



A novel drug discovery method based on systems biology: combination therapy and biomarkers for Multiple Sclerosis

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The collection of samples from MS patients is almost complete

CombiMS update

The CombiMS project has now entered its second year. The consortium has now almost completed the collection of samples from MS patients and healthy controls that has been carried out over a 4 month period. The clinical information from these patients is currently being included in the secure patient database. Phosphoproteomic, cytokine and

genotyping data will be obtained from these samples to obtain specific information regarding MS. The appropriate models have been generated that will be used to refine our understanding of this disease, and ultimately of the therapeutic options available.

Preparation of kits for the isolation and stimulation of cells

ProtATonce has developed a kit that contains all the reagents and materials necessary for the clinical centres participating in CombiMS to isolate the cells from the blood of MS patients and healthy controls. These kits serve to stimulate the cells isolated, to extract DNA from the samples, and to prepare and store the samples for shipping. The reagents have been prepared from a single batch to ensure the uniformity of

the assays, and their stability over 3 months has been assessed as part of the quality control. The goal is to reduce any external variability in the results as much as possible by using the exact same reagents and consumables at each centre. ProtATonce have prepared 300 kits that have been sent to the four clinical centres participating in the Consortium: Karolinska Institute, IDIBAPS, Charité and University of Zurich.



Preparation of foam cases for the safe shipping of the reagents



Designing, printing and assembly of the kits



Preparation of the reagents for 300 kits from a single batch



Preparation of 300 spiker plates from a single batch for each stimulus



Assembly of the kit for shipment

More information:
<http://www.combims.eu>

Representatives from each clinical centre have been trained in the use of a standardized protocol of the experimental procedures

Technicians Workshop

A technicians Workshop was hosted by the group of Friedemann Paul at Charité (Berlin) on 26th September in Berlin. The aim was to train the representatives from each clinical centre involved in the CombiMS consortium on how to isolate the cells from



the blood samples isolated from healthy controls and MS patients. The purpose of the workshop was to make sure that all the clinical groups (University of Zurich, Karolinka Institute, Charité and IDIBAPS) follow a standardized protocol in order to ensure quality assurance in the experimental procedures for the phosphoproteome and cytokine assays. In this regard all participants successfully completed the workshop. In addition, the workshop ensured that there was a representative at each clinical centre who was familiar with the use of the kit that has been prepared to stimulate the cells obtained, and how these samples should be stored and shipped for analysis.

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Third Consortium meeting

The Third Meeting of the CombiMS Consortium was held at ProtATonce in Athens on the 20th and 21st of January, 2014. During the meeting the members of the Consortium took stock of the work carried out during the second half of 2013 and discussed the activities to be undertaken in the next stage of the project. Special attention was paid to the

clinical information to be included in the patient database before it is closed. It was established that the sample plates must be sent to PAO for phosphoprotein data collection and DNA samples must be sent to IDIBAPS to obtain the genotyping data. The approach to integrate the different models needs to be defined by the groups involved.

Forthcoming tasks & Upcoming events

- Completion of collection of samples from MS patients and closure of the database containing the patient's clinical information.
- Collection of the phosphoproteome, cytokine and genotyping data from the healthy controls and MS patients.
- Standardization of the models and definition of the approach to integrate the different models.
- 4th Consortium meeting that will be held at the EMBL-EBI in Hinxton (UK) on the 27th of May, 2014.
- Submission of a revised version of the article on signalling networks implicated in MS pathogenesis and the pipeline for the identification of new therapies based on a systems biology-based approach.



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