

## DC10: The functionality of mitochondrial quality control (MQC) mechanisms within mitochondrial DNA diseases

**Host institution:** Minovia Therapeutics LTD, Haifa, Israel.

**Supervisor:** Dr. Noa Sher

**Co-Supervisors:** Dr. Arnon Henn, Israel Institute of Technology, Haifa, Israel (Academic); Dr. Antonella Spinazzola, University College London, Queen Square Institute of Neurology, London, United Kingdom (Academic); Dr. Ian Holt, Biodonostia Health Research Institute, Neurosciences department, San Sebastián, Spain (Academic).

**Project description:** Investigating the molecular mechanisms of mitochondrial DNA disorders and the cellular and metabolic response to mitochondrial dysfunction to identify therapies. Specifically, we will characterize mitochondrial dysfunction of iPSC cells derived from patient samples and of B lymphocytes cell lines with known mitochondrial mutation (LCL cells); determine the impact of nutrient regimes on energy production; identify and compare the functionality of mitochondrial control mechanisms in mitochondrial DNA disease patients vs healthy subjects for better understanding mtDNA dynamics.

**Host laboratory:** Minovia Therapeutics has developed unique treatment for mitochondrial diseases. Mitochondrial augmentation technology (MAT) is an autologous cell therapy developed to treat patients with primary mitochondrial diseases. At Minovia, we established numerous methods and analytical expertise for mitochondria and mtDNA analysis, including mtDNA sequencing and heteroplasmy assessment in patient samples and in cell lines. Furthermore, Minovia has expertise in mitochondrial respiration assessment together with hematopoietic cellular phenotyping, in a state-of-the-art facility comprising large group of researchers with substantial emphasis on primary mitochondrial research.

**Secondments:** This project is carried out in strong collaboration with the following groups, and visits to their laboratories are expected during the project. A willingness to travel and Dr. Antonella Spinazzola, University College London, London, United Kingdom;

- Dr. Arnon Henn, Israel Institute of Technology, Haifa, Israel.
- Dr. Ian Holt, Biodonostia Health Research Institute, San Sebastián, Spain.

### Eligibility conditions

- Distinction master's degree in biology, biotechnology or related field.

### Required Skills

- Hands-on experience in at least one of the following fields: cellular biology, fluorescence microscopy, Image data analysis and molecular biology. Advantage for in mitochondrial biology background.
- Proficiency in the English language is required, scientific curiosity and ability to self-learn as well as good communication skills, both oral and written with ability to work independently and with multiple supervisors.

For further inquiries please see:

<https://graduate.technion.ac.il/en/prospective-students/application-to-a-master-or-phd-degree/>

<https://biology.technion.ac.il/en/why-biology-graduate-studies/graduate-study-programs/>

### **Enquiries**

For general information about the MITGEST Doctoral Network visit the project website ([www.mitgest.eu](http://www.mitgest.eu)) or send an email to ([info@mitgest.eu](mailto:info@mitgest.eu)).

For additional information on this project please contact Dr. Carlo Vascotto ([noa@minoviatx.com](mailto:noa@minoviatx.com)).

### **How to apply**

To complete your online application, visit the MITGEST recruitment web page (<https://www.mitgest.eu/open-positions/>).

### **Application deadline**

The closing date for applications is **November 15<sup>th</sup> 2022**.



Co-funded by  
the European Union



Engineering and  
Physical Sciences  
Research Council

Funded by the European Union and supported by UK Engineering and Physical Sciences Research Council. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.