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## Preface

Welcome to the second edition of Methods and Protocols for assessing T cell Trafficking, in the Methods in Molecular Biology series. The trafficking of T cells is relevant in numerous contexts. It occurs during population and maturation of T cells in the thymus and is required for dissemination of antigen naïve T cells to the secondary lymphatic organs where immune responses are initiated. Indeed, T cell trafficking within lymph nodes plays an important role in the maturation of primary and secondary immune responses. Antigen experienced effector T cells can undertake compartmentalized recirculation during immune surveillance. In addition they are recruited to tissues during inflammation where they play important roles in the inflammatory response. Importantly, we now recognize that inappropriate or persistent trafficking of T cells into such sites makes a major contribution to the pathogenesis of immune-mediated inflammatory diseases which have an autoimmune or chronic inflammatory component.

Thus the trafficking of T cells has both physiological and pathological relevance and provides some challenging environments in which to make quantitative measurements. This has seen the development of expertise which goes well beyond the standard laboratory methodologies which can be supported by commercially available kits and reagents. The methods in this edition have been developed by experts in T cell trafficking, who have spent many years perfecting them. Each chapter contains a step-by-step guide to conducting the assays, with useful hints to avoid common pitfalls. The volume is organized into three sections. The first addresses homeostatic T cell trafficking during thymic maturation, followed by the subsequent colonization of and egress from secondary lymphoid organs. The second addresses T cell trafficking during “normal” inflammatory and immune responses. Lastly, we include a section on T cell trafficking in disease. Each section is headed by an informative and accessible introduction written by experts who are actively investigating the regulation of T cell trafficking in these different scenarios. We believe this will ensure that this book will become an essential point of reference for those new to the field of T cell trafficking, or to those looking to expand their technical capabilities.

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**T-Cell Trafficking**

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