

Dear ESID Board Members,

I'm writing to report my completion of the ESID fellowship at the St. Giles Laboratory of Human Genetics of Infectious Diseases, Rockefeller University, led by Prof. Jean-Laurent Casanova.

During the past 6 months, I contributed to the project to investigate a new inborn error of type I interferon immunity in patients with life-threatening COVID-19 pneumonia. I studied a candidate gene, known as a classical interferon stimulated gene (ISG) since 1990, to dissect its cellular functions in anti-viral responses triggered by type I interferon signaling, especially to SARS-CoV-2 infections. I also improved my knowledges and skills in human genetics studies, especially in searching for novel genetic defects in patients with severe viral infections, including COVID-19 and influenza pneumonia. I focused my search in patients recruited from my homeland, Turkey, taking into the consideration of its unique genetic background and high consanguinity rates. My training in the Casanova lab has now prepared me for future career in the human genetic studies of inborn errors of immunity.

I worked full time in the lab under the supervision of Dr. Qian Zhang and Dr. Marcela Moncada-Velez. The techniques I learned include: whole-exome and whole-genome data analyses, real-time PCR, Sanger sequencing, western blotting, tissue culture, and flow cytometry. These human genetics, molecular biology, and biochemistry techniques will equip me for future studies on my own patients. But more importantly, I learned the critical thinking and scientific method, which will be the foundation of my future career as a physician-scientist. During my visit, I attended lab meetings and various seminars in the Rockefeller University. I also attended the weekly meeting of the COVID Human Genetic Effort (CHGE, www.covidhge.com) as a lab member. These meetings and discussions gave me new insight into the complexity and charm of the international scientific community, highlighted the importance of combining basic and clinical studies.

At the end of my fellowship, I would like to thank ESID graciously for making all these possible by this medium term grant. I enjoyed my training very much and I really appreciate the supervision from Prof. Jean-Laurent Casanova, Dr. Qian Zhang, and Dr. Marcela Moncada-Velez, as well as the amazing team. Now I'm more confident than ever to continue my career in the field of inborn errors of immunity. I also look forward to collaborations with other ESID members in the future of my career.

Sincerely yours,

Yasemin Kendir Demirkol