Molecular Immunology 114 (2019) 312–313

Contents lists available at ScienceDirect

Molecular Immunology

journal homepage: www.elsevier.com/locate/molimm

Preface

Dear Colleagues,

On behalf of the Local Organizing Committee (LOC) and the European Complement Network (ECN), I welcome you to Madrid and to the "17th European Meeting on Complement in Human Disease" (EMCHD 2019).

The EMCHD 2019 meeting represents a new edition of a very successful series of congresses in which the expanding role of complement in human disease and the excitement of novel diagnostic and therapeutic developments will be updated. Like previous complement meetings EMCHD 2019 will be a fruitful and stimulating encounter for professionals in academia and industry from all over the world and an opportunity to share and discuss cutting-edge topics in this continuously evolving area. Our scientific program includes 44 selected oral presentations from the best abstracts submitted, and two sessions to view over 200 posters. I would like to thank the board of ECN for their invaluable help in the evaluation of the abstracts and the selection of the oral presentations. The high quality of most of the submitted abstracts made this evaluation a very difficult task.

This special issue of Molecular Immunology contains the accepted abstracts and a collection of 12 reviews that illustrates the constantly increasing clinical relevance of the complement system.

Joshua Thurman and colleagues provide an updated review about antibody mediated transplant rejection with a focus in immunological mechanisms, their histological and clinical consequences and the state of the art in therapeutic strategies.

Of interest also is the comprehensive review by Fernando Corvillo et al. of the role of complement in Lipodystrophy, which brings together a long history of research on Partial Lypodystrophy.

In another timely review, Cristina Casals and collaborators present the old and newly-discovered properties and putative functions in the innate immune system of the soluble defence collagens.

Mechanisms in hereditary angioedema is the topic of a review by Alberto López-Lera and colleagues that offers a revisited version about the implication of the contact system in the pathogenesis of this condition.

Luis Quintana and colleagues review the role of complement in the pathogenesis of ANCA-associated vasculitis (AAV), dissecting the specific pathways of complement activation that have led to complement-based therapeutic developments.

Next, Jose Luís Martín Ventura and collaborators thoroughly review the role of the complement system in pathological remodelling in the setting of atherosclerosis and abdominal aortic aneurysm (AAA), including both experimental and human studies.

Verena Schroeder and Ramzi Ajjan reviewed the evidence from several animal and human studies suggesting that the activation of the complement system contributes to the pathogenesis of both type 1 and type 2 diabetes and to diabetic microvascular and macrovascular complications.

Maisem Laabel et al. reviewed the mechanisms displayed by the microbial pathogens to counteract the effects of complement. They describe the strategies that microrganisms use to manipulate the AP, elude the CP and LP activation, as well as to avoid opsonization and assembly of the lytic pathway. They also provide cutting-edge information about intracellular pathogens and complement.

Agustin Tortajada and colleagues review the evidence supporting the complement involvement in IgA nephropathy and provide a useful overview of the mechanistic causes of IgAN and current clinical trials with complement inhibitors.

Jutta Schröder-Braunstein and Michael Kirschfink provide an interesting update of complement deficiencies focussing on their pathological consequences and including a description of the main analytical procedures for their identification.

In their review, Kristina Nilsson Ekdahl and colleagues discuss the

https://doi.org/10.1016/j.molimm.2019.08.009

Available online 20 August 2019

controversial issue of whether generation of C3(H_2O) is necessary for activation of the alternative pathway *in vivo* and provide different lines of evidence to argue that the role for C3(H_2O) in activating the alternative pathway may have been overestimated.

Lastly, in their manuscript, Wioleta Zelek et al. provide a relevant overview about the current state of complement-targeted drug discovery. The manuscript is written in a non-traditional way that we feel will be useful to those looking for a quick and comprehensive update of the field.

I hope you enjoy reading these reviews as much as I did. Many thanks to all the authors for their excellent contributions and support to EMCHD2019.

I wish to express my gratitude to the many sponsors, to the Spanish Society of Immunology and to our congress bureau KENES Group, who made possible the meeting. Our sincere thanks also to Professor Jose A. Villadangos and the editorial staff of Molecular Immunology for their help in the production of this special issue. Finally, my very special thanks to our lab manager Mrs Emilia Arjona for her endless enthusiasm and incredible hard work during the whole organization of the meeting.

On behalf of the LOC and the ECN, I wish you a most fruitful and pleasant stay in Madrid.

Santiago Rodríguez de Córdoba
Chairman

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