

Péter Nagy

Curriculum Vitae as of August 30, 2024

Contact

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Positions Held

2022- Acting Director, Chemistry Coordinating Institute, Debrecen University
2017- Scientific Director at the National Institute of Oncology, Hungary
2011- Head of the Department of Molecular Immunology and Toxicology at the National Institute of
Oncology, Hungary
2021- Full Professor at Debrecen University, Hungary
2020- Full Professor at the University of Veterinary Medicine, Hungary
2018- Visiting Professor at Semmelweis University, Hungary
2013-2024 Director of International Relations at the National Institute of Oncology, Hungary
2015-2019 Honorary Senior Research Fellow at the University of Otago, Christchurch, Department of
Pathology, Free Radical Research Group, New Zealand
2011-2014 Honorary Research Fellow at the University of Otago, Christchurch, Department of Pathology, Free
Radical Research Group, New Zealand
2012- 2013 Deputy Director of International Relations at the National Institute of Oncology, Hungary
2010- 2011 Research Fellow at the University of Otago, Christchurch, Department of Pathology, Free Radical
Research Group, New Zealand
2010 Invited Visiting Research Fellow at the University of Washington, Department of Medicine Division
of Metabolism, Endocrinology and Nutrition, Seattle, USA
2008 - 2009 Visiting Research Fellow at the Swiss Federal Institute of Technology (ETH), Department of
Chemistry, Zurich, Switzerland
2007 - 2009 Postdoctoral Fellow at the University of Otago, Christchurch, Department of Pathology, Free Radical
Research Group, New Zealand
2004 - 2007 Postdoctoral Fellow at the University of Oklahoma, Department of Chemistry and Biochemistry,
USA

Academic Achievements

2024 Member of the Academia Europaea
2023 Fellow of the Szent István Academy of Sciences
2020 Fellow of The European Academy of Cancer Sciences
2017 Doctor of Science of the Hungarian Academy of Sciences
2012 Habilitation at Debrecen University
2004 June Ph.D. graduation at The Royal Institute of Technology (KTH), Stockholm, Sweden
2004 April Ph.D. graduation at Debrecen University (DU), Debrecen, Hungary
2003 Certificate in Environmental Monitoring (TUV Akademie, Germany)
2000 Master of Science in Chemistry, Debrecen University

Honors

Member in Editorial Boards

- 2023- *Editor: Redox Biology Special Issue (Recent advances in sulfur biology and chemistry)*
2022- *Occasional editorial duties: Proceedings of the National Academy of Sciences*
2022- *Member of the Editorial Board: Redox Biochemistry and Chemistry*
2021- *Member of the Editorial Board: Molecular Oncology*
2020- *Member of the Editorial Board: Antioxidants and Redox Signaling*
2019- *Member of the Editorial Board: Journal of Biological Chemistry*
2016- *Review Editor: British Journal of Pharmacology*
2017-2022 *Editor: Onkológia & Hematológia*
2011- *Member of the Associate Editorial Board: International Journal of Biochemistry and Molecular Biology*

Important Invited or Contributed Lectures

- 2024 Role of H₂S signaling in melanoma
Invited speaker at the 7th World Congress on Hydrogen Sulfide in Biology and Medicine, Baltimore, USA
- 2024 Cysteine metabolism in cancer
Invited speaker at the International Conference on Supersulfide Life Science, Sendai, Japan
- 2023 A transszulfurációs utak és metabolitjaik tumorspecifikus szerepei tumorprogresszióban
Speaker at the Magyar Onkológusok Társasága XXXIV. Budapest, Hungary
- 2023 Reprogrammed transsulfuration drives basal like breast cancer progression
Invited speaker at the Breast Cancer Think Tank, Budapest, Hungary
- 2023 Interactions of Reactive Sulfur Species with Human Peroxidases
Invited speaker at the 12th International Human Peroxidase Meeting, Budapest, Hungary
- 2023 Control of Cellular Functions Through Protein Cysteine Persulfidation
Invited speaker at the 4th Young Researchers' International Conference on Chemistry and Chemical Engineering (YRICCCE IV, Debrecen, Hungary)
- 2023 Cancer in the EU4Health
Speaker at the NFP4Health – Joint Actions Increasing the Capacities of National Focal Points, Budapest Workshop, Budapest, Hungary
- 2023 Cysteine metabolism in cancer
Invited speaker at the 53rd European Metabolic Group (EMG) Conference, Prague, Czech Republic
- 2023 Inequalities in cancer research – improved science with improved outreach
Conference on “Strategies to decrease inequalities in cancer therapeutics/care and prevention”, Vatican
- 2022 Reprogrammed Transsulfuration Promotes Tumor Progression via Tumor Specific Mechanisms
Invited speaker The 12th International Conference on the Biology, Chemistry and Therapeutic Applications of Nitric Oxide, The 22nd Annual Scientific Meeting of the Nitric Oxide Society of Japan, Sendai, Japan
- 2022 Reprogrammed Transsulfuration Promotes Tumor Progression via Tumor Specific Mechanisms
Invited speaker and session chair at the EMBO Workshop 2022- Thiol oxidation in biology, Sant Feliu de Guixols, Spain
- 2022 Reprogrammed Transsulfuration Promotes Basal Like Breast Tumor Progression via Realignment Cellular Cysteine-persulfidation
Invited speaker at the 24th International Conference on Oxidative Stress Reduction, Redox Homeostasis & Antioxidants "Paris Redox 2022", Paris, France
- 2022 Reactive Sulfur Species in Redox Signaling
Invited speaker/session chair at the Thiol-Based Redox Regulation and Signaling (Gordon Research Conference), Castelldefels Spain
- 2022 Selenium dependence of Persulfidation-Mediated Protection and Control of Protein Functions
Invited speaker at the 2th International Symposium on Selenium in Biology and Medicine, Honolulu, Hawaii, USA

- 2021 *Progress in understanding of the mode of action of 3-chymotrypsin-type protease enzyme inhibition*
Speaker at the Day of Hungarian Science
- 2021 *Although cysteine is not an essential amino acid, it is essential for the progression of basal breast tumors.*
Speaker at the Day of Hungarian Science
- 2021 *The role of reprogramming the transsulfuration pathways in the progression of basal subtype breast tumors through the control of protein functions by persulfation modifications*
Speaker at the XXXIV. Congress of the Society of Hungarian Oncologists'
- 2021 *Redox Biology in translational cancer research*
Central-Eastern European Oncology meets Western-Northern-Southern European Oncology: Clinical Trial Activities International Conference
- 2021 *Reprogrammed Transsulfuration Promotes Basal Like Breast Tumor Progression via Realigning Cellular Cysteine-persulfidation*
Invited speaker at the SBio 2021 Meeting - Joint meeting for Plant and Human Sulfur Biology and Glucosinolates, Sevilla, Spanyolország
- 2021 *Reprogrammed Transsulfuration Promotes Basal Like Breast Tumor Progression via Realigning Cellular Cysteine-persulfidation*
Invited seminar at the Wake Forest School of Medicine, Winston-Salem, North Carolina, USA
- 2020 *Invited speaker at the 11th International Meeting on the Biology, Chemistry and Therapeutic Applications of Nitric Oxide, Chicago, Illinois, USA*
- 2020 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the Baltic Redox Workshop 2020, Greifswald, Germany
- 2020 *Mechanistic investigations for metabolic pathways of Reactive Sulfur Species*
Invited speaker at the Gordon Research Conference on Oxygen Radicals, Ventura, California, USA
- 2019 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the 1st International Conference on Persulfide and Sulfur Metabolism in Biology and Medicine, Sendai, Japan
- 2019 *Persulfidation of cysteine residues govern protein function and provide protection during oxidative stress*
Invited speaker at the Tsukuba Molecular Life Science Seminar, Tsukuba University, Tsukuba, Japan
- 2019 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan
- 2019 *Thioredoxin system-mediated persulfidation of Cys residues controls protein function and protects them from oxidative stress*
Invited speaker at the Fukuoka University, Fukuoka, Japan
- 2019 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the National Cancer Center Japan, Tokyo, Japan
- 2019 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the Osaka Prefecture University Osaka, Osaka, Japan
- 2019 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the Hirosaki University, Hirosaki Japan
- 2019 *Control of protein function through oxidation and reduction of persulfidated states*
Invited speaker at the Doshisha University Osaka, Osaka, Japan
- 2019 *Redox-tumorbiology; an emerging field in cancer research*
Speaker at the Regional Conference on Partnership and Cooperation in Oncology, Budapest, Hungary
- 2018 *Speciation of reactive sulfur species: Do we have any clue about what's inside the cell?*
Invited Speaker at the 4th meeting of the study group for redox biology of the German Society for Molecular Biology and Biochemistry, Berlin, Germany
- 2018 *Speciation of reactive sulfur species: do we have any clue about what's inside the cell?*
Invited speaker at the Thiol-Based Redox Regulation and Signaling (Gordon Research Conference), Spain
- 2018 *Reactive sulfur species: mechanistic considerations for their regulatory functions in redox biology*
Invited Speaker and session chair/organizer of the Redox Biology section at the 2018 FEBS conference, Prague, Czech Republic
- 2018 *Dynamic redox cycling of hydrogen sulfide and polysulfide species could represent an important regulatory element in sulfur biology*
Invited Speaker and session chair/organizer at the 2018 SFRRI, Lisboa, Portugal

- 2018 Speciation of reactive sulfur species: do we have any clue about what's inside the cell?
Invited Speaker and member of the scientific advisory board at the 5th World Congress on Hydrogen Sulfide in Biology and Medicine, Toronto, Canada
- 2017 Dynamic redox cycling of hydrogen sulfide and polysulfide species could represent an important regulatory element in sulfur biology
Invited Speaker organizer of the Plant and Human Sulfur Biology Conference 2017, Balatonfüred, Hungary
- 2017 Roles of the thioredoxin and glutathione systems in reduction of inorganic- and Cys-polysulfide spec
Invited Speaker at the SE2017: The 11th International Symposium on Selenium in Biology and Medicine and The 5th International Conference on Selenium in the environment and Human health, Stockholm, Sweden
- 2017 Hydrogen Sulfide Signaling
Invited Lecture at the Redox regulation, oxidative stress and selenoproteins - Summer Graduate Course, Karolinska Institutet, Stockholm, Sweden
- 2017 Molecular models of hydrogen sulfide-mediated protection against oxidative stress
Invited Speaker at 90th Annual Meeting of Japanese Society for Bacteriology, Sendai, Japan
- 2016 Some aspects of sulfur biology from a mechanistic chemist's perspective
Invited Seminar at the Center for Molecular Medicine Cologne University Koeln, Germany
- 2016 Chemical aspects of sulfane sulfur biology
Invited Speaker at the Tohoku University Graduate School of Medicine, Sendai, Japan
- 2016 Advances and challenges in the field of H₂S biology
Invited Speaker at the Dojindo Inc. HQs in Kumamoto, Japan
- 2016 Bio-chemical aspects of thiol oxidation
Invited Seminar Kyoto University, Kyoto, Japan
- 2016 Molecular pathways in persulfide biology
Invited Speaker at the 9th International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide held jointly with the 16th Annual Scientific Meeting of the Nitric Oxide Society of Japan, Sendai, Japan
- 2016 Hydrogen sulfide, the new kid on the block in redox signaling
Invited Speaker at the Society for Free Radical Research-Europe, Budapest, Hungary
- 2016 Insights into the molecular pathways of persulfide-mediated redox signaling
Invited Speaker at the 4th International Conference on the Biology of Hydrogen Sulfide, Napoli, Italy
- 2015 Protein persulfides: Insights into the molecular mechanisms of H₂S signaling
Invited plenary lecture at the Joint Meeting of the Societies for Free Radical Research Australasia and Japan, Christchurch, New Zealand
- 2015 Mechanistic chemical perspective of thiol redox biology
Invited Speaker at the Thiol-based redox switches in life sciences ESF-EMBO conference, Sant Feliu de Guixols, Spain
- 2015 Superoxide-mediated post-translational modification of tyrosine residues
Invited Speaker at the Society for Free Radical Research- Europe meeting Stuttgart, Germany
- 2015 Hydrogen sulfide and redox signaling
Invited Speaker at the "Redox Regulation, Oxidative Stress, and Selenoproteins." Medical University of South Carolina in Charleston, S.C.
- 2015 Mechanistic Chemical Perspective of Hydrogen Sulfide Signaling
Invited Speaker at the 3rd European Conference on the Biology of Hydrogen Sulfide, Athens, Greece
- 2015 Mechanistic Chemical Perspective of Hydrogen Sulfide Signaling
Invited Speaker at the „RISE Enhancing Biomedical Sciences and Biomedical Engineering in Science and Technology” Mayagüez, Puerto Rico
- 2015 Redox biochemistry of thiol proteins and hydrogen sulfide
Invited Seminar LSU Health Shreveport, USA,
- 2014 Mechanistic consideration of sulfide- versus polysulfide-mediated signaling events from a chemist's perspective
Invited Speaker at the Third International Conference on the Biology of Hydrogen Sulfide and COST meeting, Kyoto, Japan
- 2014 Tools and techniques for gasotransmitters detection; working with gasotransmitters
Chemical aspects of gasotransmitter signaling
Invited Trainer at the Training School on Gasotransmitters Biology and Chemistry, Capri, Italy

- 2014 Kinetics and mechanisms of thiol redox reactions in relation to their biological functions
Invited Talk at the Redox Biology Seminars, Heidelberg DKFZ, Germany
- 2013 Redox Proteomics at the National Institute of Oncology;
Molecular mechanisms of BRAF V600E inhibition and acquired resistance to inhibitors of the MAPK pathway in melanoma malignum. Potential roles of Redox Regulation.
2 Invited lecture at the Hungarian Oncologists' Society's Annual Scientific Chemotherapy Congress
- 2013 Kinetics and mechanisms of thiol oxidation in biological systems
Lecture at the Debrecen Colloquium on Inorganic Reaction Mechanisms 2013 Conference, Debrecen, Hungary
- 2013 Scavenging of doxorubicin-induced peroxide species by peroxiredoxin 2 in red blood cells
Lecture at the Eu-ROS COST meeting, Budapest, Hungary
- 2013 Chemical aspects of hydrogen sulfide measurements in physiological samples
Invited lecture at the European Network on Gasotransmitters COST meeting, Athens, Greece
- 2012 Kinetics and Mechanisms of Thiol Oxidation in Biological Systems
Invited plenary lecture at the Natural Products and Related Redox Catalysts: Basic Research and Application in Medicine and Agriculture, Aveiro, Portugal
- 2012 Some Redox- and Coordination-Chemical Properties of Hydrogen Sulfide in Relation to its Biological Activities
Invited lecture at the European Network on Gasotransmitters COST meeting, Budapest, Hungary
- 2012 Redox Chemical Studies of Biological Thiols
Invited seminar at Saarbrücken University, Saarbrücken, Germany
- 2012 Interactions of Hydrogen Sulfide with Neutrophil-Derived Oxidants
Invited lecture at the First EU Conference on the Biology of Hydrogen Sulfide, Smolnice, Slovak Republic
- 2012 Reactive Oxygen Species in Cancer Research
Invited lecture at the Hungarian Oncologists' Society's Annual Scientific Chemotherapy Congress
- 2011 Novel Mechanisms for Superoxide Toxicity
Invited seminar at Debrecen University, Department of Inorganic and Analytical Chemistry Debrecen
- 2010 Mechanistic Investigation of the High Reactivity and Specificity of Peroxiredoxins with Peroxides
Invited speaker at the 19th Annual Meeting of the Society for Free Radical Research Australasia, Akaroa, New Zealand
- 2010 Chemical Aspects of Thiol Oxidation in Biology
Invited seminar at the Puget Sound Blood Center, Seattle, WA, USA
- 2010 The Jekyll and Hide Roles of Superoxide in vivo: Mechanistic Investigation of Superoxide Mediated Tyrosine Modifications on Peptides and Proteins
Invited seminar at the University of Washington, Department of Medicine, Seattle, WA, USA
- 2010 Addition of superoxide to tyrosyl radicals in peptides and proteins; a potential route for superoxide toxicity
Selected speaker at the Oxygen Radicals Gordon Research Conference, Ventura, CA, USA
- 2009 Rapid reaction of superoxide with insulin-tyrosyl radical results in hydroperoxide formation, a kinetic study.
Selected speaker at the 5th Joint Meeting of the Society for Free Radical Research (Australia and Japan) with Mutagenesis and Experimental Pathology Society of Australia, Sydney, Australia
- 2009 Neutrophil mediated oxidation of opioid peptides
Invited speaker at the Brain Health & Repair Research Centre Conference, Dunedin, New Zealand
- 2009 Mechanisms of thiol oxidation in biology. A chemist's perspective
Invited seminar at the University of Otago, Dunedin, Department of Chemistry, New Zealand
- 2009 Redox chemistry of neutrophil-derived oxidants
Invited seminar at the University of Otago, Dunedin, Department of Chemistry, New Zealand
- 2009 Superoxide mediated radical reactions of opioid peptides and proteins
Invited seminar at the University of Otago, Dunedin, Department of Chemistry, New Zealand
- 2008 Radical targets for superoxide toxicity
Invited seminar at The Swiss Federal Institute of Technology (ETH), Department of Chemistry, Zurich
- 2007 Neutrophils, our in vivo cleaning staff, use chlorine bleach to disinfect
Invited seminar at Debrecen University, Department of Inorganic and Analytical Chemistry Debrecen
- 2007 Thiocyanate is an Efficient Endogenous Scavenger of the Putative Eosinophilic Killing Agent Hypobromous Acid
Invited speaker at the 5th International Meeting on Human Peroxidases, Akaroa, New Zealand

2005 Reactive Sulfur Species: Kinetics and Mechanisms of the Oxidation of Cystine Derivatives by Hypochlorous Acid *Invited speaker at the 57th Southeast/61st Southwest Joint Regional Meeting of the American Chemical Society, Memphis, Tennessee, USA*

Awards

2022 The Research Centre of the National Institute of Oncology has been awarded the status of Excellent Research Site (4 May 2022 - 30 June 2027) of MTA (Hungarian Academy of Sciences)

2021 As a result of the restructuring activities, in 2021, The National Institute of Oncology Research Center was awarded the title of “TOP50 - Excellent Research Infrastructure”

2021 The National Tumor Biology Laboratory was established within the National Laboratories Programme. The National Laboratories Programme supports 18 Hungarian and internationally recognized scientific areas. Out of these 18 laboratories, a total of 4 laboratories have received an excellent rating, including the National Tumor Biology Laboratory

2019 Bolyai Plakett (Recognition of the Hungarian Academy of Sciences for the best scientific achievement among János Bolyai Research Scholars)

2019 Honorary Professor at Debrecen University, Hungary

2015 Honorary Associate Professor at Debrecen University, Hungary

2011 ESF-EMBO Young Investigator Travel Award to the “Glutathione and Related Thiols in Living Cells ESF-EMBO symposium”.

2006 Young Investigator Travel Award to the “5th International Meeting on Human Peroxidases”

2001 Knut and Alice Wallenberg’s Foundation Award

1999 Second place at the XXIV. National Science Competition for Undergraduate Students, Hungary

1993 Finalist of the National Chemistry Competition for high school students, Hungary

Scholarships

2019-2020 JSPS International Fellowship for Research in Japan
To invite overseas researchers with excellent records for research achievements to collaborate with Japanese colleagues in carrying out research through long-term visits.

2015 János Bolyai Research Scholar of the Hungarian Academy of Sciences

2011-2015 Marie Curie International Reintegration Grant Fellow

2003 Ph.D. scholarship at The Royal Institute of Technology (KTH), Stockholm, Sweden

2001 Exchange Ph.D. student at KTH for 1 semester (Socrates Erasmus scholarship)

1999 - 2000 Exchange undergraduate student at KTH for 2 semesters (Socrates Erasmus scholarship)

1998 Exchange undergraduate student at KTH for 1 semester (Grant for talented young scientists, sponsored by Schering Plough pharmaceutical company)

Foreign Languages

Hungarian: Native language

English: Fluent, language of professional activities

Swedish: Conversational level (Elementary and Advanced Beginners courses and certificates at KTH)

German: Conversational level (Elementary course and certificate at DU)

Organizational, Advisory or Chair Roles at Meetings

2022 Chief Organizer at the 6th World Congress on Hydrogen Sulfide in Biology and Medicine

2021 Organizer at the XXXIV. Society of Hungarian Oncologists’ Congress

2021 Organizer at the Central-Eastern European Oncology meets Western-Northern-Southern European Oncology: Clinical Trial Activities International Conference

2020 Discussion leader at the Gordon Research Conference on Thiol-Based Redox Regulation & Signaling

- 2019 Organizer at the XXXIII. Society of Hungarian Oncologists' Congress
- 2019 Co-organizer at the 1st International Conference on Persulfide and Sulfur Metabolism in Biology and Medicine
- 2019 Session chair and organizer at the FAMÉ, Budapest
- 2018 Session chair Nitric Oxide Society meeting dedicated to the 20th anniversary of the 1998 Nobel Prize in Medicine for the discovery of NO as a signaling molecule, Oxford, England
- 2018 Chair and organizer of the Redox Biology section at the 2018 FEBS conference
- 2018 Session chair/organizer at the 2018 SFRRRI, Lisboa, Portugal
- 2018 Member of the International Advisory Board at the 5th World Congress on Hydrogen Sulfide in Biology and Medicine
- 2017 Member of the Scientific Advisory Board and local organizer at the Plant and Human Sulfur Biology Conference
- 2017 Co-Chair and organizer of the „Kékgolyó napok” seminar series
- 2016 Member of the International Scientific Committee of the 9th International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide held jointly with the 16th Annual Scientific Meeting of the Nitric Oxide Society of Japan
- 2016 Member of the International Advisory Board at the 4th International Conference on the Biology of Hydrogen Sulfide
- 2016 Member of the International Scientific Committee of the Society for Free Radical Research-Europe
- 2015 Member of the Scientific Organizing Committee of the XXXI. National Meeting of Hungarian Oncologists
- 2013 2nd European Conference on the Biology of Hydrogen Sulfide, Chair and advisor of the "Cancer and Therapeutic potential of H₂S manipulation" section

Society Memberships

- 2024- Chief Scientific Officer for Life Sciences for HUN-REN's President
- 2023- Board Member of the Healthy Life Focus Area Innovation Board
- 2023- Medical Research Council – National Medical Research Center Committee member
- 2021- Society of Hungarian Oncologists' – Founding member of the Experimental Oncology and Pathology Section
- 2021- Society of Hungarian Oncologists' – Council member of the Oncodermatology Section
- 2020- Institutional Expert for Rare Diseases at the National Public Health Center
- 2020- Hungarian delegate in the European Partnerships under Horizon Programme for Research and Innovation
- 2020- Professional Association of Tissue- and Cell bank, regenerative medicine - Secretary
- 2020- Medical Research Council – Scientific Research Ethics Committee member
- 2020- Society for Free Radical Research -Europe
- 2020- Society for Redox Biology & Medicine
- 2020- IARC Scientific Council member
- 2018- European Society for Medical Oncology
- 2017- European Association for Cancer Research- Hungarian Representative
- 2017- Society of Hungarian Oncologists' Secretary-General
- 2012 - European Network on Gasotransmitters BM-1005 COST Management committee
- 2013 - EU-ROS BM-1203 COST Management committee substitute
- 2012- Society of Hungarian Young Oncologists
- 2011- Society of Hungarian Oncologists'
- 2008 - Society for Free Radical Biology and Medicine, USA
- 2007 - Society for Free Radical Research, Australia
- 2007 - 2008 Society for Biochemistry and Molecular Biology, New Zealand
- 2006 - 2007 American Association for the Advancement of Science
- 2005 - American Chemical Society
- 2001 - Alumni for Europe

Evaluation of proposals, PhD theses and applications for professorships and promotions

- NIH, ERC, Horizon2020, Horizon Europe, DKFZ, Johns Hopkins University, University of Otago, Sidney University
- Teaching international students and senior researchers from Karolinska University, University of Dusseldorf, University of Montana, Sendai University, University of Bratislava, Charles University

Research Output

Research Interests

Research in my Laboratory

The major area of our scientific interest is centered on reprogramming of metabolic and cellular signaling pathways in cancer. The primary focus of our research activities lies within redox regulation of protein functions, antioxidant defense mechanisms and alterations of transsulfuration pathways. These processes play critical roles in oncogenesis, tumor progression, immune-response/suppression and in the development of resistance to currently applied therapies. Therefore, better understanding the underlying fundamental mechanisms behind the observed alterations in these processes in cancer vs normal vs immune cells will likely lead to novel and more effective therapeutic interventions.

Activities in EU Research Consortia

I represent the National Institute of Oncology as the coordinator in a number of EU projects (see above). Our wide scale research activities are dedicated to improving cancer care in a patient centered pan-European manner.

Patents

Two submitted patents with the purpose of drug development from the results of basic and translational research.

Publications

*Corresponding author

According to an analysis utilizing a citation index by Stanford University, mentioned individually by name in the top 0.5% of researchers worldwide

Book Chapters

6. Dorottya Garai, Zoltán Pálinkás, József Balla, Anthony J. Kettle, **Péter Nagy***
Measurements for sulfide-mediated inhibition of myeloperoxidase activity
In: Bełtowski J. (eds) Vascular Effects of Hydrogen Sulfide. **Methods in Molecular Biology**, vol 2007. Humana, New York, NY (2019) 179-203. [PubMed Link](#)
5. Éva Dóka, Elias S. J. Arnér, Edward E. Schmidt, **Péter Nagy***.
ProPerDP, a Protein Persulfide Detection Protocol
In: Bełtowski J. (eds) Vascular Effects of Hydrogen Sulfide. **Methods in Molecular Biology**, vol 2007. Humana, New York, NY (2019) 51-77. [PubMed Link](#)

4. Christopher Kevil, Miriam M. Cortese-Krott, **Péter Nagy**, Martin Feelisch, Csaba Szabo
Cooperative interactions between NO and H₂S: chemistry, biology, physiology, pathophysiology
Nitric Oxide Biology and Pathobiology 3rd Edition Ignarro L.J., Ed. Elsevier: (2017) 57-83 Invited chapter.
3. **Péter Nagy***
Mechanistic Chemical Perspective of Hydrogen Sulfide Signaling
Methods in Enzymology, Hydrogen Sulfide in Redox Biology Part A & B (2015) 554, 3-29. Invited chapter. [PubMed Link](#)
2. **Péter Nagy***, Christine C. Winterbourn
Redox chemistry of biological thiols
Advances in Molecular Toxicology, Fishbein, J.C., Ed. Elsevier: Amsterdam, The Netherlands, (2010), Vol. 4, pp. 183-222. Invited review.
1. **Péter Nagy**, Julie D. Becker, Rachael C. Mallo, Michael T. Ashby
The Jekyll and Hyde Roles of Cysteine Derivatives During Oxidative Stress
New Biocides Development: The Combined Approach of Chemistry and Microbiology, Zhu, P., Ed. ACS Press: Washington, D.C., (2007), pp. 193-212.

Peer Reviewed Research Articles

120. Zoltán Kiss Tamás G Szabó, Csaba Polgár, Zsolt Horváth, **Péter Nagy**, Ibolya Fábrián, Valéria Kovács, György Surján, Zsófia Barcza, István Kenessey, András Wéber, István Wittmann, Gergő Attila Molnár, Eszter Gyöngyösi, Angéla Benedek, Eugenia Karamousouli, Zsolt Abonyi-Tóth, Renáta Tamás Bartókné, Diána Viktória Fürtös, Krisztina Bogos, Judit Moldvay, Gabriella Gálffy, Lilla Tamási, Veronika Müller, Zoárd Krasznai, Gyula Ostoros, Zsolt Pápai-Székely, Anikó Maráz, Gabriella Branyiczkiné Géczy, Lászlóné Hilbert, Tamás Berki, György Rokszin, Zoltán Vokó
Revising cancer incidence in a central european country: a hungarian nationwide study between 2011-2019 based on a health insurance fund database
Frontiers in Oncology (2024)
119. Tamás Gáll, Dávid Pethő, Katalin Erdélyi, Virág Egri, Jázon György Balla, Annamária Nagy, Annamária Nagy, Szilárd Póliska, Magnus Gram, Róbert Gábel, **Péter Nagy**, József Balla, György Balla
Heme: a link between hemorrhage and retinopathy of prematurity progression
Redox Biology (2024)
118. Petra Parrag, Mária Dobozi, István Szatmári, András Wéber, **Péter Nagy**, Csaba Polgár, István Kenessey
The pitfalls of lung cancer coding practices based on the evaluation of the National Cancer Registry
Magyar Onkológia (2024) 68, 115-123 [PubMed Link](#)
117. István Kenessey, István Szilágyi, Mária Dobozi, **Péter Nagy**, Csaba Polgár
The role of National Cancer Registry in the assessment of Hungarian cancer epidemiology
Orvosi Hetilap (2024) 165, 925-932. [PubMed Link](#)
116. Wéber András, Szatmári István, Dobozi Mária, Kéki Zsuzsanna, Hilbert Lászlóné, Branyiczkiné Géczy Gabriella, **Nagy Péter**, Kásler Miklós, Polgár Csaba, Kenessey István
County differences in incidence and mortality of malignant neoplasms in Hungary between 2005 and 2019
Magyar Onkológia (2024) 68, 95-112. [PubMed Link](#)
115. Tomas Majtan, Thomas Olsen, Jitka Sokolova, Jakub Krijt, Michaela Křížková, Tomoaki Ida, Tamás Ditrói, Hana Hansikova, Ondrej Vit, Jiri Petrak, Ladislav Kuchař, Warren D. Kruger, **Péter Nagy**, Takaaki Akaike, Viktor Kožich
Deciphering pathophysiological mechanisms underlying cystathionine beta-synthase-deficient homocystinuria using targeted metabolomics, liver proteomics, sphingolipidomics and analysis of mitochondrial function
Redox Biology (2024) 73, 103222

114. Thomas Olsen, Kathrine J. Vinknes, Kristýna Barvíková, Emma Stolt, Sindre Lee-Ødegård, Hannibal Troensegaard, Hanna Johannessen, Amany Elshorbagy, Jitka Sokolová, Jakub Krijt, Michaela Křížková, Tamás Ditrói, **Péter Nagy**, Bente Øvrebø, Helga Refsum, Magne Thoresen, Kjetil Retterstøl, Viktor Kožich *Dietary sulfur amino acid restriction in humans with overweight and obesity: Evidence of an altered plasma and urine sulfurome, and a novel metabolic signature that correlates with loss of fat mass and adipose tissue gene expression*
Redox Biology (2024) 73, 103192 [PubMed Link](#)
113. Erika Tóth, Zsófia Kürönya, Edina Soós, Tamás Pintér, Henriett Butz, Zsolt Horváth, Erzsébet Csernák, Vince Kornél Grolmusz, Judit Székely, Tamás Strausz, József Lövey, Levenete Jánvári, László Báthory-Fülöp, **Péter Nagy**, Csaba Polgár, Attila Patócs *Application of comprehensive molecular genetic profiling in precision cancer medicine, Hungarian experiences*
Acta Oncologica (2024) [PubMed Link](#)
112. Theodora Panagaki, Lucia Janickova, Dunja Petrovic, Karim Zuhra, Tamás Ditrói, Eszter P Jurányi, Olivier Bremer, Kelly Ascensão, Thilo M Philipp, **Péter Nagy**, Milos R Filipovic, Csaba Szabo *Neurobehavioral dysfunction in a mouse model of Down syndrome: upregulation of cystathionine β -synthase, H_2S overproduction, altered protein persulfidation, synaptic dysfunction, endoplasmic reticulum stress, and autophagy*
Geroscience (2024) [PubMed Link](#)
111. Edsjö, A., Russnes, H. G., Lehtiö, J., Tamborero, D., Hovig, E., Stenzinger, A., Rosenquist, R., & PCM4EU consortium *High-throughput molecular assays for inclusion in personalised oncology trials - State-of-the-art and beyond*
Journal of Internal Medicine (2024) [PubMed Link](#)
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