

Evangelia (Elina) Prodromidi
RA Award Winner 2006

1. Photo



2. Brief synopsis in lay terms of the work that you were awarded the prize for and how that work has progressed or finished.

Following injury or disease, the kidney has a limited intrinsic ability to regenerate. Emerging data suggest that cells derived from adult bone marrow may reconstitute part of the damaged kidney by forming various renal cell types. Therefore, this study investigated whether cells derived from the adult bone marrow could function as podocytes, which are a crucial component of the glomerular filtration barrier and play a major role in the synthesis of the glomerular basement membrane. In Alport's syndrome, lack of a particular gene leads to progressive glomerular disease due to impairment of the glomerular basement membrane and loss of podocytes. To date, long-term dialysis or kidney transplantation remain the only therapeutic choices for Alport's syndrome, with considerable morbidity and mortality. This study demonstrated that bone marrow transplantation can ameliorate renal disease by replacing podocytes in damaged glomeruli, in which the gene defect has been corrected. These results provided further evidence to support the possibility that stem cells may prove useful for treatment of human renal disease and have been published and presented in several scientific conferences.

3. Brief paragraph on what you are doing now in lay terms.

In my new post as post-doctoral fellow, I will be working with a different system, the respiratory system, trying to decipher ways of understanding the pathology and discovering new therapeutic targets for respiratory diseases in the same principles I worked with renal disease. Respiratory diseases remain at the centre of interest of media, public health and researchers. Asthma incidence is constantly increasing in the western world and pulmonary fibrosis morbidity and mortality rates remain unchanged and as high as 70%, for example, in the case of interstitial pulmonary fibrosis. Clearly the immune system is greatly involved in the pathogenesis of this kind of diseases and, although inflammation is believed to be essential in pulmonary fibrosis, current immunosuppressive strategies offer little help making lung transplantation the most effective way of treatment. Therefore, finding and developing new therapeutic regimens, either by manipulating the immune system and discovering

new therapeutic targets or applying stem cell therapy to regenerate or repair lung tissue, seems imperative and scientifically exciting. In my new project, I will be looking into the potential role of the novel family of cytokines, Type III Interferons, as immunomodulators of inflammation and/or fibrosis in animal models of pulmonary disease, and the prospective of using stem cell transplantation to restore damage in the lung.

4. Short bio profile of yourself.

I graduated with a BSc with Honours in Cell and Molecular Biology from the University of Essex. I went on studying for an MSc in Immunology at Imperial College London. During my MSc degree, I was introduced into the field of renal research and medicine by choosing to do my MSc research project on induction of mucosal tolerance in experimental autoimmune glomerulonephritis. Immediately after the completion of my MSc, I was awarded a PhD studentship from Kidney Research UK for the project entitled 'Bone marrow derived stem cells and kidney regeneration', which I performed in the Renal Section, within the Department of Medicine of Imperial College London under the supervision of Professors C. Pusey and T. Cook. Parts of my MSc and PhD research work have been published in scientific journals. Throughout the years of my PhD, I attended many national and international scientific conferences, where I presented my work, which had a great appeal for scientists and non-scientists. As a result, I was awarded in 2005 with the Best Poster Presentation prize at Kidney Research UK Fellows day in Belfast. In 2006, I was presented with the Best Abstract Scholarship and Best Young Scientist awards at The Renal Association Annual Meeting in Harrogate. I also received an OrthoBiotech bursary from The Renal Association to present part of my PhD work at the American Society of Nephrology Renal Week Annual Meeting in San Diego in 2006, and a student grant from the European Renal Cell Study Group (ERSCG) to present my work at the 19th meeting of the ERCSG, held in Paris in 2007. Very recently, I returned back to my home country, where I currently work as a post-doctoral fellow in the Biomedical Research Foundation of Academy of Athens, Greece.

5. If applicable, how the award has helped you to get where you are now.

Being a recipient of the Best Young Scientist award was a great honour and recognition of my research work and efforts in the renal field, as well as the trust, assistance and guidance of my supervisors and colleagues. This award has encouraged me to present my work in national and international meetings and try to translate laboratory-based research to clinical application to a non-scientific public. Winning this award has also contributed in successfully pursuing my next professional goal, which is choosing a good post-doctoral position and continuing my research career. Finally, I strongly believe that rewarding good scientific work greatly motivates young scientists to follow a successful research career and continue to seek ways to relieve pain and disease through their research work.