

Model Matchmaking via the Rare Diseases Models & Mechanisms Network (RDMM-Europe)

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Solve-RD - Solving the Unsolved Rare Diseases

is a research project funded by the European Commission with the aim to solve large numbers of rare diseases (RD), for which a molecular cause is not known yet. Solve-RD follows three main approaches:

Identifying genetic causes in patients without diagnosis | Validating novel genes

Contribution of samples from unsolved cases & family members

19,000 datasets



50 Seeding Grants

Validate novel genes & investigate disease mechanisms using model organisms



Whole Genome Sequencing (short- & long-read)
RNA Sequencing (short- & long-read)
Deep Exome Sequencing
Epigenomes
Metabolomes
Proteomes

6,000 analysis slots



- Massive data collection and re-analysis
- Sophisticated combined novel-omics approaches
- Candidate gene validation in model organisms / systems

The **Rare Diseases Models & Mechanisms Network (RDMM-Europe)** was established within Solve-RD to fill the gap between RD gene discovery and functional validation. Solve-RD provides Seeding Grant funding of 20,000 EUR for up to 50 gene validation projects.

RDMM Model Matchmaking Pipeline

For selection of candidate genes and model matchmaking, a two-committee process and a registry were set up using the structures of the successful Canadian RDMM Network as role model. Connection Applications on novel RD candidate genes are submitted by Solve-RD clinicians and are evaluated and approved by a Clinical Advisory Committee. Upon approval, the project management office opens a call for tender to find best matching model organism investigators (MOIs) for the requested validation work and invites them to submit Seeding Grant Applications. They are evaluated by a Scientific Advisory Committee and approved for funding.

RDMM-Europe Office

- Open call for Connection Applications
- Promote RDMM Registry

Clinical Advisory Committee

- Evaluation and Approval of Connection Applications

RDMM-Europe Office

- Identify relevant MOIs
- Open call for tender

Scientific Advisory Committee

- Evaluation and Approval of Seeding Grant proposals

RDMM-Europe Office

- Establish connection
- Subcontracting and transfer of funding

RDMM Registry

The RDMM-Europe registry is a database that allows all interested MOIs to register the genes and model organisms they work with. Registrants express interest in getting linked to clinicians representing patients with RD and collaborating in projects funded by Solve-RD.

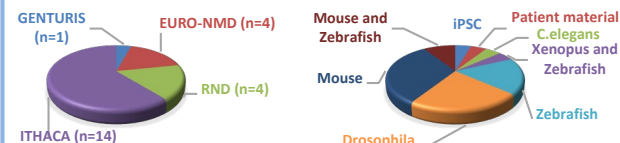
Please get registered here:
<https://rdmm.imgag.de/registration>

New Connections to Advance RD Research

We connect Solve-RD clinicians that have discovered new disease-causing genes with model organism investigators (MOIs) that can study the mechanistic role of the given genes in health and disease by using an appropriate model organism or cell culture system. To date, we have awarded 23 Seeding Grants to MOIs and have linked Solve-RD scientists to model researchers in eight European countries, Canada, USA, Qatar and Australia. Linking scientists across borders via the RDMM network and supporting these joint projects will advance RD research and will benefit patients and families living with RD.



Geographical distribution of RDMM-Europe Seeding Grant recipients



Number of funded projects per European Reference Networks (ERNs) for rare diseases (left), model system approaches used (right)

The Solve-RD project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 779257.



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www.solve-rd.eu