



**35<sup>th</sup> International Winter-Workshop  
Clinical, Chemical and  
Biochemical Aspects of Pteridines  
and Related Topics**



**Society for Exploitation of Education and Research in  
Immunology and Infectious Diseases, Innsbruck**  
*in collaboration with*

**The International Society of Pteridinology  
and  
The Austrian Society of  
Laboratory Medicine and Clinical Chemistry  
(ID 544675 - 22 DFP)**

[www.pteridines.org](http://www.pteridines.org) – [www.oeglmkc.at](http://www.oeglmkc.at) - [www.neopterin.net](http://www.neopterin.net)

**February 23<sup>rd</sup> – 26<sup>th</sup>, 2016**

in

**Innsbruck, Austria**



MEDIZINISCHE UNIVERSITÄT  
INNSBRUCK

**CCB, Innrain 80/82, Seminar Room M01.490 (1<sup>st</sup> floor)**

- Location:** **Center for Chemistry and Biochemistry (CCB)**  
**Innrain 80, Innsbruck, Austria**  
Seminar Room M01.490 (1<sup>st</sup> floor)
- Scientific Committee:** Fuchs D (Innsbruck, A)  
Gostner JM (Innsbruck, Austria)  
Griesmacher A (Innsbruck, A)  
Melichar B (Olomouc, CZ)  
Reibnegger G (Graz, A)  
Strasser B (Innsbruck, A)  
Weiss G (Innsbruck, A)  
Werner ER (Innsbruck, A)
- Honorary Member:** Pfleiderer W (Konstanz, D)
- Scientific Goal:** The purpose of the workshop is to bring together researchers and clinicians being engaged or interested in a wide spectrum of issues covering chemistry, enzymology, transport and clinical aspects of pteridines and folates and related topics.
- Sessions:** Neopterin, biopterin, tryptophan, phenylalanine...  
analysis of  
biochemistry of  
chemistry of  
clinical biochemistry of  
in immunology  
in metabolic disorders  
in disease
- Language:** The official conference language is English
- Presentation:** Beamer (PC)
- Lectures:** 20 minutes (including 5 minutes for discussion)
- Publication:** Abstracts will be published in PTERIDINES (vol. 27, 2016)

## Organisation and Scientific Committee:

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## Tuesday, February 23<sup>rd</sup>, 2016 – afternoon

### 1:45 *Get-Together-Coffee*

2:15 – 3:40 **Chair:** Gostner JM (Innsbruck, Austria), Sperner-Unterweger B (Innsbruck, Austria)

#### *Mood and Quality of Life*

2:15 **Opening remarks (What is all about)**  
Fuchs D (Innsbruck, Austria)

2:20 **Influence of acute vs. chronic immune stimulation on tryptophan metabolism and mood**  
Fuchs D, Becker K, Strasser B, Gostner JM (Innsbruck, Austria)

2:40 **Low grade inflammation-induced changes in neurotransmitter precursor amino acids and their possible role as biomarkers in cancer-related depression**  
Hüfner K, Oberguggenberger A, Kohl C, Geisler S, Gamper E, Meraner V, Egeter J, Hubalek M, Beer-Sandner B, Sperner-Unterweger B, Fuchs D (Innsbruck, Austria)

3:00 **Altered tyrosine and tryptophan metabolism during the schizophrenia illness course**  
De Picker L, Fuchs D, Coppens V, Sabbe B, Morrens M (Antwerp, Belgium; Innsbruck, Austria)

3:20 **Increased ratios of neurotoxic tryptophan catabolites in bipolar disorder**  
Birner A, Platzer M, Bengesser SA, Lackner N, Queissner R, Fellendorf F, Reinighaus B, Mangge H, Fuchs D, Kapfhammer HP, Schwarz M, Reininghaus EZ (Graz & Innsbruck, Austria; Munich, Germany)

### 3:40 – 4:10 *Coffee Break*

4:10 – 5:30 **Chair:** Girgin G (Ankara, Turkey), Secnik P (Lucenec, Slovak Republic)

#### *Pro- and Antioxidants*

4:10 **Dinitrochlorobenzene (DNCB) modulates immunocompetence**  
Gostner JM, Becker K, Schennach H, Pease J, Fuchs D (Innsbruck, Austria; London, United Kingdom)

4:30 **Effects of nanoparticles on cultured immune cells**  
Becker K, Herlin N, Schennach H, Fuchs D, Gostner JM (Innsbruck, Austria & Paris, France)

4:50 **N-methyl-D-aspartate and adenosine receptor mediated effect of organic and inorganic mercury on SH-SY5Y cell viability**  
Engin AB, Engin ED, Tsatsakis AM, Golokhvast K (Ankara, Turkey; Heraklion, Greece & Vladivostok, Russia)

5:10 **Development of a kit to measure food antioxidant capacity using a novel chromometer**  
Priftis A, Tsatsakis AM, Konstantinopoulos C, Tzioumaki N, Kouretas D (Larissa, Heraklion & Patras, Greece)

## Wednesday, February 24<sup>th</sup>, 2016 – morning

9:15 – 10:35 *Chair: Strasser B (Innsbruck, Austria), Pellegrin K (Los Angeles, USA)*

### *Physical Exercise, Mood & Cognition*

- 9:15 **Effects of exhaustive aerobic exercise on biomarkers of immune activation and tryptophan metabolism in trained athletes**  
Fuchs D, Geiger D, Schauer M, Gatterer H, Burtscher M, Strasser B (Innsbruck & Hall, Austria)
- 9:35 **Probiotic supplements affect tryptophan metabolism and reduce the incidence of upper respiratory tract infections in trained athletes: a randomized, double-blinded, placebo-controlled trial**  
Geiger D, Schauer M, Gatterer H, Burtscher M, Fuchs D, Strasser B (Hall & Innsbruck, Austria)
- 9:55 **Neopterin generation during inflammation and oxidative stress following high impact sport**  
Gieseg SP, Lindsay A, Draper N, Lewis J, Carr S, Cross, S, Peterson C (Christchurch, New Zealand & Derby, United Kingdom)
- 10:15 **Effect of N-chlorotaurine on neopterin production and tryptophan breakdown, analytical aspects**  
Geisler S, Nagl M, Schennach H, Fuchs D, Gostner JM (Innsbruck, Austria)

### 10:35 – 11:00 *Coffee Break*

11:00 – 12:30 *Chair: Fuchs D (Innsbruck, Austria), Engin AB (Ankara, Turkey)*

### *Tryptophan, Tyrosine, Phenylalanine, Neopterin*

- 11:00 **Neuroimmunology of suicidal behavior: the upstream, the downstream and the modifiable**  
Postolache TT, Brenner L, Fuchs D, Brundin L (Baltimore MD; Denver, CO; Innsbruck, Austria; Grand Rapids MI)
- 11:30 **Association between smoking and plasma tyrosine and kynurenine in schizophrenia**  
Mathai AJ, Fuchs D, Jyoti Kanwar J, Giegling I, Hartmann AM, Konte B, Friedl M, Rosenthal N, Okusaga O, Rujescu D, Postolache TT (Baltimore, MD, Washington, DC, Erie, PA Denver, CO, Tampa, FL, USA; Innsbruck, Austria & Halle, Germany)
- 11:50 **Neopterin measurements in human saliva**  
Geisler S, Schnell T, Fuchs D (Innsbruck, Austria)
- 12:10 **Are serum neopterin levels helpful as prognostic marker in patients with decompressive craniotomy and bone flap donation?**  
Rainer V, Edlinger M, Ladner B, Schennach H, Mühlbacher A (Innsbruck, Austria)

### 12:30 *Lunch Break*

## Wednesday, February 24<sup>th</sup>, 2016 – afternoon

2:15 – 3:35    **Chair:** *Postolache TT (Baltimore, USA), Weiss G (Innsbruck, Austria)*

### *Gut Brain Axis, Iron*

**2:15    Association between the activation of immune system and citrulline, a biomarker of gut function, during anticancer therapy**

Bartoušková M, Zezulová M, Vitásková D, Študentová H, Kujovská-Krčmová L, Solichová D, Adam T, Melichar B (Olomouc & Hradec Králové, Czech Republic)

**2:35    Intestinal microbiome, neuroinflammation and neurodegeneration**

Leblhuber F, Kainz E, Schütz B, Fuchs D (Linz & Innsbruck, Austria; Limburg, Germany)

**2:55    Dopamine regulates iron homeostasis and innate immune responses of macrophages to salmonella infection**

Dichtl S, Haschka D, Demetz E, Nairz M, Aßhoff M, Seifert M, Berger S, Weiss G (Innsbruck, Austria)

**3:15    Iron and the route to mitochondria**

Volani C, Haschka D, Demetz E, Doerrier C, Gnaiger E, Weiss G (Innsbruck, Austria)

3:35 – 4:00    *Coffee Break*

4:00 – 5:20    **Chair:** *Oberacher H (Innsbruck, Austria), Baydar T (Ankara, Turkey)*

### *Analytical Aspects*

**4:00    Transcriptional and translational control are important mechanisms for the regulation of adipogenesis**

Fromm-Dornieden C, von der Heyde S, Salinas-Riester G, Brenig B, Beissbarth T, Baumgartner BG (Göttingen, Germany & Salzburg, Austria)

**4:20    Liquid chromatography–tandem mass spectrometry method for determination of homocysteine and other biologically important thiols in plasma**

Galba J, Michalíková A, Parrak V, Kováč A (Bratislava & Košice, Slovak Republic)

**4:40    Pharmacometabolomics of Tamoxifen therapy**

Oberacher H, Arnhard K, Pitterl F, Sperner-Unterwiesing B, Holzner B, Oberguggenberger A, Hubalek M, Fiegl H, Marth C, Koal T (Innsbruck, Austria)

**5:00    Oxyresveratrol modulates lipopolysaccharide- and mitogen-induced inflammatory responses in human PBMC and THP-1 cells**

Palabiyik SS, Becker K, Halici Z, Bayir Y, Schennach H, Gostner JM, Fuchs D (Erzurum, Turkey & Innsbruck, Austria)

## Thursday, February 25<sup>th</sup>, 2016 – morning

9:15 – 10:35 **Chair:** Gieseg S (Christchurch, New Zealand), Werner-Felmayer G (Innsbruck, Austria)

### **Biochemistry of BH<sub>4</sub> and Lipid Metabolism**

9:15 **Alkylglycerol monooxygenase physiology - what is known so far**  
Watschinger K, Keller MA, Golderer G, Werner-Felmayer G, Werner ER (Innsbruck, Austria)

9:35 **Alkylglycerol monooxygenase in differentiation of 3T3-L1 fibroblasts**  
Sailer S, Geley S, Keller MA, Hermetter A, Golderer G, Werner-Felmayer G, Werner ER, Watschinger K (Innsbruck & Graz, Austria)

9:55 **Alkylglycerol monooxygenase in *Dictyostelium discoideum***  
Seppi D, Golderer G, Hermetter A, Keller MA, Werner-Felmayer G, Watschinger K, Werner ER (Innsbruck & Graz, Austria)

10:15 **A gatekeeper helix determines the substrate specificity of Sjögren-Larsson Syndrome enzyme fatty aldehyde dehydrogenase**  
Keller MA, Zander U, Fuchs JE, Kreutz C, Watschinger K, Mueller T, Golderer G, Liedl KR, Ralser M, Kräutler B, Werner ER, Marquez JA (Innsbruck, Austria; Cambridge, United Kingdom; Grenoble, France)

10:35 – 11:00 **Coffee Break**

11:00 – 12:00 **Chair:** Reibnegger G (Graz, Austria), Werner ER (Innsbruck, Austria)

### **Neopterin, Tryptophan, Radicals**

11:00 **Cloning and expression of thermophilic PTPS genes from *Anoxybacillus flavithermus* WK1 and biochemical characterization of this protein**  
Beris FS, Akyildiz E, Karaoglu H, Akyuz Turumtay E, Girgin G, Baydar T (Rize & Ankara, Turkey)

11:20 **7,8-Dihydroneopterin oxidation to neopterin in macrophages and atherosclerotic plaques**  
Gieseg SP, Roake JA, Chen A, Katouah H, Cross SP, Othman MI, Prebble H (Christchurch, New Zealand; Umm Al Qura, Saudi Arabia & MARA, Malaysia)

11:40 **Interactions of neutral pterin with the hydroxyl radical - studies using density functional theory**  
Reibnegger G (Graz, Austria)

12:00 **Indoleamine 2,3-dioxygenase expression and immune response in breast cancer patients treated with primary chemotherapy**  
Melichar B, Čermáková P, Kujovská-Krčmová L, Bartoušková M, Solichová D, Ryška Palacký A (Olomouc & Hradec Králové, Czech Republic)

12:20 **Lunch Break**

## Thursday, February 25<sup>th</sup>, 2016 – afternoon

**2:15 – 3:45**    **Chair:** *Melichar B (Olomouc, Czech Republic), Schubert C (Innsbruck, Austria)*

### *Immunity and Neuropsychiatry I*

- 2:15**    **HIV and the central nervous system: not just neuroinflammation**  
Tavano B, Tsipouri V, Keegan MR, Royle CM, Ferguson D, Almond N, Boasso A (London & Potters Bar, UK)
- 2:45**    **Serum neopterin in the course during/after anti-tau protein vaccination in patients with Alzheimer's disease - Safety and efficacy in pre-clinical and/or clinical studies on tau immunotherapeutics**  
Parrak V, Secnik P, Kontsekova E, Kovacech B, Kovac A, Katina S, Novak M (Bratislava & Lucenec, Slovak Republic)
- 3:05**    **Cause-effect relations between immune activity and sleep in a patient with prior breast cancer: A time-series analysis approach**  
Singer M, Peterlini S, Fritzsche K, Burbaum C, Bliem HR, Geser W, Fuchs D, Schubert C (Innsbruck, Austria)
- 3:25**    **Effects of complementary interventions on immune activity in a patient with prior breast cancer: A time-series analysis approach**  
Ott M, Fritzsche K, Burbaum C, Hannemann J, Fuchs D, Schubert C (Innsbruck, Austria)

**3:45 – 4:15**    **Coffee Break**

**4:15 – 4:55**    **Chair:** *Reininghaus EZ (Graz, Austria)*

### *Immunity and Neuropsychiatry II*

- 4:15**    **Depression, quality of life and immune activation in patients with solid tumors**  
Kurz K, Klaunzner M, Holzner B, Giesinger J, Willenbacher W, Fiegl M, Fuchs D (Innsbruck, Austria)
- 4:35**    **Relationship between trait aggression and plasma phenylalanine tyrosine ratio in males with *Toxoplasma gondii* seropositivity**  
Mathai AJ, Cook T, Fuchs D, Giegling I, Hartmann AM, Konte B, Friedl M, Brenner LA, Lowry C, Groer MW, Rujescu D, Postolache TT (Washington, DC, Baltimore, MD, Erie, PA, Tampa, FL, Denver, CO, USA; Halle, Germany & Innsbruck, Austria)
- 5:00**    **Annual General Assembly of the International Society of Pteridinology (ISP)**  
(ISP-members only)

**6:30**    **Conference Dinner (Guido's Restaurant; across the bridge)**



## Friday, February 26<sup>th</sup>, 2016

9:15 – 10:35 **Chair:** Boasso A (London, United Kingdom), Fallarino F (Perugia, Italy)

### *Indoleamine 2,3-dioxygenase in Immunoregulation and Allergy*

**9:15 Stem cells from human amniotic fluid exert immunoregulatory function via secreted indoleamine 2,3-dioxygenase I**

Romani R, Pirisinu I, Calvitti M, Pallotta MT, Gargaro M, Bistoni G, Vacca C, Di Michele A, Orabona C, Rosati J, Pirro M, Giovagnoli S, Matino D, Prontera P, Rosi G, Grohmann U, Talesa VN, Donti E, Puccetti P, Fallarino F (Perugia & Rome, Italy; Valencia, Spain)

**9:45 Type-1 versus type-2 epithelial differentiation determines IDO and AhR regulation: novel insights in allergy**

Zissler UM, Chaker AM, Effner R, Ulrich M, Guerth F, Piontek G, Dietz K, Regn M, Knapp B, Theis FJ, Schmidt-Weber CB (Munich & Borstel, Germany)

**10:05 Activated immune system and inflammation markers in pediatric patients with seasonal allergic conjunctivitis**

Sipahi H, Cinicib E, Palabiyik SS, Baydar T (Istanbul, Erzurum & Ankara, Turkey)

**10:15 Diagnostic and prognostic value of inflammatory parameters including neopterin in the setting of pneumonia, chronic obstructive pulmonary disease (COPD) and acute exacerbations**

Pizzini A, Zischka S, Sahanic A, Kurz K, Weiss G, Bellmann-Weiler R (Innsbruck, Austria)

### 10:35 – 10:50 *Coffee Break*

10:50 – 12:30 **Chair:** Palabiyik SS (Erzurum, Turkey), Griesmacher A (Innsbruck, Austria)

### *Laboratory Diagnostic Aspects*

**10:50 Monitoring bladder cancer patients during intravesical BCG therapy: Urinary neopterin, sTNF-R75 and sIL2R levels**

Pichler R, Fritz J, Culig Z, Fuchs D (Innsbruck, Austria)

**11:10 Immunomodulatory effects of N-chlorotaurine on macrophages and dendritic cells during phagocytosis**

Posch W, Gostner JM, Wilflingseder D, Nagl M (Innsbruck, Austria)

**11:30 Tryptophan breakdown and cognition in bipolar affective disorder**

Platzer M, Lackner N, Fellendorf F, Birner A, Bengesser SA, Queissner R, Kainzbauer N, Pilz R, Herzog-Eberhard S, Hamm C, Hörmanseder C, Maget A, Rauch P, Mangge H, Fuchs D, Zelzer S, Schwarz M, Reininghaus EZ (Graz & Innsbruck, Austria; Munich, Germany)

### 11:50 *Blair-Curtius-Pfleiderer-Wachter AWARD*

#### **Closing remarks**

Fuchs D (Innsbruck, Austria)