Surname (other surnames): Yegutkin (Egutkin)
First name(s): Gennady (Gennadi)
Researcher Identifier: https://orcid.org/0000-0001-6684-7982
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Education and degrees completed

December 2008	**Docent** tenure **(*Adjunct Professor*)** at the Faculty of Medicine, University of Turku (UTU) in the area of "Enzyme immunology" (Diploma #746/141/2008)
October 1989	**Candidate of Biological Sciences** (*equivalent to **PhD**)* in Biochemistry & Endocrinology. Institute of Endocrinology and Metabolism, Kiev, Ukraine
1984 – 1987	**Postgraduate Student**. Institute of Radiobiology, Academy of Sciences of Belarus, Minsk, Belarus
1979 – 1984	**Master of Science.** Faculty of Biology, Department of Biochemistry, Belarus State University, Minsk, Belarus (finished with excellence)

Current employment and previous work experience

June 1998 – present	**Senior Scientist**, Docent, MediCity Research Laboratory, UTU, Finland.
April 1997 – May 1998	**Senior Research Fellow**, Royal Free Hospital, University College London, England.
November 1987 – March 1997	**Scientific Researcher**, Institute of Radiobiology, Academy of Sciences of Belarus, Minsk, Republic of Belarus.

Research output

My research focus for the past 25 years has been to investigate cellular metabolism in various pathophysiological states. I have especially contributed to the papers dealing with role of purine-converting enzymes in cancer, inflammation and vascular remodelling. Overall, I have >**100** publications including six *Invited Review Articles*. These papers have been cited **6000** times (*h-index* **43**; Web of Science™, April 2026). For a complete list of publications, see https://www.ncbi.nlm.nih.gov/myncbi/gennady.yegutkin.3/bibliography/public/

Research supervision and leadership experience

Principal supervisor (PS) or co-supervisor (co-S) for: Bachelor's thesis of *Camilla Tallgren* (Turku University of Applied Sciences; May 2011, PS) • Master of Science (MSc) thesis of *Mikko Helenius* (UTU; March 2011, PS) • PhD thesis of *Mariachiara Zuccarini* (University of Chieti-Pescara, Italy; April 2015, PS) • PhD thesis of *Mikko Helenius* (University of Helsinki; October 2015, co-S) • MSc thesis of *Marius Paul* (University of Bonn [UB], Germany; May 2019, PS) • MSc thesis of *Nora Kreisig* (UB, September 2024, PS) • MSc thesis of *Samuel Svärd* (UTU; November 2024, PS) • PhD thesis of *Karolina Losenkova* (UTU; March 2025, PS) • MSc thesis of *Julia Baier* (UB, April 2026, PS). Currently, I am supervising PhD Theses of *Samuel Svärd* (UTU, PS), and *Shaghayegh Hasanpour* (UTU, co-S), and MSc theses of *Ursula von Danwitz* (UB, PS).

The following visiting researchers, undergraduate and PhD students received training in MediCity under my supervision: Dr. *Nathalie Mercier* (Nancy, France; 2008–2010) • *Anne Meyer* (UB, April–June 2014) • *Justyna Kowal* (University of Copenhagen, Denmark, December 2014) • *Mariachiara Zuccarini* (University of Chieti-Pescara, Italy, September 2014 – February 2015) • *Valeria Quarona* (University of Torino, Italy, April 2015) • *Octavia Cadassou* (University of Lyon, France, January – February 2017) • *Karolina Losenkova* (Moscow Institute of Physics, Russia, October 2015 – November 2017) • *Julian Zeiner* (UB, May – October 2017) • *Marius Paul* (UB, January – May 2018) • *Corinna Weiler* (UB, May – October 2021) • *Nora Kreisig* (UB, May – October 2023) • *Joanna Pomeroy* (University of Portsmouth, UK, July 2024) • *Ursula Johanna von Danwitz* (UB, May – October 2025) • *Julia Baier* (UB, July 2025 – February 2026).

Lecturing activity: oral presentations and invited lectures (selected from the last 5 years)

- University of Iceland, Reykjavik, Iceland (June 2022).
- 3rd International Meeting of Purinergic Signaling, Buzios, Brazil (September 2022).
- 1st eCOST PRESTO meeting, Ferrara, Italy *(February 2023)*
- University of Portsmouth, Portsmouth, The United Kingdom *(April 2023).*
- 2nd eCOST PRESTO meeting, Pisa, Italy *(September 2023)*
- 2nd Adenosine-Pathway Cancer Immunotherapy Summit, Boston, USA *(June 2023)*
- Duke University School of Medicine, Durham, USA *(June 2023).*
- University Medical Center Hamburg-Eppendorf, Hamburg, Germany *(November 2023).*
- University of Coimbra, Coimbra, Portugal *(March 2024)*
- University of Bonn, Bonn, Germany *(July 2024)*
- 2nd European Purine Meeting, Ferrara, Italy (*September 2024*)
- 4th eCOST PRESTO meeting, Dublin, Ireland *(May 2025)*
- 5th eCOST PRESTO meeting, Portsmouth, The United Kingdom *(February 2026)*

Along with a primary focus on supervising research and student training, I gave an annual course of topical lectures to student of the Medical Faculty (UTU, Finland) in 2008-2022.

Awards, honours and other key academic merits

Awards, prizes and honours. 1993: Winner of the National Academy of Sciences of Belarus Award among young scientists • 1994: International George Soros prize • 2006: Elias Thillands Award (BioCity Turku, Finland), for co-authorship in the manuscript of Salmi et al. (Immunity, 2005) • 2010 – 2018: My Review (Yegutkin, *Biochim Biophys Acta,* 2008) was ranked as a "highly cited paper" in the top 1% in the field of Molecular Biology & Genetics (974 citations, Web of Science™) • 2025: Our Review (Yegutkin & Boison, *Pharm Rev,* 2022) was ranked as a "hot paper" in the top 0.1% in the field of Pharmacology & Toxicology (136 citations).

Scientific expert positions. Appointed as Reviewer for the following Journals (selected): Biochemistry • Biochim Biophys Acta • Cell Reports • Crit Care Med • Curr Med Chem • eLife • Eur J Biochem • Eur J Immunol • FASEB J • FEBS Lett • J Biol Chem • J Med Chem • J Mol Cell Cardiol • J Mol Med • Mol Cancer • Nature Commun • Nature Rev Nephrol • PLOS One • Purinergic Signaling • Science Signaling • Structure • Trends Cancer • Trends Mol Med.

Assessment of PhD dissertations.

- *Kudira Ramesh,* University of Bern, Switzerland (March 2016). Role: External Referee
- *Rahila Rahimova,* University of Montpellier, France (September 2017). Examinator
- *Eduardo Petrotto,* University of Pisa, Italy (January 2019). External Referee
- *Michel Dosch,* University of Bern, Switzerland (June 2019). External Referee

Review Panels. Appointed as External Reviewer for evaluating grant proposals submitted to the following foundations: National Research Centre of Poland • Natural Sciences and Engineering Research Council of Canada • and KWF Dutch Cancer Society.

Clinical relevance of our research and connection with industry

I was subcontracted in 2011 – 2013 by Faron Pharmaceuticals (Finland) for coordinating the research aimed to evaluate serum CD73 activities in patients with acute respiratory distress syndrome. Since December 2015, I am a Consultant of ORION PHARMA (Finland) in relation to the company's activities in the field of immuno-oncology. Since December 2016, I have provided consulting and research services to Tizona Therapeutics, Inc. (USA). Based on our competitive analysis, fully human anti-CD39 antibody, TTX-030, was selected and is currently in Phase I Clinical Trials (NCT04306900 & NCT03884556) (Spatola et al., MAbs 2020).

Gennady G. Yegutkin, List of Publications (updated in April 2026)

I have over **100** publications, including six *Review Articles* and four Book Chapters. Note, in early articles published in former USSR Journals my name was spelled as **Gennadi Egutkin.**

The below papers have been cited **6000** times (*h-index* **43**; *Science Citation Index*).

* Corresponding author

Original Articles and Reviews in International Peer-Reviewed Journals:

1. Gorecki DC, Adinolfi E, Adriouch S, Coutinho-Silva R, Engel T, Gölöncsér F, Haag F, Illes P, Jacobson KA, Koch-Nolte F, Mansoor SE, Matute C, Melino G, Novak I, Pegoraro A, Pelegrin P, Piacentini M, Robson SC, Rumney RMH, Seman M, Sluyter R, Sperlagh B, Tang Y, Tarantini M, Ulrich H, Vouret-Craviari V, Ye Q, **Yegutkin GG**, Verkhratsky A (2026) Methodological guidelines for P2X receptor assays and data interpretation. *Cell Death & Disease*, in press
2. Dobelmann C, Schmies CC, Rolshoven GW, Scortichini M, Wagner S, Isaak A, Idris RM, Dabel J, Grey L, Losenkova K, Moschütz S, Al Hroub H, Keim A, Höppner S, Sandholm J, Boström P, Hollmén M, Sträter N, Hermann S, **Yegutkin GG**, Jacobson KA, Schelhaas S, Müller CE, Junker A (2026) Fluorine-18-Labeled Nucleotide Analogs Targeting Ecto-5'-Nucleotidase (CD73) for Positron Emission Tomography Imaging of Solid Tumors. *Angewandte Chemie* 65(17): e22758
3. Pomeroy J, Borczyk M, Kawalec M, Hajto J, Carlson E, Svärd S, Verma S, Bareke E, Boratyńska-Jasińska A, Dymkowska D, Mellado-Ibáñez A, Laight D, Zabłocki K, Occhipinti A, Majewska L, Angione C, Majewski J, **Yegutkin GG**, Korostynski M, Zabłocka B, Górecki DC (2025) Spatiotemporal diversity in molecular and functional abnormalities in the mdx dystrophic brain. *Mol Med* 31(1): 108
4. Lehtonen H, Jokela H, Hofmann J, Tola L, Mehmood A, Ginhoux F, Becher B, Greter M, **Yegutkin GG**, Salmi M, Gerke H, Rantakari P (2025) Early precursor-derived pituitary gland tissue-resident macrophages play a pivotal role in modulating hormonal balance. *Cell Rep* 44(2): 115227
5. Burns N, Nijmeh H, Lapel M, Riddle S, **Yegutkin GG**, Stenmark KR, Gerasimovskaya E (2023) Isolation of vasa vasorum endothelial cells from pulmonary artery adventitia: Implementation to vascular biology research. *Microvasc Res* 147: 104479
6. **Yegutkin GG***, Boison D* (2022) ATP and adenosine metabolism in cancer: exploitation for therapeutic gain (Review). *Pharmacol Rev* 74 (3): 797-822
7. Losenkova K, Takeda A, Ragauskas S, Cerrada-Gimenez M, Vähätupa M, Kaja S, Paul ML, Schmies CC, Rolshoven G, Müller CE, Sandholm J, Jalkanen S, Kalesnykas G, **Yegutkin GG*** (2022) CD73 controls ocular adenosine levels and protects retina from light-induced phototoxicity. *Cell Mol Life Sci* 79: 152
8. Scortichini M, Idris RM, Moschütz S, Keim A, Salmaso V, Dobelmann C, Oliva P, Losenkova K, Irjala H, Vaittinen S, Sandholm J, **Yegutkin GG**, Sträter N, Junker A, Müller CE, Jacobson KA (2022) Structure–Activity Relationship of 3-Methylcytidine-5′-α, β-methylene-diphosphates as CD73 Inhibitors. *J Med Chem* 65(3): 2409-2433
9. Kobayashi D, Sugiura Y, Umemoto E, Takeda A, Ueta H, Hayasaka H, Matsuzaki S, Katakai T, Suematsu M, Hamachi I, **Yegutkin GG**, Salmi M, Jalkanen S, Miyasaka M (2021) Extracellular ATP limits homeostatic T cell migration within lymph nodes. *Front Immunol* 12: 786595

10. **Yegutkin GG*** Adenosine metabolism in the vascular system (Review) (2021) Biochem Pharmacol 114373
11. Petruk N, Tuominen S, Åkerfelt M, Mattsson J, Sandholm J, Nees M, Yegutkin GG, Jukkola A, Selander KS (2021) CD73 facilitates EMT progression and promotes lung metastases in triple-negative breast cancer. Sci Rep 11: 6035
12. Spatola BN, Lerner AG, Wong C, Dela Cruz T, Welch M, Fung W, Kovalenko M, Losenkova K, **Yegutkin GG**, Beers C, Corbin J, Soros VB (2020) Fully human anti-CD39 antibody potently inhibits ATPase activity in cancer cells via uncompetitive allosteric mechanism. mAbs 12: e1838036
13. Schmies CC, Rolshoven G, Idris RM, Losenkova K, Renn C, Schäkel L, Al-Hroub H, Wang Y, Garofano F, Schmidt-Wolf IG, Zimmermann H, **Yegutkin GG**, Müller CE (2020) Fluorescent probes for ecto-5'-nucleotidase (CD73). *ACS Medicinal Chemistry Letters* 11: 2253-2260
14. Losenkova K, Zuccarini M, Karikoski M, Laurila J, Boison D, Jalkanen S, **Yegutkin GG*** (2020) Compartmentalization of adenosine metabolism in cancer cells and its modulation during acute hypoxia. *J Cell Sci* 133: jcs.241463
15. Boison D*, **Yegutkin GG*** (2019) Adenosine metabolism – emerging new concepts for cancer therapy (Review). *Cancer Cell* 36: 582-596
16. Bhattarai S, Pippel J, Meyer A, Freundlieb M, Schmies C, Abdelrahman A, Fiene A, Lee SY, Zimmermann H, El-Tayeb A, **Yegutkin GG**, Strater N, Muller CE (2019) X-ray co-crystal structure guides the way to subnanomolar competitive ecto-5'-nucleotidase (CD73) inhibitors for cancer immunotherapy. *Advanced Therapeutics* 2: 1900075
17. Zeiner J, Loukovaara S, Losenkova K, Zuccarini M, Korhonen AM, Lehti K, Kauppinen A, Kaarniranta K, Müller CE, Jalkanen S, **Yegutkin GG*** (2019) Soluble and Membrane-bound Adenylate Kinase and Nucleotidases Augment ATP-mediated Inflammation in Diabetic Retinopathy Eyes with Vitreous Haemorrhage. *J. Mol Med* 97: 341-54
18. Junker A, Renn C, Dobelmann C, Namasivayam V, Jain S, Losenkova K, Irjala H, Duca S, Balasubramanian R, Chakraborty S, Borgel F, Zimmermann H, **Yegutkin GG**, Müller CE, Jacobson KA (2019) Structure-activity relationship of purine and pyrimidine nucleotides as ecto-5'nucleotidase (CD73) inhibitors. *J Med Chem* 62: 3677-95
19. Losenkova K, Zuccarini M, Helenius M, Jacquemet G, Gerasimovskaya E, Tallgren C, Jalkanen S, **Yegutkin GG*** (2018) Endothelial cells cope with hypoxia-induced depletion of ATP via activation of cellular purine turnover and phosphotransfer networks. *Biochim Biophys Acta – Mol Basis Disease 1864, 1804-15*
20. Kauffenstein G, **Yegutkin GG**, Khiati S, Pomozi V, Le Saux O, Leftheriotis G, Lenaers G, Henrion D, Martin L (2018) Alteration of Extracellular Nucleotide Metabolism in Pseudoxanthoma Elasticum. *J Invest Dermatol* 138, 1862-70
21. Song A, Zhang Y, Han L, **Yegutkin GG**, Liu H, Sun K, D'Alessandro A, Li J, Karmouty-Quintana H, Iriyama T, Weng T, Zhao S, Wang W, Wu H, Nemkov T, Subudhi A, Jameson-Van Houten S, Julian C, Lovering A, Hansen K, Zhang H, Bogdanov M, Dowhan W, Jin J, Kellems R, Eltzschig H, Blackburn M, Roach R, Xia Y (2017) Erythrocytes retain hypoxic adenosine response for faster acclimatization upon re-ascent. *Nat Commun* 8, 14108
22. Loukovaara S, Sandholm J, Aalto K, Liukkonen J, Jalkanen S, **Yegutkin GG*** (2017) Deregulation of ocular nucleotide homeostasis in patients with diabetic retinopathy. *J Mol Med* 95, 193-204

23. **Yegutkin GG**, Guerrero-Toro C, Kilinc E, Koroleva K, Ishchenko Y, Abushik P, Giniatullina R, Fayuk D, Giniatullin R (2016) Nucleotide homeostasis and purinergic nociceptive signaling in rat meninges in migraine-like conditions. *Purinerg Signal* 12, 561-74

24. Liu H, Zhang Y, Wu H, D'Alessandro A, **Yegutkin GG**, Song A, Sun K, Li J, Cheng NY, Huang A, Edward Wen Y, Weng TT, Luo F, Nemkov T, Sun H, Kellems RE, Karmouty-Quintana H, Hansen KC, Zhao B, Subudhi AW, Jameson-Van Houten S, Julian CG, Lovering AT, Eltzschig HK, Blackburn MR, Roach RC, Xia Y (2016) Beneficial Role of Erythrocyte Adenosine A2B Receptor-Mediated AMP-Activated Protein Kinase Activation in High-Altitude Hypoxia. *Circulation* 134, 405-21

25. Tuuminen R, **Yegutkin GG**, Jalkanen S, Loukovaara S (2016) Simvastatin use associated with low intraocular ADP levels in patients with sight-threatening diabetic retinopathy. *Graefe's Arch Clin Exp Ophthalm* 254, 1643-44

26. Antonioli L, **Yegutkin GG**, Pacher P, Blandizzi C, Haskó G. (2016) Anti-CD73 in Cancer Immunotherapy: Awakening New Opportunities (Review). *Trends Cancer* 2, 95-109

27. Lazar A, Mullner N, Lucattelli M**,** Korcan C, Cicko S, **Yegutkin GG**, De Cunto G, Muller T, Meyer A, Hossfeld M, Sorichter S, Horvath I, Virchow SJ, Robson SC, Lungarella G, Idzko M. (2016) NTPDase1/ CD39 and aberrant purinergic signalling in the pathogenesis of COPD. *Eur Respir J* 47, 254-63

28. Elovaara H, Huusko T, Maksimow M, Elima K, **Yegutkin GG**, Skurnik M, Dobrindt U, Eerola E, Siitonen A, McPherson MJ, Salmi M, Jalkanen S (2015) *Escherichia coli* primary amine oxidase is involved in metabolic pathways and can use human leukocyte molecules as substrates *PLoS ONE* 10, e0142367

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31. Bhattarai S, Freundlieb M, Meyer A, Fiene A, Lee SY, Abdelrahman A, Herbert Zimmermann H, **Yegutkin GG**, El-Tayeb A, Müller CE (2015) α,β-Methylene-ADP (AOPCP) derivatives and analogues: development of potent and selective ecto-5′-nucleotidase (CD73) inhibitors. *J Med Chem* 58, 6248-63

32. Jalkanen J, **Yegutkin GG**, Hollmen M, Aalto, K, Kiviniemi TO, Salomaa V, Jalkanen S, Hakovirta HH (2015) Aberrant circulating levels of purinergic signaling markers are associated with several key aspects of peripheral atherosclerosis and thrombosis. *Circ Res* 116, 1206-15

33. **Yegutkin GG**, Auvinen K, Rantakari P, Hollmen M, Karikoski M, Grenman R, Elima K, Jalkanen S, Salmi M (2015) Ecto-5'-nucleotidase/CD73 enhances endothelial barrier function and sprouting in blood but not lymphatic vasculature. *Eur J Immunol* 45, 562-73

34. Loukovaara S, Sahanne S, Jalkanen S, **Yegutkin GG** (2015) Increased intravitreal adenosine 5'-triphosphate, adenosine 5'-diphosphate and adenosine 5'-monophosphate levels in patients with proliferative diabetic retinopathy. *Acta Ophthalmol* 93, 67-73

35. Gnad T, Scheibler S, von Kugelgen I, Scheele C, Kilic A, Glöde A, Hoffmann LS, Reverte L, Horn P, Mutlu S, El-Tayeb A, Kranz M, Deuther-Conrad W, Brust P, Lidell ME, Betz M, Enerbäck S, Schrader J, **Yegutkin GG**, Muller CE, Pfeifer A. (2014) Adenosine activates brown adipose tissue and recruits beige adipocytes via A2a receptors. *Nature* 516, 395-9

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40. Maksimow M, Kyhälä L, Nieminen A, Kylänpää L, Aalto K, Elima K, Mentula P, Lehti M, Puolakkainen P, **Yegutkin GG**, Jalkanen S, Repo H, Salmi M. (2014) Early prediction of persistent organ failure by soluble CD73 in patients with acute pancreatitis. *Crit Care Med* 42, 2556-64
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Vascular amine oxidases are needed for leukocyte extravasation into inflamed joints in vivo. *Arthritis & Rheumatism* 54, 2852-62

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