

Prof. Dr. med. Markus Munder

*12.11.1967

Chief Senior Physician
Working Group Leader

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Academia

04/88-03/91	Studies of human medicine, Albert-Ludwigs-University Freiburg
04/91-06/95	Studies of human medicine, Ludwig-Maximilians-University München
04/94-03/95	Practical year, Zentralklinikum Augsburg
06/95	Third state examination

Research Career

09/95-09/98	Doctorate at the Max Planck Institute for Immunobiology in Freiburg i.Br., Department of Cellular Immunology (Prof. Dr. K. Eichmann). Topic: "Studies on the regulation of arginase in murine macrophages and dendritic cells"
10/98-12/00	Postdoc, Laboratory Prof. Dr. V. K. Kuchroo, Center for Neurologic Diseases, Brigham, and Women`s Hospital and Harvard Medical School, Boston, USA. Project: "Analysis of T cell receptor-associated signal transduction cascades during stimulation by encephalitogenic or protective peptide ligands within the differentiation and activation of proteolipid protein (PLP)-specific T cell clones".
05/02-01/04	Working group leader the Clinical Cooperation Unit Molecular Hematology and Oncology, German Cancer Research Center, Heidelberg. Project: Characterization of the expression of the enzyme arginase in the human immune system
02/04-12/09	Working group leader in the Department of General Immunology (Prof. Dr. S. Meuer), Institute of Immunology, Heidelberg. Project: Immunoregulatory functions of granulocyte arginase
seit 01/10	Working group leader at the III. Med. Clinic and Polyclinic, University Medical Center of the Johannes Gutenberg University Mainz, Topic: Tumor immune escape
01/10	Habilitation in Internal Medicine (University of Heidelberg)
05/11	Re-habilitation in Internal Medicine at the University of Mainz

07/19 Professorship at the III. Med. Clinic and Polyclinic, University Medical Center of the Johannes Gutenberg University Mainz

Clinical Career

01/01-10/01 Internship physician, Medical Clinic V (Hematology, Oncology, Rheumatology, Prof. Dr. A. D. Ho), University Hospital Heidelberg

10/01-12/09 Assistant physician, Medical Clinic V, University Hospital Heidelberg

01/07 Specialist in internal medicine

02/09 Focus on hematology and internal oncology

Seit 01/10 Senior physician, III. Med. Clinic and Polyclinic, University Medical Center of the Johannes Gutenberg University Mainz. focus on plasma cell diseases

Scholarships and third-party funding

04/99-09/00 DFG Postdoctoral Fellowship

10/98-03/99 Postdoctoral Fellowship, Brigham and Women's Hospital, Boston, USA

03/06-02/09 DFG-Funding: „Charakterisierung der antimikrobiellen und antiinflammatorischen Funktion der humanen Granulozyten-Arginase“

01/08-12/09 „Acciones Integradas“ Program of the DAAD

03/08-02/10 Dietmar-Hopp Foundation

05/10-07/12 Else Kröner-Fresenius Foundation

seit 07/12 DFG-Funding (3 years): „Regulation und Funktion des Arginintransportes in humanen T-Lymphozyten“

seit 07/12 BMBF Subproject CI3 Spitzencluster (3 years): „Charakterisierung der tumorassoziierten Immunsuppression“

Awards

1999 Goedecke Research Award

2003 Novartis Foundation Prize for Therapeutic Research

2005 Donation from the estate of Carlo Chiappini

Memberships

since 2001 German Society for Internal Medicine

since 2005 German Society of Immunology

Selected Publications

Werner A, Koschke M, Leuchtner N, Luckner-Minden C, Habermeier A, Rupp J, Heinrich C, Conradi R, Closs EI, **Munder M**. Reconstitution of T Cell Proliferation under Arginine Limitation: Activated Human T Cells Take Up Citrulline via L-Type Amino Acid Transporter 1 and Use It to Regenerate Arginine after Induction of Argininosuccinate Synthase Expression. *Front Immunol.* 2017;8:864. doi: 10.3389/fimmu.2017.00864

Werner A, Amann E, Schnitzius V, Habermeier A, Luckner-Minden C, Leuchtner N, Rupp J, Closs EI, **Munder M**. Induced arginine transport via cationic amino acid transporter-1 is necessary for human T-cell proliferation. *Eur J Immunol.* 2016;46:92-103.

Rath M, Müller I, Kropf P, Closs EI, **Munder M**. Metabolism via arginase or nitric oxide synthase: two competing arginine pathways in macrophages. *Front Immunol.* 2014;5:532.

Kapp K, Prüfer S, Michel C, Habermeier A, Luckner-Minden C, Giese T, Bomalaski J, Langhans C, Kropf P, Müller I, Closs EI, Radsak MP, **Munder M**. Granulocyte functions are independent of arginine availability. *J Leukoc Biol.* 2014;96:1047-53.

Munder M, Engelhardt M, Knies MD, Medenhoff S, Wabnitz G, Luckner-Minden C, Feldmeyer N, Voss RH, Kropf P, Müller I, Conradi R, Samstag Y, Theobald M, Ho AD, Goldschmidt H, Hundemer M. Cytotoxicity of tumor antigen specific human T cells is unimpaired by arginine depletion. *PLoS One.* 2013;8(5):e63521.

Oberlies J, Watzl C, Giese T, Luckner C, Kropf P, Müller I, Ho AD, **Munder M**. Regulation of NK cell function by human granulocyte arginase. *J Immunol.* 2009;182:5259-67.

Munder M, Schneider H, Luckner C, Giese T, Langhans CD, Fuentes JM, Kropf P, Mueller I, Kolb A, Modolell M, Ho AD. Suppression of T cell functions by human granulocyte arginase. *Blood.* 2006;108:1627-34.

Munder M, Mollinedo F, Calafat J, Canchado J, Gil-Lamagnere C, Fuentes JM, Luckner C, Doschko G, Soler G, Eichmann K, Müller FM, Ho AD, Goerner M, Modolell M. Arginase I is constitutively expressed in human granulocytes and participates in fungicidal activity. *Blood.* 2005;105:2549-56.

Munder M, Bettelli E, Monney L, Slavik J, Nicholson LB, Kuchroo VK. Reduced self-reactivity of an autoreactive T cell after activation with cross-reactive non-self-ligand. *J Exp Med.* 2002;196:1151-62.

Munder M, Mallo M, Eichmann K, Modolell M. Murine macrophages secrete interferon gamma upon combined stimulation with interleukin (IL)-12 and IL-18: A novel pathway of autocrine macrophage activation. *J Exp Med.* 1998;187:2103-8.

Munder M, Eichmann K, Modolell M. Alternative metabolic states in murine macrophages reflected by the nitric oxide synthase/arginase balance: competitive regulation by CD4+ T cells correlates with Th1/Th2 phenotype. *J Immunol.* 1998;160:5347-54.