



**39<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**

**(22 DFP, ID 676176)**

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

**February 25<sup>th</sup> – 28<sup>th</sup>, 2020**

in

**Innsbruck, Austria**



**MEDIZINISCHE  
UNIVERSITÄT**  
INNSBRUCK

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



- Location:** **Center for Chemistry and Biomedicine (CCB)**  
**Innrain 80, Innsbruck, Austria**  
Seminar Room M01.490 (1<sup>st</sup> floor)
- Scientific Committee:** Gostner JM (Innsbruck, Austria)  
Fuchs D (Innsbruck, Austria)  
Felder T (Salzburg, Austria)  
Griesmacher A (Innsbruck, Austria)  
Melichar B (Olomouc, Czech Republic)  
Postolache TT (Baltimore, Maryland)  
Reibnegger G (Graz, Austria)  
Weiss G (Innsbruck, Austria)  
Werner ER (Innsbruck, Austria)
- 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:** 30 minutes (including 5 minutes for discussion)  
20 minutes (including 5 minutes for discussion)
- Publication:** Abstracts will be published in PTERIDINES (vol. 31, 2020)

## Organisation:

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**Tuesday, February 25<sup>th</sup>, 2020 – afternoon**

2:00 p.m. **Get-Together-Coffee**

2:30 – 4:00 **Chair:** Gostner JM (Innsbruck, Austria), Fuchs D (Innsbruck, Austria)

***Clinical Chemical and Biochemical Aspects of Pteridines – Overview of Topics***

2:30 **Opening Remarks / What is all about: Neopterin-Biopterin-Tryptophan in Biomedicine**  
Fuchs D (Innsbruck, Austria)

***Immunomodulation - Consequences and Areas of Application***

3:00 **Genetics of affective disorders in relation to tryptophan-breakdown**  
Bengesser S, Lenger M, Maget A, Dalkner N, Hamm C, Fellendorf F, Platzer M, Queissner R, Birner A, Unterweger R, Gostner JM, Fuchs D, Reininghaus EZ (Graz & Innsbruck, Austria)

3:20 **Oral tryptophan supplementation in humans and urinary excretion of kynurenine and neopterin**  
Tilz GP, Geisler S, Fuchs D, Leitner M, Gostner JM, Kapfhammer HP (Graz & Innsbruck, Austria)

3:40 **Kynurenine/tryptophan ratio positively correlates with age in adolescent chickens.**  
Mindus C, van Staaveren N, Forsythe P, Gostner JM, Kjaer JB, Kunze W, Shoveller AK, Fuchs D, Harlander A (Guelph & Hamilton, Canada; Celle, Germany; Innsbruck, Austria)

4:00 - 4:30 **Coffee Break**

4:30 – 5:40 **Chair:** Weiss G, (Innsbruck, Austria), Demetz E (Innsbruck, Austria)

***Iron and Nitric Oxide Metabolism***

4:30 **Tetrahydrobiopterin-dependent regulation of immunometabolism in inflammatory macrophages by nitric oxide**  
Diotallevi M, Nicol T, Bailey JD, McNeill E, Shaw A, Chuaiphichai S, Hale A, Starr A, Nandi M, Stylianou E, McShane H, Davis S, Fischer R, Kessler BM, McCullagh J, Channon KM, Crabtree MJ (Oxford, UK)

5:00 **Iron metabolism is a regulator of whole body cholesterol homeostasis**  
Demetz E, Tymoszuk P, Hilbe R, Heim C, Auer K, von Raffay L, Gostner JM, Tancevski I, Weiss G  
(Innsbruck, Austria)

5:20 **Lipid dyshomeostasis and the control of bacterial infection**  
Barros-Pinkelning M, Fischer C, von Raffay L, Demetz E, Weiss G (Innsbruck, Austria)

## Wednesday, February 26<sup>th</sup>, 2020 – morning

9:00 – 10:30 **Chair:** *Thedieck K (Innsbruck, Austria); Melichar B (Olomouc, Czech Republic)*

### ***Tryptophan and Neopterin Metabolism and Cancer***

9:00 **Control of oncogenic signaling by tryptophan**

Heberle AM\*, Razquin Navas P\*, Timpen LE, Barile C, Opitz C, Thedieck K  
(\*equal contribution) (Innsbruck, Austria; Groningen, The Netherlands; Oldenburg, Germany; Heidelberg, Germany)

9:30 **The MESI-STRAT consortium: exploring the crosstalk of metabolism and signaling for breast cancer patient stratification and targeted therapy design**

Heberle AM, Barile C, Timpen LE, Engele P, Opitz C, Thedieck K on behalf of the MESI-STRAT consortium (<https://mesi-strat.eu/>) (Innsbruck, Austria; Groningen, The Netherlands; Heidelberg & Oldenburg, Germany)

9:50 **Metabolic regulation of tumor progression: the role of tryptophan catabolism**

Opitz C (Heidelberg, Germany)

10:10 **Plasma kynurenine levels and kynurenine/tryptophan ratios are associated with colorectal cancer in the Austrian “Salzburg Colon Cancer Prevention Initiative” study**

Eder S, Tevini J, Schönauer U, Niederseer D, Strebing G, Gostner JM, Aigner E, Datz C, Felder TK (Salzburg, Wien, Oberndorf & Innsbruck; Austria; Zurich, Switzerland)

10:30 -11:00 **Coffee Break**

11:00 – 12:20 **Chair:** *Sperner-Unterweger B (Innsbruck, Austria); Fuchs D (Innsbruck, Austria)*

### ***Neuropsychiatry I***

11:00 **Acute and chronic mental stress both influence levels of neurotransmitter precursor amino acids**

Hüfner K, Egeter J, Fuchs D, Sperner-Unterweger B (Innsbruck, Austria)

11:20 **The role of the neuro-immune axis in high trait anxiety: modulatory effects of minocycline**

Sah A, Rooney S, Unger MS, Kharitonova M, Sartori SB, Schwarzer C, Aigner L, Kettenmann H, Wolf SA, Singewald N (Innsbruck & Salzburg, Austria; Berlin, Germany)

11:40 **Effect of minocycline on tryptophan metabolism in human PBMC**

Parrakova L\*, Sah A\*, Geisler S, Fuchs D, Singewald N, Gostner JM (\*equal contribution) (Innsbruck, Austria)

12:00 **Dynamic psycho-immunological interdependencies of stress experience in a psychodynamic interview**

Schubert C, Franzens M, Kronbichler A, Schüßler G, Fliri T, Pöll M, Fuchs D, Gostner JM Buchholz M (Innsbruck, Austria; Berlin, Germany)

12:20 - 14:00 **Lunch Break**

## Wednesday, February 26<sup>th</sup>, 2020 – afternoon

2:00 – 3:20 **Chair:** Gostner JM (Innsbruck, Austria), Pease JE (London, UK)

### ***Immunopathogenesis of Infection***

- 2:00 **Characterisation and exploitation of Group A streptococcal anti-chemotactic proteases**  
Goldblatt J, Lawrenson RA, Muir L, Dattani S, Hoffland A, Tsuchiya T, Kanegasaki S, Sriskandan S, Pease JE (London, UK; Tokyo, Japan)
- 2:20 **Serum Neopterin Levels and IDO Activity as possible prognostic markers of Hepatitis B**  
Koç D, Özhan Y, Acar ET, Bireroğlu N, Aslan F, Keğın M, Sipahi H (Istanbul, Turkey)
- 2:40 **Knock on effect of periodontitis to the pathogenesis of Alzheimer's disease.**  
Leblhuber F, Huemer J, Steiner K, Gostner JM, Fuchs D (Linz & Innsbruck, Austria)
- 3:00 **Bottom-up contribution in the pathogenesis of Alzheimer's dementia?**  
Leblhuber F, Steiner K, Geisler S, Gostner JM, Fuchs D (Linz & Innsbruck, Austria)

3:20 -3:50 **Coffee Break**

3:50 – 5:10 **Chair:** Girgin G (Ankara, Turkey), Nagl M (Innsbruck, Austria)

### ***Neopterin and Related Biomarkers, New Tools for Personalized Medicine***

- 3:50 **Neopterin as biomarker in patients treated with immunotherapy**  
Melichar B, Bartoušková M, Javorská L, Študentová H, Spisarová M, Solichová D, Kujovská-Krčmová L (Olomouc & Hradec Králové, Czech Republic)
- 4:10 **Elevated kynurenine levels in diffuse cutaneous and anti-RNA polymerase III positive systemic sclerosis**  
Campochiaro C, Lytton S, Nihtyanova S, Fuchs D, Ong VH, Denton CP (London, UK; Munich, Germany; Innsbruck, Austria)
- 4:30 **10 years Biopsychronology...the past, the present and the future**  
Hermann M, Hengster P, Troppmair J, Oberhuber R, Weissenbacher A, Maglione M, Fries D, Schneeberger S (Innsbruck, Austria)
- 4:50 **Rapid cure of a chronic wound infected with multi-resistant Staphylococcus aureus in an elderly patient with N-chlorotaurine and N-bromotaurine – a case Report.**  
Kyriakopoulos AM, Grapsa E, Marcinkiewicz J, Nagl M (Piraeus & Athens, Greece; Krakow, Poland; Innsbruck, Austria)

## Thursday, February 27<sup>th</sup>, 2020 – morning

9:00-10:40 **Chair:** Watschinger K (Innsbruck, Austria), Sailer S (Innsbruck, Austria)

### ***Tetrahydrobiopterin, AGMO and Lipid Metabolism***

- 9:00 **Alkylglycerol monooxygenase in human adipocyte stem cell differentiation**  
Sailer S, Lobenwein S, Lackner K, Rauchenwald T, Hackl H, Geley S, Golderer G, Werner-Felmayer G, Werner ER, Ploner C, Watschinger K (Innsbruck, Austria)
- 9:20 **The alkylglycerol monooxygenase deficient mouse: gene structure and physiology**  
Lackner K, Sailer S, Coassin S, Hale AB, McNeill E, Fischer C, Moralli D, Moschen AR, Keller AM, Golderer G, Werner-Felmayer G, Tegeder I, Channon KM, Davies B, Werner ER, Watschinger K (Innsbruck, Austria; Oxford, UK; Frankfurt, Germany)
- 9:40 **Another novel gene in ether-lipid metabolism**  
Werner ER, Keller MA, Sailer S, Lackner K, Koch J, Hermann M, Coassin S, Golderer G, Werner-Felmayer G, Zoeller RA, Hulo N, Berger J, Watschinger K (Innsbruck, Austria; Boston, USA; Geneva, Switzerland)
- 10:00 **Immunosuppressive activity of tetrahydrobiopterin is associated with mobilization of mast and regulatory T-cells**  
Maglione M, Nardin F, Troppmair MR, Nguyen AV, Cardini B, Troppmair J, Schäfer G, Öfner D, Schneeberger S, Watschinger K, Ebner S, Werner ER (Innsbruck, Austria)
- 11:20 **Interpreting biological phospholipidomics data by application of artificial neuronal networks**  
Oemer G\*, Koch J\*, Wohlfarter Y, Alam MT, Lackner K, Sailer S, Neumann L, Lindner H, Watschinger K, Haltmeier M, Werner ER, Zschocke J, Keller MA (\*equal contribution)  
(Innsbruck, Austria; Coventry, UK)

10:40 -11:10 **Coffee Break**

11:10-12:25 **Chair:** Postolache TT, Hoisington AJ (Baltimore, MD, USA)

### ***Neuropsychiatry and Environment I***

- 11:10 **Introduction : Physical and biological environment and neuropsychiatric health**  
Postolache, TT (Baltimore, MD, USA)
- 11:25 **Influence of the early infant gut microbiome on later childhood growth and neurodevelopment**  
Groer MW (Tampa FL, USA)
- 11:55 **Microbiome of the built environment, and interactions between inhabitants and the built environment.**  
Hoisington AJ, Brenner LA, Kinney KA, Postolache TT, Lowry CA. (Wright-Patterson AFB, OH, Aurora, CO, Austin, TX, Baltimore, MD & Boulder, CO, USA)

12:25 -1:30 **Lunch Break**

**Thursday, February 27<sup>th</sup>, 2020 – afternoon**

1:30 – 2:45 **Chair:** Postolache TT, Groer MA (Baltimore, MD, USA)

***Neuropsychiatry and Environment II***

- 1:30 **Environmental sensitivity to light deprivation and heat in seasonal affective disorder with winter versus summer pattern in the Old Order Amish**  
Yen P, Akram, F, Dagdag A, Daue M, Ryan KA, Gulati A, Jennings TB, Stiller JW, Mohyuddin H, Hoisington AJ, Snitker S, Brenner LA, Lowry CA, Postolache TT (Baltimore MD, Washington DC, Wright-Patterson AFB, OH, Aurora, CO & Boulder, CO, USA)
- 1:45 **Dental health, mood, and sleep-wake problems in the Old Order Amish**  
Postolache TT, Wadhawan A, Daue M, Dagdag A, Constantine N, Reynolds MA (Baltimore, MD & Washington DC, USA)
- 2:00 **Tryptophan metabolites and plasma cytokines across pregnancy and the postpartum in *Toxoplasma gondii* positive and negative Hispanic Women**  
Groer MA, Duffy A, Adetola LJ, Fuchs D, Postolache TT, Dutra SV (Tampa, FL & Baltimore, MD, USA; Innsbruck, Austria)
- 2:20 ***Porphyromonas gingivalis* K serotype IgG seropositivity is associated with a stronger decline in plasma tryptophan levels during pregnancy**  
Spector AM, Dagdag A, Groer MW, Wadhawan A, Ernst RK, Constantine N, Shifferle R, Yen P, Makkar H, Mohyuddin I, Harville II C, Ozorio Dutra SV, Abouhamda A, Akram F, Fuchs D, Postolache TT (Baltimore, MD, Buffalo, NY, Tampa FL, & Washington DC, USA; Innsbruck, Austria)
- 2:35 **A changing environment: Final discussion and future research brainstorming**  
Postolache, TT (Baltimore, MD, USA)

2:45 - 3:15 **Coffee Break**

3:15 – 4:55 **Chair:** Pellegrin K (Portsmouth, VA, USA), Kurz K (Innsbruck, Austria)

***Neuropsychiatry, Infection and Immune activation***

- 3:15 **Inflammation coincides with enhanced vitamin D metabolism in patients with coronary artery disease and is associated with a worse outcome**  
Kurz K, Lanser L, März W, Kleber ME, Weiss G, Fuchs D (Innsbruck, Austria; Mannheim, Germany)
- 3:35 **Inflammatory markers in patients with influenza and pneumonia**  
Corda D, Fuchs D, Geisler S, Gostner JM, Gasslitter I, Weiss G, Bellmann-Weiler R, Kurz K (Innsbruck, Austria)
- 3:55 **Fatigue, depression and quality of life in patients with post-infectious fatigue**  
Knoll M, Hofer S, Schroll A, Fuchs D, Geisler S, Gostner JM, Weiss G, Bellmann-Weiler T, Kurz K (Innsbruck, Austria)
- 4:15 **Immune-mediated changes in tryptophan and phenylalanine metabolism in patients with pneumonia**  
Hofer S, Fuchs D, Geisler S, Gostner JM, Corda D, Gasslitter I, Weiss G, Bellmann-Weiler R, Kurz K (Innsbruck, Austria)
- 4:35 **Immune activation, anemia, iron deficiency and outcome in patients with cardiovascular diseases**  
Lanser L, Fuchs D, März W, Kleber ME, Weiss G, Kurz K (Innsbruck, Austria; Mannheim, Germany)

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5:00 **Annual General Assembly of the International Society of Pteridinology (ISP) (ISP-members only)**



## Friday, February 28<sup>th</sup>, 2020 – morning

9:00 - 10:30 **Chair:** Reininghaus E (Graz, Austria), Fuchs D (Innsbruck Austria)

### ***Immune-inflammatory Markers and Neuropsychiatry II***

9:00 **Personalized cardiology - an update on immune-inflammatory markers**

Mangge H, Almer G, Zelzer S, Niedrist T, Meinitzer A (Graz, Austria)

9:30 **Homocysteine and cognitive function in bipolar disorder**

Reininghaus EZ, Gufler C, Bengesser S, Maget A, Dalkner N, Hamm C, Fellendorf F, Platzer M, Queissner R, Birner A, Ratzenhofer M, Unterweger R, Zelzer S, Mangge H, Lenger M (Graz, Austria)

9:50 **Lifestyle of patients with bipolar disorder and its relationship to the tryptophan-kynurenine metabolism**

Lenger M, Müller-Mezin S, Maget A, Dalkner N, Hamm C, Bengesser S, Fellendorf F, Platzer M, Queissner R, Birner A, Unterweger R, Gostner JM, Fuchs D, Reininghaus E (Graz & Innsbruck, Austria)

10:10 **Sex differences in zonulin in affective disorders and associations with current mood symptoms**

Maget A, Dalkner N, Hamm C, Bengesser SA, Fellendorf F, Platzer M, Queissner R, Birner A, Lenger M, Mörkl S, Kohlhammer-Dohr A, Rieger A, Seidl M, Mendel L, Färber T, Wetzlmair L, Schwalsberger K, Wurm W, Amberger-Otti DV, Schöggel H, Lahousen T, Leitner-Afschar B, Unterweger R, Zelzer S, Mangge H, Reininghaus EZ (Graz, Austria)

10:30 -10:50 **Coffee Break**

10:50 - 11:50 **Chair:** Moser S (Munich, Germany), Ganzera M (Innsbruck Austria)

### ***Phytochemicals and Immunometabolism***

10:50 **Phylloxanthobilins as overlooked components of medicinal plants - investigations on bioactivities**

Karg C, Wang P, Fuchs D, Vollmar AM, Gostner JM, Moser S (Munich, Germany; Innsbruck, Austria)

11:10 **From hidden fever to silent inflammation - Inflammation and anti-inflammatory concepts from Tibetan Medicine**

Vennos C (Wetzikon, Switzerland)

11:30 **Modulation of immunobiochemical pathways by myrobalane fruit extracts *in vitro***

Hofer S, Jenny M, Becker K, Ganzera M, Fuchs D, Ueberall F, Gostner JM (Innsbruck, Austria)

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

### ***Closing Remarks***

Fuchs D (Innsbruck, Austria)

**The 39<sup>th</sup> Winterworkshop on "Clinical, Chemical, and Biochemical Aspects of Pteridines and Related Topics" is supported with unrestricted grants from:**

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