Eighteen international pre-clinical therapy projects selected under ERDERA's first Joint Transnational Call will accelerate treatment options for people living with rare diseases across Europe and beyond

ERDERA announces first Joint Transnational Call 2025 portfolio of preclinical therapy projects for rare diseases

ERDERA (European Rare Diseases Research Alliance) has announced the 18 multinational projects selected under its first Joint Transnational Call (JTC 2025) on "Preclinical therapy studies for rare diseases using small molecules and biologicals."

From 161 initial project proposals, 48 were invited to submit a full application. Following a second evaluation, 18 projects were selected for funding, with a combined budget of approximately €29 million.

These transnational consortia are supported by 29 national and regional funding organisations from 23 countries and co-funded by the European Commission.

A diverse portfolio of pre-clinical therapy studies

The selected projects portfolio covers a wide spectrum of severe and often life limiting rare conditions, from early onset epilepsies and neurodevelopmental disorders to rare cardiomyopathies, immune diseases and fibrotic lung disease.

Each project will generate robust pre-clinical evidence to prepare future clinical trials, with the shared goal of delivering safer, more effective therapies for people living with a rare disease.

Under JTC 2025, selected consortia must address at least two of the call's core aims, such as developing novel therapies in a preclinical setting, creating and validating predictive biomarkers, replicating findings, or delivering preclinical proof of concept for therapy readiness. The funded projects collectively span all these aims.

Click here for more detailed information on each of them.

Neurodevelopmental disorders

VALUEKCNQ repurposes the Kv7 channel opener JNJ37822681 as a potential treatment for KCNQ related developmental and epileptic encephalopathies, with possible extension to related developmental and epileptic encephalopathies where Kv7 channels are implicated, such as Dravet syndrome. The consortium will generate preclinical evidence on efficacy and safety and propose a clinical testing strategy that incorporates patient and patient organisation perspectives.

iSNARE tackles SNAREopathies, a group of rare neurodevelopmental disorders caused by mutations in genes that drive synaptic secretion, using patient derived iPSC neurons and available SNAREopathy mouse models. It will systematically test and compare small molecule, antisense oligonucleotide and in silico designed candidate therapies within a standardised, multiphase preclinical pipeline.

HypoGluTx focuses on rare neurodevelopmental disorders caused by de novo mutations in genes critical for glutamatergic synapse function, such as STXBP1, GRIN2B, CACNG2 and SHANK3. Using patient derived neuronal cultures and genetically engineered mouse models, it will define converging synaptic and molecular alterations and assess targeted drug repurposing strategies as a cross disease therapeutic platform.

GRINTREAT develops biologic therapies for GRIN disorders, life threatening neurodevelopmental diseases caused by variants in NMDA receptor genes. The consortium will test nanobodies targeting metabotropic glutamate receptors in multiple GRIN mouse models and use shared outcome measures and biomarkers that could be translated into future clinical trials.

MT2ASD tests COS01, a novel selective melatonin MT2 receptor agonist, in mouse models of Fragile X syndrome and Phelan McDermid syndrome. Researchers will characterise sleep and autism spectrum like phenotypes, investigate how COS01 modulates neuronal circuits and molecular pathways, and develop a formulation and dossier to support future first in human studies.

Mitochondrial and metabolic disorders

SynLeigh develops synergistic treatment approaches for Leigh syndrome spectrum disorders using repurposed drugs Sildenafil and Cannabidiol, both with orphan drug designation. By combining small and large animal models, organs on chip, brain organoids and multi-omics integration, the team will determine genotype specific responses and build a preclinical roadmap towards clinical trials in Leigh syndrome and possibly other primary mitochondrial diseases.

TREATMAMOPATHY advances SIT3060, a potent and selective sigma1 receptor agonist, as a candidate therapy for Wolfram syndrome and Charcot Marie Tooth disease type 2A. The project will confirm efficacy in relevant rodent models, delineate its mode of action at mitochondria associated ER membranes and consolidate ADME toxicity data to support progression to clinical trials.

RADICALCDG develops therapies for several congenital disorders of glycosylation through drug repurposing, pathophysiology driven drug development and innovative drug delivery approaches. In parallel, the project strengthens a pan-European CDG network and formal partnerships with patient organisations to improve inclusion and access to credible, up to date information.

CHAMPION performs compound hit-to-lead analysis for Multiple Sulfatase Deficiency, a devastating lysosomal disorder of childhood. The consortium will validate 56 hit compounds in vitro and in vivo, generate ADME and preclinical pharmacokinetic/pharmacodynamic data, and identify the most promising candidates and druggable targets for future therapy development in MSD and related sulfatase and lysosomal disorders.

Hearing and sensory disorders

TREATDFNA9 advances antisense oligonucleotide therapy for DFNA9, a rare adult-onset autosomal dominant sensorineural hearing loss, by selectively targeting the mutant *COCH* transcript. The consortium will study molecular efficacy and pharmacokinetics in preclinical models, define therapeutic outcome measures and establish DFNA9 prevalence across Europe to support future clinical translation.

Bone, connective tissue and glycosylation disorders

PROOF repurposes RAVICTI (4-phenylbutyrate), an approved ammonia scavenger for urea cycle disorders, as a potential chaperone therapy for osteogenesis imperfecta. Using osteogenesis imperfecta mouse models and advanced human 2D and 3D cell culture systems, it will assess effects on collagen I secretion, cellular homeostasis and bone properties, and work with partners to accelerate translation towards a phase II clinical trial.

Kidney and liver diseases

ALP-RARE establishes a pre-clinical target validation and therapy development pipeline for Alport spectrum disorders, combining standard-of-care with candidate therapies such as 4-PBA, finerenone and A1M-based peptides. Multicentre pre-clinical randomised controlled trials, patient-derived kidney models and biomarker work will identify effective combinations and surrogate endpoints to support future human studies.

ASCENT-PSC builds an atlas and pre-clinical model platform for Primary Sclerosing Cholangitis, a rare liver disease currently without approved medical therapies other than transplantation. By integrating genomic, transcriptomic and proteomic data with precision-cut liver slices, human liver organoids and microbiome-modified mouse models, the consortium will identify and functionally test promising therapeutic targets.

Cardiovascular and lung disorders

TREATYNG reconceptualises arrhythmogenic cardiomyopathy as a disorder affecting all cardiac cell types and tests whether targeting the sympathetic co-transmitter neuropeptide-Y can prevent disease progression. Through integrated in silico, molecular, cellular, in vivo and human cell-based studies, it aims to reposition NPY-targeting agents, discover novel therapeutic targets and develop prognostic biomarkers.

INALOX-IPF develops an inhaled formulation of aloxistatin (E64d) as a potential antifibrotic treatment for idiopathic pulmonary fibrosis. The consortium will

demonstrate efficacy in multiple complementary fibrosis models, elucidate mechanisms of action and pharmacology, and assemble the pre-clinical evidence package needed to advance inhaled aloxistatin towards phase IIa clinical trials.

Immune and haematological diseases

IMMUNE-AI develops and validates an AI-integrated multi-omics algorithm to optimise therapy selection for Primary Immune Regulatory Disorders. Multi-layer genomic and functional data from well-characterised cohorts will be linked to treatment responses, creating a biologically grounded, biomarker-driven framework to move from empirical trial-and-error prescribing towards precision medicine.

CDKure-DBA optimises CDK8/19 kinase inhibitors as targeted therapies for Diamond-Blackfan anaemia, a ribosomopathy causing severe red-cell failure. Using advanced computational drug design, medicinal chemistry, patient-derived cells and in vivo models, the project seeks to deliver a pre-clinical candidate that restores erythropoiesis and to define predictive biomarkers of response.

T-CARE investigates T-cell-directed therapies for autoimmune limbic encephalitis and Rasmussen's encephalitis using validated rodent models of T-cell-mediated epilepsy. It will test non-mitogenic, non-depleting anti-CD3 monoclonal antibodies in preventive and therapeutic settings across three experimental models, generating robust data to support future proof-of-concept clinical trials.

Collaboration, data and readiness across ERDERA hubs

Many of these projects will share preclinical data, models and biomarkers across borders, and several explicitly plan multicentre preclinical randomised trials or integrated pipelines that can later be reused for additional candidates. Patient organisations are codesigning protocols, advising on outcomes that matter in daily life and contributing to trial readiness activities, in line with ERDERA's emphasis on meaningful patient partnerships.

The projects are expected to connect closely with ERDERA's Clinical Research Network and Data Services Hub, supporting harmonised outcome measures, data sharing and future use of the ERDERA Virtual Platform. This alignment should increase the likelihood that promising candidates can move efficiently from laboratory to early phase clinical studies.

They also hold the potential to draw on ERDERA's Expertise Services Hub and Accelerator Hub, which provide access to multidisciplinary expertise, mentoring and innovation support to improve project design and execution, and help scale up promising results towards real-world application and investment readiness.

Looking ahead: Joint Transnational Call 2026 now open

Building on the momentum of JTC 2025, ERDERA launched its Joint Transnational Call 2026 on 10 December, focusing on "Resolving unsolved cases in rare genetic and non-genetic diseases".

The call will support multinational consortia working to provide diagnostic clarity for people living with undiagnosed or complex rare diseases, using functional genomics, multi-omics, advanced bioinformatics and artificial intelligence, and integrated clinical and environmental data.

An information webinar for potential applicants will take place on 16 December 2025, 15:00–17:00 CET.

A clear path ahead

By investing in this first generation of ERDERA Joint Transnational Call projects, funding organisations across Europe and partner countries are building on almost 20 years of coordinated rare disease funding, which has systematically launched Calls since 2006, first through E-Rare and subsequently via ERDERA's predecessor, the European Joint Programme on Rare Diseases (EJP RD).

Together with the 2026 call on resolving unsolved cases, these projects strengthen ERDERA's role as a European hub for rare disease research funding, clinical research and data-driven innovation, working with and for people living with a rare disease and their communities.

Media Resources Available

- ERDERA Joint Transnational Call 2025 webpage with detailed information
- ERDERA Media Hub
- ERDERA Joint Transnational Call 2026 Media Kit
- Comms@erdera.org