

## Ivan Tancevski

Date of birth: 1 February 1978

Place of birth: Bozen, Südtirol, Italy

<http://inneremed6.uki.at>

### Biographical sketch

Ivan Tancevski has a long-standing interest and track record of studies on lipoprotein metabolism and atherosclerosis. The major part of his research work is concentrated on macrophage Reverse Cholesterol Transport (RCT) and novel lipid-lowering strategies. In examining innovative approaches to promote the macrophage-to-feces RCT mechanism, Dr. Tancevski was the first to show that a novel class of lipid-lowering drugs, namely liver-selective thyroid hormone analogs promote the RCT and protect from atherosclerosis. His data on thyromimetics were presented at the annual meetings of the American Heart Association (AHA) and the European Lipoprotein Club (ELC). Subsequently, many invitations to write review articles followed, including one in the renowned journal *Pharmacology & Therapeutics*. Dr. Tancevski is the only scientist in Austria to have been awarded the Main Award of the Austrian Atherosclerosis Society (AAS) twice. For his work on the development of novel strategies to counteract cardiovascular disease, in 2009 he was awarded the Austrian Life Science Award (ALSA) as Austria's most promising young investigator in all disciplines. During the last years, Dr. Tancevski has established a world-wide scientific network, which was indispensable for the realization of his latest study published in *Cell Metabolism*. This study was conceived and led by Dr. Tancevski, and is co-authored by more than 40 scientists working at universities spread all over the world. Most importantly, this study will extend the current knowledge on the atheroprotective mechanisms of aspirin, and will pave the way for the design and development of novel lipid-lowering compounds based on the structure of bioactive lipid mediators including lipoxins. The work was featured as 'Research Highlight' in *Nature Reviews Endocrinology* and selected as pertaining to the 10 most important scientific breakthroughs in 'Systems Biology and Metabolomics' of the last 10 years by *Cell Metabolism*. To the person: The applicant finished his 6-yr clinical training in internal medicine in 2012, and is now an established group leader at the Department of Internal Medicine VI at Innsbruck Medical University.

### EDUCATION

1997-2004	Study of medicine at Medical University Innsbruck (MUI)
2002-2004	Thesis at the Dpt of Internal Medicine, MUI
2004-2007	Post-Doc at the Dpt of Internal Medicine, MUI
2007-2012	Assistant physician at the Dpt of Internal Medicine, MUI
2012	Specialist in Internal Medicine, Dpt of Internal Medicine, MUI
2012-2015	Specialization in Infectious and Tropical Diseases, Internal Medicine VI, MUI
2015	<i>Venia docendi</i> in Internal Medicine
2015-	Assistant medical director for the Dpt. of Pneumology

### CLINICAL FOCUS AND LONG-LASTING EXPERIENCE

Internal Medicine, Infectious Diseases and Systemic Inflammatory Disorders, Lipid metabolism.

### FURTHER QUALIFICATIONS

03.12.1999	Specialized course in Experimental Pathology at the MUI
01.04.2005	Diploma in Experimental Animal Studies, graduated at the MUI

### FUNDINGS AND AWARDS

ÖGES	Austrian Society for Endocrinology and Metabolism	2005	1st prize
H&B	Hans & Blanca Moser Stiftung No. 61-1994/95	2005	€ 4,500.-
MFI	Medizinische Forschungsförderung Innsbruck No. 4316	2005	€ 58,225.-
AAS	Austrian Atherosclerosis Society	2007	1st prize
TWF	Tiroler Wissenschaftsfond UNI-0404/420	2007	€ 13,000.-
MFF	Medizinischer Forschungsfond Tirol	2008	€ 12,000.-
ALSA	Austrian Life Science Award – Young scientist of the year	2009	1st prize (€ 10,000.-)

ÖGES Austrian Society for Endocrinology and Metabolism	2010	1st prize
AAS Austrian Atherosclerosis Society	2010	1st prize
TWF Tiroler Wissenschaftsfond UNI-0404/965	2010	€ 16,600.-
CAST Innsbruck Technology Award	2011	4th prize
FWF Austrian Funding Agency No. P23853-B13	2011	€ 257,000.-
OEGIT Austrian Society for Infectious and Tropical Diseases	2015	1st prize
OEGIM Austrian Society of Internal Medicine	2015	1st prize
Research Prize of the city of Innsbruck	2015	1st prize
Institut Meriéux Research Grant	2015	€ 100,000.-

### **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

Co-Mentor of Egon Demetz PhD, Kristina Auer PhD, Kristina Duwensee PhD, Katherin Patsch PhD, Julia Huber PhD, Julia Hoefler PhD, Petra Massoner PhD: all at MUI between 2003-2007

### **TEACHING**

2003-2007	Tutor in the course ‚Recombinant antibodies‘, at the MUI
2003-2007	Teaching in the course on ‚Gene therapy‘ at the MUI
2003-2007	Teaching in courses ‚Strategies for Gene Therapy‘ (503.166) and ‚Viral gene transfer‘ (503.167) at the MUI
2012-	Teaching in the course ‚Vertiefte Ausbildung Infektiologie‘ (170041) and Teaching in the course ‚Turnusärztefortbildung‘ at the MUI
	Instructor in Internal Medicine at the MUI

### **MEMBERSHIPS**

Austrian Atherosclerosis Society  
Austrian Society for Endocrinology and Metabolism  
Austrian Society of Internal Medicine  
European Society of Endocrinology  
European Lipoprotein Club  
Austrian Society for Infectious and Tropical Diseases

### **ORGANIZATION OF SCIENTIFIC MEETINGS**

Austrian Atherosclerosis Society: 2010-2013 as Organizing committee member

### **COMMISSIONS OF TRUST**

2014 - Academic Editor for PLoS One  
Reviewer for Cell Metabolism,  
Blood,  
PLoS One,  
Immunology and Cell Biology,  
Biochimica Biophysica Acta,  
J Lipid research,  
J Internal Medicine,  
FEBS Letters,  
Endocrinology.

### **MAJOR COLLABORATIONS**

*Collaboration on cholesterol metabolism, RCT and atherosclerosis research:*

Miranda van Eck Leiden Academic Centre for Drug Research Division of Biopharmaceutics,  
Leiden, The Netherlands  
Mats Rudling Karolinska University Hospital Huddinge, Stockholm, Sweden  
Uwe Tietge University Medical Center Groningen, Groningen, The Netherlands

*Collaboration on bioactive lipid mediators, lipidomics and systems biology:*

Yumiko Imai Graduate School of Medicine, Akita University, Akita City, Japan  
Makoto Arita Department of Health Chemistry, University of Tokyo, Tokyo, Japan

## KEY PUBLICATIONS AS MAIN AUTHOR

Overall, I have >35 peer-reviewed papers; the following 5 papers represent my major contributions.

1. *The arachidonic acid metabolome serves as a conserved regulator of cholesterol metabolism. Cell Metab. 2014 Nov 4;20(5):787-98.*

Demetz E, Schroll A, Auer K, Heim C, Patsch JR, Eller P, Theurl M, Theurl I, Theurl M, Lener D, Stanzl U, Seifert M, Haschka D, Asshoff M, Dichtl S, Nairz M, Huber E, Stadlinger M, Moschen AR, Li X, Pallweber P, Scharnagl H, Stojakovic T, März W, Kleber ME, Garlaschelli K, Uboldi P, Catapano AL, Stellaard F, Rudling M, Kuba K, Imai Y, Arita M, Schuetz JD, Pramstaller PP, Tietge UJF, Trauner M, Norata GD, Claudel T, Hicks AA, Weiss G, **Tancevski I**.

Ground-breaking findings in immunometabolism describing for the first time the interplay between arachidonic acid-derived bioactive lipid mediators including lipoxins and cholesterol metabolism, evolutionary conserved.

2. Aspirin regulates expression and function of scavenger receptor-BI in macrophages: studies in primary human macrophages and in mice. *FASEB J. 2006 Jul;20(9):1328-35.*

**Tancevski I**, Wehinger A, Schgoer W, Eller P, Cuzzocrea S, Foeger B, Patsch JR, Ritsch A. First report showing that pharmacological manipulation of the arachidonic acid metabolism alters HDL-C receptor expression; this study led to the subsequent investigations published in *Cell Metab*.

3. *The liver-selective thyromimetic T-0681 influences reverse cholesterol transport and atherosclerosis development in mice. PLoS One. 2010 Jan 15;5(1):e8722.*

**Tancevski I**, Demetz E, Eller P, Duwensee K, Hoefler J, Heim C, Stanzl U, Wehinger A, Auer K, Karer R, Huber J, Schgoer W, Van Eck M, Vanhoutte J, Fievet C, Stellaard F, Rudling M, Patsch JR, Ritsch A.

First report systematically showing that selective thyromimetics promote RCT and protect from atherosclerosis in mice; several mouse models (C57BL/6, CETP<sup>tg</sup>, *SR-BI*<sup>-/-</sup>, *LDLr*<sup>-/-</sup>, *apoE*<sup>-/-</sup>) were used; the macrophage RCT method was established in the PI's laboratory.

4. *The thyromimetic T-0681 protects from atherosclerosis. J Lipid Res. 2009 May;50(5):938-44.*

**Tancevski I**, Wehinger A, Demetz E, Hoefler J, Eller P, Huber E, Stanzl U, Duwensee K, Auer K, Schgoer W, Kuhn V, Fievet C, Stellaard F, Rudling M, Foeger B, Patsch JR, Ritsch A.

First report showing that selective thyromimetics protect from atherosclerosis in an animal model with a 'man-like' lipoprotein profile. The study served to establish atherosclerosis quantification protocols in the PI's laboratory, and to learn how to design atherosclerosis studies in cholesterol-fed animals.

5. *Fibrates ameliorate the course of bacterial sepsis by promoting neutrophil recruitment via CXCR2. EMBO Mol Med. 2014 Apr 22;6(6):810-20.*

**Tancevski I**, Nairz M, Duwensee K, Auer K, Schroll A, Heim C, Feistritzer C, Hoefler J, Gerner RR, Moschen AR, Heller I, Pallweber P, Li X, Theurl M, Demetz E, Wolf AM, Wolf D, Eller P, Ritsch A, Weiss G.

Recent study in which the PI learned on the interplay between immunology and metabolism; the study critically extended the PI's knowledge about innate immunity, inflammatory pathways and trained him to recognize possible points of intersection between innate immunity, lipids and metabolism.

## **TOP 5 INVITED TALKS AT INTERNATIONAL MEETINGS**

### *American Heart Association annual meeting*

1. **Tancevski I:** Hyperthyroidism Decreases Plasma HDL Cholesterol by Inhibition of Hepatic ABCA1 Expression. **Circulation. 2006;114:II\_225.**
2. **Tancevski I:** The Novel Thyromimetic KAT-681 Promotes Macrophage Reverse Cholesterol Transport In Vivo And Protects From Atherosclerosis. **Circulation. 2007;116:II\_298.**

### *European Atherosclerosis Society annual meeting*

3. **Tancevski I:** Atherogenic lipoprotein profile in rabbits after overexpression of human scavenger receptor class B type I. **Atherosclerosis Supplements. Volume 5, Issue 1, Page 66, 2004.**
4. **Tancevski I:** Influence of aspirin on expression and function of scavenger receptor-BI within primary human macrophages: A new atheroprotective mechanism of aspirin? **Atherosclerosis Supplements. Vol. 6, Issue 1, p98, 2005.**

### *European Lipoprotein Club annual meeting*

5. **Tancevski I:** Arachidonate 5-lipoxygenase as conserved regulator of cholesterol metabolism. <http://www.ludesign.nl/elc/process?program2013> September 2013.