

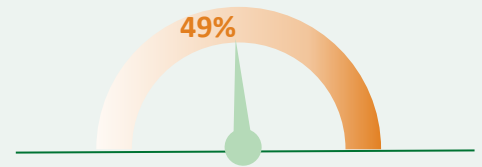
Highlights in 2025

Using RNA therapy to treat ileal Crohn's Disease

2025 at a glance

- ✓ 12 deliverables submitted
- ✓ 10 milestones achieved
- ✓ 1 in-person General Assembly (Uppsala, June 2025)
- ✓ 3 peer-reviewed scientific publications published
- ✓ Multiple conference presentations and workshops
- ✓ Patient-focused training materials
- ✓ 3 GENEGUT seminars held

43 Total deliverables



WP1

- ✓ Optimised amino-polyester and cyclodextrin RNA nanoparticles
- ✓ PEGylation strategies successfully reduced particle size and improved formulation consistency
- ✓ Lead formulations identified for both siRNA and mRNA delivery

WP2

- ✓ Benchmarked oral RNA delivery approaches for intestinal targeting
- ✓ Patient-derived apical out organoids established and characterised for healthy and diseased conditions, initial work on nanoparticle uptake ongoing

WP3

- ✓ Development of a bilayer hard capsule
- ✓ Patent filed protecting the capsule formulation
- ✓ Demonstrated delayed and more distal release compared with Enprotect® benchmark

WP4

- ✓ Delivered patient-facing training and engagement materials
- ✓ 3D multicellular models of healthy vs. diseased intestine established and characterised, initial work on nanoparticle uptake ongoing

WP5

- ✓ Mapping of regulatory pathways for oral RNA therapeutics in IBD
- ✓ Health economic modelling initiated
- ✓ Surveys designed with clinicians & patient organisations to assess acceptability of oral RNA therapies

WP6

- ✓ Interim Impact Report II
- ✓ Conferences & publications

WP7

- ✓ Continuous project monitoring
- ✓ RP2 submitted

Collaboration

The GENEGUT consortium maintained strong scientific collaboration throughout 2025, which ensured regular alignment across work packages and accelerated joint decision-making. The 7th GA meeting hosted in Uppsala in June 2025 brought partners together in person to review progress and coordinate next steps.



Externally, GENEGUT expanded its scientific exchange and visibility through its 2025 seminar series, combining two public events and one closed, consortium-focused session: a closed webinar (20 March 2025) led by Dr Driton Vllasaliu on milk extracellular vesicle delivery systems; a public webinar (5 June 2025), "Designing solutions for overcoming barriers to gastrointestinal mRNA delivery", featuring Dr Ameya Kirtane (around 30 participants); and a further public seminar featuring Professor Garret FitzGerald (University of Pennsylvania) presenting on building capacity in translational science-

Dissemination

Publications

Four new GENEGUT publications were published in peer-reviewed journals:

[Scatter-Free UV-Visible Spectroscopy for Accurate and Precise RNA Quantification in Complex RNA Nanoparticle Formulations](#)

[Next generation capsules: emerging technologies in capsule fabrication and targeted oral drug delivery.](#)

[Establishment of a 3D multi-layered in vitro model of inflammatory bowel disease.](#)

Curious what our science means in everyday terms? Our [From Lab to Life](#) blog breaks down complex research into easy-to-read insights.



[Evaluating Drug Absorption from Enteric Capsules in Pigs: Impact of Capsule Size on Gastric Emptying](#)



Training

On 24 April 2025, IFCCA launched the Horizon Europe IFCCA Academy with the first module, developed in collaboration with GENEGUT. It introduces RNA-based therapies through a video lecture by Prof. Cairtriona O'Driscoll. It is aimed at empowering adult IFCCA community members to engage in advocacy and gain scientific literacy around GENEGUT's therapeutic innovation. The course was met with great enthusiasm from many of the 19 participants, who especially appreciated the clarity, relevance and friendly tone of the content. More modules are planned for release.



Conferences

The participation of the GENEGUT partners in various conferences has provided valuable exposure and has significantly contributed to the visibility of the project. The project's participation in oral and poster sessions allowed it to effectively showcase its innovative work, reaching thousands of conference attendees. The PhD students' contributions, such as their poster presentations at major conferences, enhanced the project's representation and influence within the academic and pharmaceutical research communities.



Coming soon

Final deliverables and milestones

GENEGUT cluster event and conference participation

Additional publications in preparation

GENEGUT seminars and patient stories