



MINUTES OF THE AUTOIGG Annual Meeting #3
15.12.2020, ZOOM (Hosted by Christa Ivanova, Elvesys)

Present

Beneficiaries

Gulderen Yanikkaya Demirel, Basak Aru - YEDITEPE (Turkey)

Bilal E. Kerman, Gizem Dursun, Ufuk Ozkaya – ARGENIT (Turkey)

Nikita Mikhailov, Rashid Giniatullin – UEF (Finland)

Christa Ivanova – Elvesys (France)

Pavle R. Andjus, Lidija Radenović, Andrej Korenić, Dunja Bijelić, Milena Milošević, Milena Tucić, Katarina Milićević, Katarina Živančević, Darko Lović, Kočović D., Katarina Vučenović, Željko Janičijević, Aleksa Marković - FBUB (Serbia)

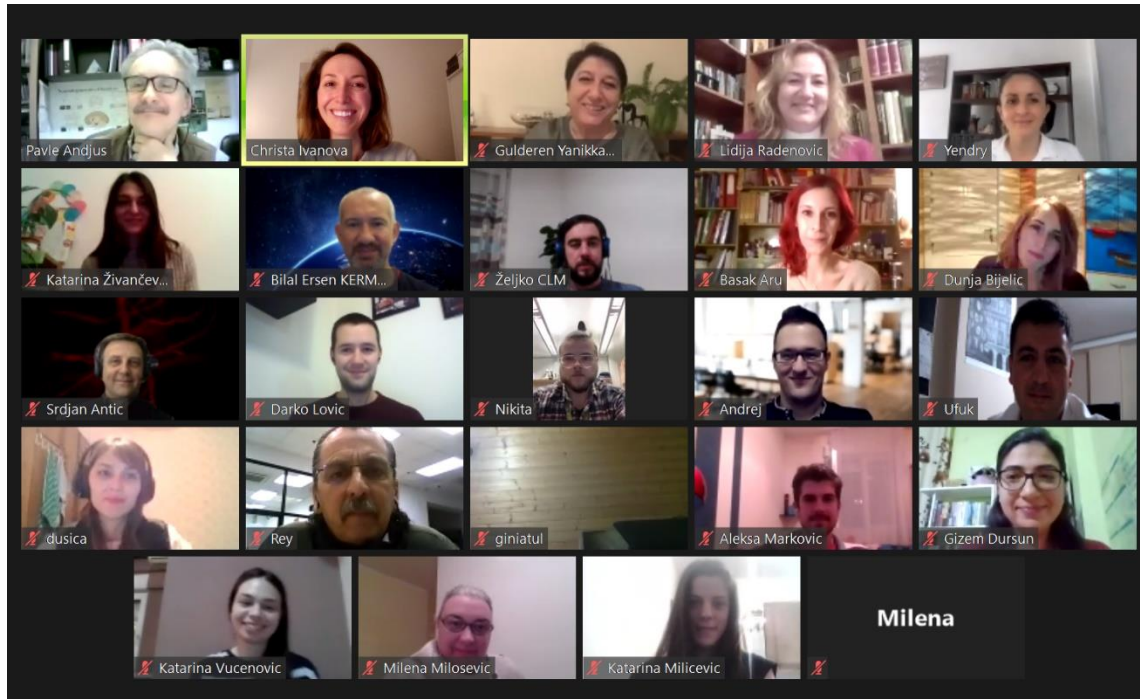
As Guest for FBUB: Dejan Pantelić (Institut of Physics, Belgrade)

Partners

Srdjan Antic - UCONN (USA)

Hande Pembe Ozdinler - NWU (USA)

Yendry Corrales, Reinaldo P. Reyes – Lanotec (Costa Rica)



AM3 Opening (17:00 CET)

- Overview of the state of the play of the project (Pavle Andjus)

PA informed the consortium that due to the COVID-19 pandemic the Supervisory Board decided to suspend the project for an indefinite period (starting from 23. 11. 2020, 35th project month). The Progress report 2 shall be produced upon reaching the 36th month on terminating the suspension. The plan is also to ask for the prolongation of the project for one year since the number of non-performed secondments in 3 years is very high, about 50%.

PA also reported on the achievements in the 3rd year in spite of the pandemic: testing of the device with cells in Belgrade and Kuopio, results on SEM of IgG – treated astrocytes in Lanotec, (Costa Rica); the successful accomplishment of a full year secondment by ESR Mina Perić in the lab of Dr Hande Pembe Ozdinler in NWU (USA). Four deliverables have been accomplished and posted online. There are three publications achieved from the project but more is awaited. Dissemination was mainly achieved by FBUB through obtaining local innovation grants and being invited for promotional competitive events home and abroad. For these events the device was named **NIMOCHIP** (“NeuroIMmunOlogy Chip”) that could remain and eventually be branded. A project webpage is constructed on the Elvsys website and it includes a very efficient and professional video “staring” Basak Aru (YEDITEPE).

Update on project results

- Functional testing of the 1st generation microfluidic device (Nikita Mikhailov)

- NM (ESR, UEF) presented the first results on realtime fluorescence recordings (Fluo 3 and Rodamin 123) on neurons in the chip of the first generation.

- Update on the design and function of the 2nd gen. device and new perspectives (Aleksa Marković/Željko Janićijević, Katarina Milićević, Dejan Pantelić)

- AM (ESR, FBUB) presented the state of the art of the design of the 2nd generation biochip
- KM (ESR, FBUB) presented the successful test of astrocytes seeding and culturing in the chambers of the NIMOCHIP
- Dr Dejan Pantelić (Institute of Physics, Belgrade) who recently joined the consortium, presented the design of the optics on chip and showed possible ways of collecting the fluorescent signal from the device as well as alternative ways of fabricating a microfluidic chip by means of laser light.

- Update on software development for signal analysis (Gizem Dursun, Andrej Korenić)

- GD (ESR, Argenit) presented the draft of a paper on the cell segmentation protocols and on the update of ongoing analysis based on the collected ground truths (from D. Bijlić, FBUB).
- AK (ER, FBUB) presented updates on the refinement of machine learning for signal analysis and segregation.

- Advanced microscopy data and analysis (Lidija Radenović, Dunja Bijelić, Yendry Corrales)

- LR (ER, FBUB) presented the SEM image results collected during secondments in Lanotec
- DB (ESR, FBUB) presented the results of the fractal analysis of SEM images, revealing parameters that show significant differences between untreated cell and ALS or CTRL IgGs (fractal dimension), but also between ALS and CTRL IgGs (texture parameters).

- YC (ER, Lanotec) presented the preliminary AFM results on fixed astrocytes used in SEM measurements. First results show an indication of difference in stiffness of ALS IgG treated cells compared to CTRL IgGs treated or non-treated cells
Rashid Giniatullin commented on the need to study Piezo mechanoreceptors and their inhibitors (Yoda) in these cells.
- **Comparative IgG assays (Basak Aru)1**
- BA presented the report on the purification and binding assay data on the characterization of antibodies from ALS and other neurodegenerative diseases.

- **Panel on paper publishing progress and other dissemination results (moderated by PA)**
- Several papers are awaited in the next year (on patient IgG assays, cell segmentation software, machine learning, SEM data analysis and on mechanism of ALS IgG induced Ca²⁺ imaging in astrocytes and neurons. PA invited all partners to send information about dissemination activities.

- **Planning ahead (open discussion)**
- PA invited all partners to continue working in-house on the project and to concentrate on paper production and dissemination for the period of project suspension. Secondment plan needs to be drafted on the first sign of COVID-19 pandemic secession. After project suspension a year of project extension will be requested and secondments plan need to be prioritized.

The AM3 ended 18:55 CET