The Society for Mucosal Immunology and Nature Publishing Group bring you *Mucosal Immunology*

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Welcome to *Mucosal Immunology*, the first journal devoted entirely to immunity and inflammation of mucosal tissues. The official journal of the Society for Mucosal Immunology (SMI), *Mucosal Immunology* is brought to you through a partnership between SMI and Nature Publishing Group. The journal will be published on a bimonthly basis and will include invited reviews, primary research articles, commentaries, editorials, letters to the editor, society news, and highlights from the published literature.

So, why do we need *Mucosal Immunology*? And, more importantly, what will *Mucosal Immunology* offer and mean to the scientific community?

First, the field of mucosal immunology is a fast-growing discipline, and with good reason. A majority of the infectious, allergic, and inflammatory diseases that afflict and kill humans involve mucosal tissues, including the gastrointestinal, respiratory, and genitourinary tracts; oral and pharyngeal tissues; and the eye. This is of particular importance when one considers the increasing burden of asthma, the devastating consequences of inflammatory bowel disease, and the worldwide morbidity and mortality caused by bacterial pneumonias, diarrheal diseases, HIV, tuberculosis, and influenza. The lack of effective vaccines,

the increasing emergence of novel and drug-resistant pathogens, and the limited treatment options for allergic and inflammatory diseases reflect our need as a scientific community to further our understanding of the immunologic basis of pathogen clearance and resistance as well as the pathogenesis of these important human diseases. Furthermore, there is a need to apply this knowledge to the development and application of novel therapeutics.

Second, all mucosal tissues share a vastly complex microbial ecology and the need to prevent abnormal immune responses to harmless antigens and commensal bacteria yet maintain immune defense against pathogens. This demand for tight immunological control requires a huge effort by eukaryotic hosts, with most of the lymphocytes and antibodies produced by an individual being devoted to this task. Moreover, failure to maintain this balance within mucosal tissues results in susceptibility to infection, allergy, and inflammatory disease.

Therefore, the realization that an understanding of immunology of mucosal tissues is vital to progress in combating a large number of important human diseases, together with the commonality of immune mechanisms at mucosal sites, provided important motivation for the

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creation of *Mucosal Immunology*. Our hope is that the journal will provide an essential forum for discussion, as well as a real catalyst for thought on both basic and clinical aspects of mucosal immunology.

In addition, we intend to reach out to other disciplines and bring together scientists and clinicians for a more complete discussion and understanding of human diseases. For example, as most of you know, novel molecular techniques have allowed for a new understanding of the important and complex relationship between eukaryotic hosts and commensal (actually, “symbiotic”) microorganisms. As humans, we harbor more than 10-fold more bacteria in our intestines than cells in our bodies. There are profound implications in the discovery that this also translates into greater than 100-fold more genes (our “microbiome”) than found in the human genome, many products of which have vital host functions, such as the metabolism of fats and carbohydrates, the production of vitamins, the health and repair of the mucosal epithelium, and the development of the immune system. Studies of how the diversity of not only bacteria but also fungi and viruses at mucosal surfaces contribute to our health, as well as to the development of inflammatory and allergic diseases, will be rapidly forthcoming, and will include contributions by a diversity of scientists, including microbiologists, geneticists, systems biologists, immunologists, cell biologists, and biochemists, as well as clinician scientists from many areas of medicine. We expect that *Mucosal Immunology* will contribute to this forefront of science by publishing important papers and discussions from a variety of scientific disciplines.

Clearly, the field of microbial-host interactions is only one example of the many areas of science that will bring great discoveries with the potential to change

our understanding of disease and enable us to develop better preventatives and therapeutics. This example, however, is illustrative of the fact that we will need to develop a more multidisciplinary approach to the understanding of complex disease processes.

Mucosal Immunology will also strive to address common themes in mucosal immunology with input from studies of different mucosal tissues. For example, discoveries in the biology of epithelial cells or dendritic cells, the differentiation and function of regulatory T cells, the innate and adaptive immunity to a particular pathogen, or the development of pathologic inflammation within one tissue, such as the intestine, will likely be highly relevant for studies of the lung, eye, vaginal tract, and other tissues, and vice versa.

Finally, a primary goal for *Mucosal Immunology* is to publish only the highest-quality primary manuscripts, reviews, and commentaries. In reflection of the international membership of the SMI, we consider *Mucosal Immunology* a truly international journal and welcome and encourage the submission of manuscripts, letters, and suggestions for reviews and commentaries from anywhere in the world.

So, why should you send your next manuscript to *Mucosal Immunology*? We think that publishing in this journal will have the following advantages:

1. *Mucosal Immunology* will be the first and foremost resource for information on immunology of the nasopharyngeal, gastrointestinal, respiratory, genitourinary, oral, and ocular mucosal tissues.
2. *Mucosal Immunology* will have a broad focus that will allow for a more intriguing and inclusive arena for discussion among both basic and clinical scientists.
3. As the official journal of the SMI, *Mucosal Immunology* will be sent to all members of the Society, so published articles will

have immediate exposure to this large and select audience. Articles will go directly to those most interested in hearing what you have to say.

4. The journal will feature outstanding graphics, including diagrams and photographs. It is planned that these figures will be archived, searchable, and freely available to subscribers. In addition, graphics will be available in several formats, including one for PowerPoint presentations.
5. In the near future, a novel section entitled “Images” will feature intriguing images from basic and clinical research, reproduced with a brief explanation. This will allow for interesting points to be made and clarified with one or two clear images.

So what can you expect in this first issue? You will find a “white paper” on standard nomenclature for the anatomical compartments of the mucosal immune system, which will be of help to new researchers in this field and serve as a guide for manuscript preparation and future discussions.¹ In addition, we thought it fitting for there to be an initial focus on IgA—the major immunoglobulin produced by mucosal tissues, and studies of which formed the foundation of

modern mucosal immunology. New developments in understanding the induction and anatomy of IgA B-cell differentiation and secretion, as well as the function of IgA, are highlighted in a Review² and a Commentary.³ Our second Review⁴ is focused on recent major findings regarding the pathogenesis of HIV in the intestinal tract. Finally, we have an excellent range of primary articles addressing some of the most important issues in modern mucosal immunology. We feel this is an excellent start to a new successful venture for SMI and the mucosal immunology field. We hope you agree.

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