect human immuno-biology.

If successful, the platform could support:







- Early go/no go decisions in difficult oncology indications.
- Mechanistic de risking of new molecules targeting tumor immunity or the tumor microenvironment.
- Development of organoid + immune co culture banks representing multiple tumor types.
- Creation of standardized immunocompetent assays to replace or drastically reduce in vivo immuno - onco studies.

Ipsen would be strongly interested in a long-term collaboration to scale the platform to multiple cancer types and immune contexts.



### CANDIDATE SELECTION

*Initial eligibility check by MPR. Final selection by the challenge provider based on fit, relevance, readiness and innovation potential*

	Completion of EDUCATE	Core Module
	Company status	SME under EU criteria
	Maximum number of supported companies	1 - 3
	Minimum required TRL	5-6 minimum (functional models established with preliminary validation data)
	Confidentiality: NDA/ CDA required	Yes
	Geographic area	SME from across EU are welcome. SMEs from Interreg NWE are prioritized, particularly partner regions

- Demonstrated expertise in tumor organoids and ideally immune-tumor co cultures.
- Capacity to incorporate immune cells (T, NK, macrophages) in functional assays.
- Expertise in 3D imaging and immune functional phenotyping.
- Ability to work with stroma rich or difficult to culture tumors
- Track record in collaborations with industry.



### APPLICATION

Application directly via the STEP4NAMs Moodle platform



<https://step4nams.moodlecloud.com/>



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### SUPPORT



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