

Richard IMRICH, MD, PhD, DSc, Prof.

- Personal info Born: 19.12.1974 in Poprad, Slovakia, married, one child
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Publishing Track Record: 135 items, 2800 citations, h index 28 (Scopus)
- 01/2023-present **Mabpro a.s., Bratislava, Slovakia**
Vice President Clinical Research
Clinical development of monoclonal antibodies against carbonic anhydrase IX in hypoxic tumors
- Preparation of the Clinical Development Plan
 - Phase I/IIb study design outline
 - Review of regulatory issues FDA and/or EMA
 - Clinical Study to Evaluate Safety and Dosing of CA9hu-1 in Patients With Advanced Solid Tumours (CAMP1) NCT05698238
- 06/2023-present **Medical Faculty, Comenius University, Bratislava**
Department of Physiology, from 09/2025 head Department of Immunology
- 11/2012-12/2024 **National Institute of Rheumatic Diseases, Piešťany, Slovakia**
General director 01/07/2017 – 30/06/2022
Center coordinator for DevelopAKUre FP7 project aimed at developing a treatment for rare metabolic disorder alkaptonuria
- coordination of multidisciplinary team for SONIA1 (EudraCT 2012-005340-24) and SONIA2 (EudraCT 2013-001633-41) clinical trials at Piešťany site and other FP7 project-related tasks
 - coordination, communication and reporting on a regular basis with ethical committee, national competent authority, investigators, monitor, project board
- 01/2003-present **Institute of Clinical and Translational Medicine, Biomedical Research Center, Slovak Academy of Sciences, head of department**
Research in neuroendocrine regulations of immunity and metabolism
- Junior and staff scientist, from 07/2007 chief of laboratory
 - Research in neuroendocrine regulations in rheumatic diseases, functional tests of the hypothalamic-pituitary and the autonomic nervous systems; functional genomics of rheumatoid arthritis
 - Multiparametric analysis in complex datasets of patients with rheumatoid arthritis (genetic, clinical, serology and cell-phenotype interactions)
 - Analyses of steroid hormones, effects of steroids on the immune system in vivo and in vitro

- Research in neuroendocrine regulations of sugar and lipid metabolism using insulin clamp methods, microdialysis and biopsies of subcutaneous fat
- Research metabolic aspects of multiple sclerosis including mitochondrial dysfunction hypothesis

2014-2020
2021-present

National Delegate Horizon 2020 - Societal Challenges 1
National Delegate Horizon Europe - Health

09/2016-07/2017

Internal medicine residency training, 1st Department of Internal Medicine, Medical Faculty, Comenius University, Bratislava

01/2005-01/2008

Clinical Neurocardiology Section, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, USA

Research in neurological autoimmune syndromes

- Detections and isolation of antibodies against neuronal acetylcholine receptors, epitope analyses
- Clinical evaluations and autonomic function testing in patients with autoimmune autonomic gangliopathy
- Planning, monitoring and patient management of experimental treatment with plasma exchange and anti-CD20+ monoclonal antibody in autoimmune autonomic gangliopathy

Research in autonomic disorders in subjects with alpha-synucleinopathies (Parkinson disease, Shy-Drager syndrome)

- Effects of toxic catecholaldehydes on catecholaminergic cell apoptosis
- Clinical testing of the autonomic nervous system, skeletal muscle microdialysis
- Neurochemical, positrone emission tomography and physiological data analyses

01/2004-06/2004

Neuroendocrine Immunology Lab., Dept. of Pharmacology, Free University of Brussels, Belgium

Research in effects of prolactin and cortisol on the immune system

- Effects of prolactin and cortisol on apoptosis, cytokine and adhesive molecules expression in T cells and macrophages

Education

2015

Doctor of Science (D.Sc.), Slovak Academy of Sciences (thesis: "Neuroendocrine Metabolic and Immune Interactions in the Pathogenesis of Autoimmunity")

2001-2003

Ph.D. study, Institute of Experimental Endocrinology, Slovak Academy of Sciences (thesis: „Interactions between hypothalamus-pituitary-adrenal and lactotrophic axes in the pathogenesis of rheumatoid arthritis “)

1995-2001

Faculty of Medicine, Comenius University, Bratislava, Slovakia (M.D.)

1993-1995 General medicine
Faculty of Natural Sciences Comenius University, Bratislava, Slovakia,
chemistry / biochemistry

Honors

2022 Crystal Wing Award
2021 Scientist of the year 2021
2017 - present Coordinator of Neuroendocrine Immune Study Group at the American
College of Rheumatology
2006 Nominated by Slovak Ministry of Health for Ministry of Education
Award for Young Scientist of Year
2004 Jonas Bohumil Guoth Award of the Slovak Medical Society Presidium
2003 European League Against Rheumatism (EULAR) Training Bursary
Award
2003 Slovak Society of Rheumatology Award

Selected invited lectures

2018 Rare Diseases: The wait for new alkaptonuria treatment may soon be
over Slovak Liaison Office for Research and Development (SLORD)
and the Permanent Representation of the Slovak Republic to the EU,
Brussels
2016 DHEA insufficiency in chronic inflammation: need for
substitution? American College of Rheumatology (ACR) 2016,
Washington D.C.
2011 Implementation of Personalized Medicine Approaches to eHealth
Infrastructure, Personalised Medicine for the European Citizen –
towards more precise medicine for the diagnosis, treatment and
prevention of disease (iPM), The Hague, October 19, 2011, From
Population Health to Personal Health (PHGENII), Rome 17-20 April
2012, Max Planck Institute of Molecular Genetics Berlin, December 6
2011
2010 Hypothalamic-pituitary-adrenal function in rheumatoid arthritis. 8th
Central European Congress of Rheumatology. 23rd–25th September
2010, Sopron, Hungary
2009 An endocrinologist's view on relative adrenocortical insufficiency in
rheumatoid arthritis. NeuroEndocrine Immunology in Rheumatic
Diseases – Translation from Basics to Clinics. 08-10.5, 2009 Genova,
Italy
2009 Mobilita slovenských vedcov medzi akademickým sektorom a
priemyslom z pohľadu akademického sektoru. Vedomostná spoločnosť
v praxi: HI-TECH SLOVENSKO. 3.4.2009 Bratislava, Slovakia
2005 Hypoglycemia and the sympathetic nervous system. Neuroendocrine
Immune Basis of the Rheumatic Diseases. 10-12.9.2005 Santa
Margherita Ligure, Genova, Italy

Research Projects History

ERA4Health, Fostering a European Research Area for Health Research (HORIZON-HLTH-2022-DISEASE-03), INSTITUTO DE SALUD CARLOS III (ISCIII), Spain, 2022-2029

Role: Co-investigator

DevelopAKUre Clinical Development of Nitisinone for Alkaptonuria (FP7 HEALTH 2012.2.4.4-1), L Ranganath (PI), 2012-2019

Role: Piastany site Center co-coordinator for SONIA 1 and SONIA 2 trials

ClinicalTrials.gov Identifier: NCT01828463, NCT01916382

APVV-21-0261 Turčáni (PI) 2021-2026

Effects of GLP-1 Analog on Multiple Sclerosis (GAMS)

Role: Co-Investigator

MZ 2018/ Turčáni (PI) 2018-2021

The use of GLP-1 analogs in the multiple sclerosis treatment (MSGLP)

Role: Co-Investigator

ClinicalTrials.gov Identifier: NCT01444833

APVV-15-0228 Imrich (PI) 2016-2020

Multiple Sclerosis: The Role of Mitochondrial Dysfunction in IR Resistance (MS-MIDY)

Role: Principal Investigator

ClinicalTrials.gov Identifier: NCT03052595

SK095 EEA/Norway Grants 2009-2011

Development of the Centre for Molecular Medicine of the Slovak Academy of Sciences as a unique modern clinical research unit in Slovakia

Role: Principal Scientific Coordinator

ATMOS N00024 2009-2012

Rheumatoid arthritis susceptibility genes in Austrian and Slovak population (RASGENAS)

Role: Principal Scientific Coordinator

Pfizer grant, Effects of Growth Hormone Supplementation to Adults With Growth Hormone Deficient on Metabolism and Adipose Tissue Molecular Phenotype (GHAT), Ukropec (PI), 2012-2015

Role: Co-Investigator

ClinicalTrials.gov identifier: NCT01616095

Central Europe Research to Innovation Models (CERIM), Werp (PI), 09/2009-08/2011

Role: Co-Investigator

03-N-0004 Clinical Laboratory Evaluation of Primary Chronic Autonomic Failure

Principal Investigator: David.S. Goldstein, MD, PhD.
Role: Co-Investigator
ClinicalTrials.gov Identifier: NCT00059033

06-N-0209 Plasma Exchange for Autoimmune Autonomic Failure
Principal Investigator: David.S. Goldstein, MD, PhD.
Role: Co-Investigator
ClinicalTrials.gov Identifier: NCT00359346

08-D-0018 Clinical and Laboratory Evaluation of the Autonomic Nervous System in Primary Sjogren's Syndrome
Principal Investigator: Nikolay Nikolov, MD, PhD.
Role: Co-Investigator
ClinicalTrials.gov Identifier: NCT00565526

VEGA 2/0187/09, 2009-2011
Single Nucleotide Polymorphism C1858T in PTPN22 Gene in Slovak Population of Patients with Rheumatoid Arthritis
Role: Principal Investigator

VEGA 2/0084/12, 2012-2014
Interaction of neuroendocrine and metabolic factors in critically ill patients.
Role: Principal Investigator

VEGA 2/6157/26, 2006-2008
Adrenals and sympathetic nervous system in pathogenesis of rheumatic diseases
Role: Principal Investigator

VEGA 2/7178/27 Radikova (PI) 2007-2009
Development of endocrine and metabolic risk factors in young patients with essential hypertension in relation to therapy
Role: Co-Investigator

MZ 2005/20-NURCH-04 Rovensky (PI) 2005-2008
Effects of chronic inflammation on metabolism in patients with rheumatic diseases
Role: Co-Investigator

MZ 2008/ Zorad (PI) 2008-2011
Changes After Angiotensin Converting Enzyme (ACE) Inhibitor Replacement by Angiotensin II Receptor Type I (AT1) Blocker (ADIRAS)
Role: Co-Investigator
ClinicalTrials.gov Identifier: NCT01444833

APVT 21-008602 Rovensky (PI) 2002 – 2005 Agency for Support of Science and Technique
Interactions between Central and Local Hormonal and Immune Factors in Pathogenesis of Rheumatoid Arthritis

Role: Co-Investigator

APVT 51-0406/02 Gasperikova (PI) 2002 – 2005

Hormonal Regulation of Lipid Metabolism Gene Expression in Adipose Tissue of Obese and Insulin Resistant Subjects

Role: Co-Investigator

QRLT-2000-00488 (PCBRISK) FP5-LIFE QUALITY, 2000-2003

Evaluating human health risk from low-dose and long-term PCB exposure.

Role: Co-Investigator

RAPS / CLUE Masi (PI), University of Illinois, College of Medicine at Peoria, Illinois, USA

Role: Consultant

Selected *in extenso* papers

1. **Imrich R**, Rovensky J, Cervenakova Z, Ksinantova L, Kvetnansky R, Koska J: Hyperprolactinemia does not influence hypothalamic-pituitary-adrenocortical function during hypoglycemia in women. *Int J Tissue React* 2002; 24(2): 73-78
2. **Imrich R**: The role of neuroendocrine system in the pathogenesis of rheumatic diseases. *Endocr Regul* 2002; 36(2): 95-106
3. **Imrich R**, Rovensky J: Reumatoidna artritida: neuroendokrinne aspekty chronickeho zapalu. (In Slovak), *Reumatologia* 2002; 16(3): 147-154
4. Rovensky J, **Imrich R**, Koska J, Kovalancik M, Killinger Z, Payer J, Vigas M, Jezova D: Cortisol elimination from plasma in premenopausal females with rheumatoid arthritis. *Ann Rheum Dis* 2003; 62(7): 674-676
5. Cebebauer L, Radikova Z, Rovensky J, Koska, **Imrich R**, Ksinantova L, Susienkova K, Vigas M, Klimes I, Langer P. Increased prevalence and coincidence of antinuclear and antithyroid antibodies in the population exposed to high levels of polychlorinated pollutants cocktail. *Endocr Regul*. 2009 Apr;43(2):75-81.
6. **Imrich R**, Bosak V, Rovensky J: Polymyalgia rheumatica and temporal arteritis: the endocrine relations and the pathogenesis. *Reumatologia* 2003; 17(1): 69-77
7. **Imrich R**: Author Response. *Endocr Regul* 2003; 37(1): 47-48
8. Langer P, Kocan A, Tajtakova M, Petrik J, Koska J, Huckova M, Hanzen E, Ksinantova L, Radikova Z, **Imrich R**, Trnovec T, Blazicek P, Sebokova E, Klimes I: Thyroid function and cholesterol level: paradoxical findings in large groups of population with high cholesterol food intake. *Endocr Regul* 2003; 37(3): 175-180
9. **Imrich R**, Tibenska E, Koska J, Rovensky J, Vigas M: Pharmacological Hyperprolactinemia Attenuates Hydrocortisone-Induced Expression of CD11b on Human CD8+ Cells In Vivo. *Neuroimmunomodulation* 2004; 11(3):133-140
10. **Imrich R**, Tibenska E, Koska J, Ksinantova L, Kvetnansky R, Bergendiova-Sedlackova K, Blazicek P, Vigas M: Repeated stress-induced stimulation of catecholamine response is not followed by altered immune cell redistribution. *Ann N Y Acad Sci* 2004; 1018: 266-272
11. **Imrich R**, Rovensky J, Zlnay M, Cervenakova Z, Macho L, Vigas M, Koska J: Hypothalamic-pituitary-adrenal axis function in ankylosing spondylitis. *Ann Rheum Dis* 2004; 63(6):671-674
12. Rovensky J, Radikova Z, **Imrich R**, Greguska O, Vigas M, Macho L: Gonadal and adrenal steroid hormones in plasma and synovial fluid of patients with rheumatoid arthritis. *Endocr Regul* 2004; 38(4): 143-149
13. Rovensky J, **Imrich R**, Bošák V, Štvrtina S, Tauchmannová H: Polymyalgia rheumatica a obrovskobuňečná arteritida. *Postgraduální medicína* 2004; 6(1): 81-87
14. Radikova Z, Koska J, Ksinantova L, **Imrich R**, Kocan A, Petrik J, Huckova M, Wsolova L, Langer P, Trnovec T, Sebokova E, Klimes I: Increased frequency of diabetes and other forms of dysglycemia in the population of specific areas of Eastern Slovakia chronically exposed to contamination with polychlorinated biphenyls (PCB). *Organohalogen Compounds* 2004; 66: 3547-3551
15. Langer P, Tajtakova M, Kocan A, Petrik J, Koska J, Ksinantova L, Radikova Z, **Imrich R**, Shishiba Y, Trnovec T, Sebokova E, Klimes I: Preliminary fundamental aspects on the thyroid volume and function in the population of long term heavily polluted area in East Slovakia. *Organohalogen Compounds* 2004; 66: 3532-3538
16. Rovensky J, **Imrich R**, Malis F, Zlnay M, Macho L, Koska J, Vigas M: Prolactin and growth hormone responses to hypoglycemia in patients with rheumatoid arthritis and ankylosing spondylitis. *J Rheumatol* 2004; 31(12): 2418-2421
17. **Imrich R**, Rovensky J, Malis F, Zlnay M, Killinger Z, Kvetnansky R, Huckova M, Vigas M, Macho L, Koska J: Low levels of dehydroepiandrosterone sulphate in plasma, and reduced sympathoadrenal response to hypoglycaemia in premenopausal women with rheumatoid arthritis. *Ann Rheum Dis* 2005; 64(2): 202-206
18. **Imrich R**, Vigas M, Rovensky J: Different threshold for prolactin response to hypoglycaemia in patients with rheumatoid arthritis? *Ann Rheum Dis* 2005; 64(3): 515
19. Rovensky J, Kvetnansky R, Radikova Z, **Imrich R**, Greguska O, Vigas M, Macho L: Hormone concentrations in synovial fluid of patients with rheumatoid arthritis. *Clin Exp Rheumatol* 2005; 23(3): 292-296
20. Rovensky J, **Imrich R**, Radikova Z, Simorova E, Greguska O, Vigas M, Macho L: Peptide hormones and histamine in plasma and synovial fluid of patients with rheumatoid arthritis and osteoarthritis. *Endocr Regul* 2005; 39(1): 1-6
21. Penesova A, Rovensky J, Zlnay M, Dedik L, Radikova Z, Koska J, Vigas M, **Imrich R**: Attenuated insulin response and normal insulin sensitivity in lean patients with ankylosing spondylitis. *Int J Clin Pharmacol Res* 2005; 25(3): 107-114
22. Radikova Z, Koska J, Huckova M, Ksinantova L, **Imrich R**, Vigas M, Trnovec T, Langer P, Sebokova E, Klimes I: Insulin sensitivity indices: a proposal of cut-off points for simple identification of insulin-resistant subjects. *Exp Clin Endocrinol Diabetes* 2006; 114(5): 249-256
23. **Imrich R**, Bosak V, Rovensky J: Polymyalgia rheumatica and temporal arteritis: The endocrine relations and the pathogenesis. Review. *Endocr Regul* 2006, 40(3): 43-49
24. Rovensky J, Raffayova H, **Imrich R**, Radikova Z, Penesova A, Macho L, Lukac J, Matucci-Cerinic M, Vigas M: Prolactin and growth hormone responses to hypoglycemia in patients with systemic sclerosis and psoriatic arthritis. *Ann N Y Acad Sci* 2006; 1069: 145-148
25. **Imrich R**: Hypoglycemia, an old tool for new findings in the adrenomedullary hormonal system in patients with rheumatic diseases. *Ann N Y Acad Sci* 2006; 1069: 98-108
26. **Imrich R**, Lukac J, Rovensky J, Radikova Z, Penesova A, Kvetnansky R, Huckova M, Vigas M, Macho L, Koska J. Lower adrenocortical and adrenomedullary responses to hypoglycemia in premenopausal women with systemic sclerosis. *J Rheumatol*. 2006 Nov;33(11):2235-41.
27. **Imrich R**, Goldstein DS, Jacobowitz DM. Prevalence of anti-locus coeruleus immunoreactivity in CSF of patients with autonomic failure. *Clin Auton Res*. 2006 Dec;16(6):401-5.
28. Goldstein DS, **Imrich R**, Peckham E, Holmes C, Lopez G, Crews C, Hardy J, Singleton A, Hallett M. Neurocirculatory and nigrostriatal abnormalities in Parkinson disease from LRRK2 mutation. *Neurology*. 2007 Jul 11

29. Goldstein DS, Holmes C, Sato T, Bernson M, Mizrahi N, **Imrich R**, Carmona G, Sharabi Y, Vortmeyer AO. Central dopamine deficiency in pure autonomic failure. *Clin Auton Res*. 2008 Mar 24;
30. Ukropec J, Penesova A, Skopkova M, Pura M, Vlcek M, Radikova Z, **Imrich R**, Ukropcova B, Tajtakova M, Koska J, Zorad S, Belan V, Vanuga P, Payer J, Eckel J, Klimes I, Gasperikova D. Adipokine Protein Expression Pattern in Growth Hormone Deficiency Predisposes to the Increased Fat Cell Size and to the Whole Body Metabolic Derangements. *J Clin Endocrinol Metab*. 2008 Mar 11;
31. Goldstein DS, Holmes C, Benth O, Sato T, Moak J, Sharabi Y, **Imrich R**, Conant S, Eldadah BA. Biomarkers to detect central dopamine deficiency and distinguish Parkinson disease from multiple system atrophy. *Parkinsonism Relat Disord*. 2008 Mar 4;
32. Skopková M, Penesová A, Sell H, Rádiková Z, Vlcek M, **Imrich R**, Koska J, Ukropec J, Eckel J, Klimes I, Gasperiková D. Protein array reveals differentially expressed proteins in subcutaneous adipose tissue in obesity. *Obesity (Silver Spring)*. 2007 Oct;15(10):2396-406.
33. Langer P, Kocan A, Tajtáková M, Rádiková Z, Petřík J, Koska J, Ksinantová L, **Imrich R**, Hucková M, Chovancová J, Drobná B, Jursa S, Bergman A, Athanasiadou M, Hovander L, Gasperiková D, Trnovec T, Seböková E, Klimes I. Possible effects of persistent organochlorinated pollutants cocktail on thyroid hormone levels and pituitary-thyroid interrelations. *Chemosphere*. 2007 Nov;70(1):110-8. Epub 2007 Aug 10.
34. Ukropec J, Penesova A, Skopkova M, Pura M, Vlcek M, Radikova Z, **Imrich R**, Ukropcova B, Tajtakova M, Koska J, Zorad S, Belan V, Vanuga P, Payer J, Eckel J, Klimes I, Gasperikova D. Adipokine Protein Expression Pattern in Growth Hormone Deficiency Predisposes to the Increased Fat Cell Size and to the Whole Body Metabolic Derangements. *J Clin Endocrinol Metab*. 2008 Mar 11.
35. Goldstein DS, Holmes C, Sato T, Bernson M, Mizrahi N, **Imrich R**, Carmona G, Sharabi Y, Vortmeyer AO. Central dopamine deficiency in pure autonomic failure. *Clin Auton Res*. 2008 Mar 24.
36. **Imrich R**, Eldadah BA, Benth O, Pechnik S, Sharabi Y, Holmes C, Grossman E, Goldstein DS. Functional effects of cardiac sympathetic denervation in neurogenic orthostatic hypotension. *Parkinsonism Relat Disord*. 2009 Feb;15(2):122-7.
37. Sharabi Y, **Imrich R**, Holmes C, Pechnik S, Goldstein DS. Generalized and neurotransmitter-selective noradrenergic denervation in Parkinson's disease with orthostatic hypotension. *Mov Disord*. 2008 Sep 15;23(12):1725-32.
38. Langer P, Kocan A, Tajtáková M, Koska J, Rádiková Z, Ksinantová L, **Imrich R**, Hucková M, Drobná B, Gasperiková D, Seböková E, Klimes I. Increased thyroid volume, prevalence of thyroid antibodies and impaired fasting glucose in young adults from organochlorine cocktail polluted area: outcome of transgenerational transmission? *Chemosphere*. 2008 Oct;73(7):1145-50. Epub 2008 Sep 14.
39. Vlcek M, Radikova Z, Penesova A, Kvetnansky R, **Imrich R**. Heart rate variability and catecholamines during hypoglycemia and orthostasis. *Auton Neurosci*. 2008 Dec 5;143(1-2):53-7.
40. **Imrich R**, Eldadah BA, Benth O, Pechnik S, Sharabi Y, Holmes C, Goldstein DS. Attenuated pre-ejection period response to tyramine in patients with cardiac sympathetic denervation. *Ann N Y Acad Sci*. 2008 Dec;1148:486-9.
41. Rovensky J, **Imrich R**, Penesova A, Radikova Z, Scipova A, Vlcek M, Vigas M. Adrenomedullary response to hypoglycemia in first-degree relatives of patients with rheumatoid arthritis. *Ann N Y Acad Sci*. 2008 Dec;1148:552-5.
42. Vlcek M, Rovensky J, Blazicek P, Radikova Z, Penesova A, Kerlik J, Kvetnansky R, **Imrich R**. Sympathetic nervous system response to orthostatic stress in female patients with rheumatoid arthritis. *Ann N Y Acad Sci*. 2008 Dec;1148:556-61.
43. Radikova Z, Rovensky J, Vlcek M, Penesova A, Kerlik J, Vigas M, **Imrich R**. Adrenocortical response to low-dose ACTH test in female patients with rheumatoid arthritis. *Ann N Y Acad Sci*. 2008 Dec;1148:562-6.
44. Goldstein DS, Holmes C, **Imrich R**. Clinical laboratory evaluation of autoimmune autonomic ganglionopathy: Preliminary observations. *Auton Neurosci*. 2009 Mar 12;146(1-2):18-21.
45. Langer P, Kocan A, Tajtáková M, Susienková K, Rádiková Z, Koska J, Ksinantová L, **Imrich R**, Hucková M, Drobná B, Gasperiková D, Trnovec T, Klimes I. Multiple adverse thyroid and metabolic health signs in the population from the area heavily polluted by organochlorine cocktail (PCB, DDE, HCB, dioxin). *Thyroid Res*. 2009 Mar 31;2(1):3.
46. **Imrich R**, Vernino S, Eldadah BA, Holmes C, Goldstein DS. Autoimmune autonomic ganglionopathy: treatment by plasma exchanges and rituximab. *Clin Auton Res*. 2009 Aug;19(4):259-62.
47. Kerlik J, Penesova A, Vlcek M, **Imrich R**, Starka L, Radikova Z. Effects of Endogenous and Exogenous Hypercortisolemia on Low-dose ACTH Test Outcome in Humans. *J Endocrinol Invest*. 2009 Jun 15.
48. **Imrich R**, Vigas M, Rovensky J, Aldag JC, Masi AT. Adrenal plasma steroid relations in glucocorticoid-naïve premenopausal rheumatoid arthritis patients during insulin-induced hypoglycemia test compared to matched normal control females. *Endocr Regul*. 2009 Apr;43(2):65-73.
49. Kerlik J, Penesova A, Vlcek M, **Imrich R**, Vogeser M, Radikova Z. Comparison of salivary cortisol and calculated free plasma cortisol during low-dose ACTH test in healthy subjects. *Clin Biochem*. 2010 Jun;43(9):764-7. Epub 2010
50. Rovenský J, **Imrich R**, Lazúrová I, Payer J. Rheumatic diseases and Klinefelter's syndrome. *Ann N Y Acad Sci*. 2010 Apr;1193(1):1-9.
51. **Imrich R**, Vlcek M, Aldag JC, Kerlik J, Radikova Z, Rovensky J, Vigas M, Masi AT. An endocrinologist's view on relative adrenocortical insufficiency in rheumatoid arthritis. *Ann N Y Acad Sci*. 2010 Apr;1193(1):134-8.
52. Penesova A, Cizmarova E, Belan V, Blazicek P, **Imrich R**, Vlcek M, Vigas M, Selko D, Koska J, Radikova Z. Insulin resistance in young, lean male subjects with essential hypertension. *J Hum Hypertens*. 2010 Jul 15
53. Langer P, Kocan A, Drobná B, Susienkova K, Radikova Z, Huckova M, **Imrich R**, Ksinantova L, Klimes I. Polychlorinated biphenyls and testosterone: age and congener related correlation approach in heavily exposed males. *Endocr Regul*. 2010 Jul;44(3):109-14.
54. Rovenský J, Vlcek M, **Imrich R**. [Cardiovascular diseases in rheumatoid arthritis]. *Vnitř Lek*. 2010 Jul;56(7):721-3.
55. Langer P, Kocan A, Drobná B, Huckova M, Radikova Z, Susienkova K, **Imrich R**, Ukropec J. Alpha-fetoprotein, carcinoembryonic antigen and beta2-microglobulin in adult population highly exposed to organochlorinated pollutants (PCB, DDE and HCB). *Endocr Regul*. 2011 Jul;45(3):149-55.

56. Killinger Z, Payer J, Lazúrová I, **Imrich R**, Homérová Z, Kužma M, Rovenský J. Arthropathy in acromegaly. *Rheum Dis Clin North Am.* 2010 Nov;36(4):713-20. Review.
57. **Imrich R**, Rovenský J. Hypothalamic-pituitary-adrenal axis in rheumatoid arthritis. *Rheum Dis Clin North Am.* 2010 Nov;36(4):721-7. Review.
58. **Imrich R**. [Activity of the hypothalamic-pituitary-adrenal axis in patients with rheumatoid arthritis]. *Vnitr Lek.* 2010 Dec;56(12):1271-3. Review..
59. Kerlik J, Rovenský J, Vogeser M, Vlcek M, **Imrich R**, Penesová A, Rádiková Z. [Evaluation of 11beta-hydroxysteroid dehydrogenase type 1 activity in female patients with rheumatoid arthritis]. *Vnitr Lek.* 2010 Dec;56(12):1274-8..
60. Langer P, Kocan A, Drobna B, Huckova M, Radikova Z, Susienkova K, **Imrich R**, Ukropec J. Alpha-fetoprotein, carcinoembryonic antigen and beta2-microglobulin in adult population highly exposed to organochlorinated pollutants (PCB, DDE and HCB). *Endocr Regul.* 2011 Jul;45(3):149-55.
61. Laukova M, Vargovic P, Csaderova L, Chovanova L, Vlcek M, **Imrich R**, Krizanova O, Kvetnansky R. Acute stress differently modulates Beta 1, Beta 2 and Beta 3 adrenoceptors in T cells, but not in B cells, from the rat spleen. *Neuroimmunomodulation.* 2012;19(2):69-78.
62. Vlcek M, Rovensky J, Eisenhofer G, Radikova Z, Penesova A, Kerlik J, **Imrich R**. Autonomic Nervous System Function in Rheumatoid Arthritis. *Cell Mol Neurobiol.* 2012 Feb 5.
63. **Imrich R**, Nikolov NP, Bebris L, Alevizos I, Goldstein DS, Holmes CS, Illei GG. Adrenomedullary Response to Glucagon in Patients with Primary Sjögren's Syndrome. *Cell Mol Neurobiol.* 2012 Feb 18.
64. Langer P, Kocan A, Drobna B, Susienkova K, Radikova Z, Huckova M, **Imrich R**, Klimes I. Blood testosterone in middle aged males heavily exposed to endocrine disruptors is decreasing more with HCB and p,p'-DDE related to BMI and lipids, but not with Σ15PCBs. *Endocr Regul.* 2012 Apr;46(2):51-9.
65. Penesova A, Galusov A, Vigas M, Vlcek M, **Imrich R**, Majek M. The role of endocrine mechanisms in ventilator-associated lung injury in critically ill patients. *Endocr Regul.* 2012 Jul;46(3):161-6.
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