

# Leukocyte Traffic and the Immune Response

## Principal investigator(s) and affiliation(s), contact information

Marko Salmi, MD, PhD, Professor of Immunology  
MediCity Research Laboratory, Department of Medical Microbiology and Immunology/Department of Medical Biochemistry and Genetics,  
University of Turku  
Turku, Finland  
E-mail: marko.salmi@utu.fi  
Phone: 333 7006

## Members of the research group

### Doctoral candidates:

Kristiina Aalto, MSc  
Johannes Dunkel, MD  
Dominik Eichin, MSc  
Norma Jäppinen, MSc  
Senthil Palani, MSc

### Senior researchers:

Kaisa Auvinen, PhD, Docent (Adjunct Professor)  
Pia Rantakari, PhD  
Fumiko Marttila-Ichihara, MD, PhD?

### Technicians:

Etta-Liisa Väänänen  
Riikka Sjöroos

*Affiliated:* Kati Elima, MD, PhD and her doctoral candidates Sam Kaitaniemi, MD and Senthil Palani, MSc



## Description of the scientific aims

Leukocyte infiltration into tissues is critical for the generation of normal immune responses and the pathogenesis of inflammatory diseases. Our aim is identify new molecules and mechanisms (e.g. Plvap) controlling the locomotion of leukocytes in health and disease. We are particularly interested in elucidating the mechanisms, which govern the differentiation and trafficking of immune suppressive types of monocytes/macrophages in the body. We also study the effects of approved drugs on leukocyte migration and differentiation, and search for new drug candidates for manipulating these processes. Moreover, we examine the value of soluble adhesion molecules and cytokines as predictive biomarkers of disease.

## Selected publications 2010-

1. Palani S, Elima K, Ekholm E, Jalkanen S, Salmi M. Monocyte stabilin-1 suppresses the activation of Th1 lymphocytes. *J Immunol*, 2015, in press.
2. Rantakari P, Auvinen K, Valtonen J, Karikoski M, Gerke H, Jäppinen J, Ilftakhar-E-Khuda I, Keuschnigg J, Miyasaka M, Elima K, Jalkanen S, Salmi M. Plvap controls the entry of antigens to conduits and lymphocyte transmigration to parenchyma in the lymphatic sinus of lymph nodes. *Nat Immunol*, 16(5):386-96, 2015.
3. Salmi M, Karikoski M, Elima K, Rantakari P, Jalkanen S. CD44 binds to macrophage mannose receptor on lymphatic endothelium and supports lymphocyte migration via afferent lymphatics. *Circ Res*, 112(12):1577-1582, 2013.
4. Pouwels J, De Franceschi N, Rantakari P, Auvinen K, Karikoski M, Mattila E, Potter C, Sundberg JP, Hogg N, Gahmberg CG, Salmi M,\* Ivaska J.\* SHARPIN regulates uropod detachment in migrating lymphocytes. *Cell Rep*, 5(3):619-28, 2013. \*equal contribution as the last author
5. Aalto K, Maksimow M, Juonala M, Viikari J, Jula A, Kähönen M, Jalkanen S, Rantakari OT, Salmi M. Soluble Vascular Adhesion Protein-1 correlates with cardiovascular risk factors and early atherosclerotic manifestations. *Arterioscler Thromb Vasc Biol*, 32(2):523-32, 2012.