

## Vassilis Tzounakas (BSc, MSc, PhD)

Assistant Professor, Department of Biochemistry, School of Medicine, University of Patras, Asklipiou str. 1, 26504  
Rio-Patras

[Researchgate](#), [Scopus](#), [Google Scholar](#), [Web of Science](#) email: [vtzounakas@upatras.gr](mailto:vtzounakas@upatras.gr) phone number: 2610997519

### Career and Education

- **2022-today:** Assistant Professor, Department of Biochemistry, School of Medicine, University of Patras (UP)
- **2017-today:** Participation in courses of MSc programs of the UP, the National and Kapodistrian University of Athens (NKUA) and the University of West Attica (UniWA).
- **2019-2022:** Selection and assignment of independent teaching of the courses “Cellular and Molecular Biology”, “Biochemistry” and “Plant Physiology”, Department of Agricultural Development, Agrofood and Management of Natural Resources, NKUA
- **2018:** Selection and assignment of independent teaching of the course “Advanced Topics of Cellular Biology”, Department of Biology, School of Science, NKUA
- **2015-2022:** Postdoctoral Researcher in the field of blood biochemistry, metabolism and physiology. Division of Cell Biology and Biophysics, Department of Biology, School of Science, NKUA.
- **2011-2015:** PhD Thesis entitled: “Red blood cell aging and death signaling in vivo and in vitro”. Division of Cell Biology and Biophysics, Department of Biology, School of Science, NKUA. Supervisor: Professor Emeritus, Dr. Issidora Papassideri.
- **2009-2011:** Interdepartmental MSc “Applications of Biology in Medicine”. MSc Thesis entitled “The effect of storage conditions on erythrocyte aging or death signaling in blood units intended for transfusion”. Division of Cell Biology and Biophysics, Department of Biology, School of Science, NKUA. Supervisor: Professor Emeritus, Dr. Issidora Papassideri.
- **1999-2009:** BSc, Department of Biology, School of Science, NKUA.
- **Foreign Languages:** English (C1), French (B2)

### Fellowships and Grants

- **2023-today:** Supervisor of a research grant “EHA Topic-in-Focus Junior Research Grant 2023” funded by the European Hematology Association. Principal Investigator (PI): Dr. Alkmini Anastasiadi.
- **2023-today:** PI of a “MEDICUS” research grant funded by the UP
- **2020-2022:** Research Fellow of a research grant by the State Scholarships Foundation (I.K.Y.): “Reinforcement of Postdoctoral Researchers - 2nd Cycle”, in the framework of the act (MIS-5033021) of the Operational Programme “Human Resources Development, Education and Lifelong Learning, (ΕΣΠΑ 2014-2020)”. Scholarship contract number: 2019-050-0503-18369.
- **2018-2021:** PI of a research grant: “1st Call for H.F.R.I. research projects to support Postdoctoral Researchers”.
- **2016-2017:** Research Fellow of a research grant by the State Scholarships Foundation (I.K.Y.): “IKY Fellowships of Excellence for Postgraduate Studies in Greece – Siemens Program”, in the framework of a compromise agreement between the Hellenic Republic and Siemens, regarding the granting of scholarships by I.K.Y. for postdoctoral research in Greece, starting in the academic year 2016-2017”.
- **2011-2014:** Biologist, external collaborator in a Research program of the Hellenic Society of Transfusion Therapy. PI: Professor Emeritus, Dr. Issidora Papassideri.

- **2013:** Biologist, external collaborator in the Research program “ARCHIMIDES III” MIS 375784 entitled: “support for research teams of the Technological Institute of Athens”. PI: Professor Anastasios Kriebardis

## **Publications and Participation in Congresses**

**Total number of publications:** 37

**Number of citations:** 869 (Scholar), 699 (Scopus)

**h-index:** 17 (Scholar), 15 (Scopus)

**Mean Impact Factor:** 4.05

**Total Impact Factor:** 141.8

**Participation in national/international congresses/invited talks:** 36/20/4

## **Original Articles**

1. Giannaki A, Georgatzakou HT, Fortis SP, Anastasiadi AT, Pavlou EG, Nomikou EG, Drandaki MP, Kotsiafti A, Xydaki A, Fountzoula C, Papageorgiou EG, **Tzounakas VL**, Kriebardis AG. Stratification of  $\beta\text{S}\beta+$  compound heterozygotes based on L-glutamine administration and RDW: Focusing on disease severity. *Antioxidants* 2023, 12(11), 1982; 10.3390/antiox12111982
2. Anastasiadi AT, Stamoulis K, Papageorgiou EG, Lelli V, Rinalducci S, Papassideri IS, Kriebardis AG, Antonelou MH, **Tzounakas VL**. The time-course linkage between hemolysis, redox, and metabolic parameters during red blood cell storage with or without uric acid and ascorbic acid supplementation. *Frontiers in Aging* 4:1161565; 10.3389/fragi.2023.1161565
3. **Tzounakas VL**, Anastasiadi AT, Arvaniti V-Z, Lelli V, Fanelli G, Paronis EC, Apostolidou AC, Balafas EG, Kostomitsopoulos NG, Papageorgiou EG, Papassideri IS, Stamoulis K, Kriebardis AG, Rinalducci S, Antonelou MH. Supplementation with uric and ascorbic acid protects stored red blood cells through enhancement of non-enzymatic antioxidant activity and metabolic rewiring. *Redox Biology* 57 (2022) 102477, 10.1016/j.redox.2022.102477
4. Anastasiadi AT, **Tzounakas VL**, Dzieciatkowska M, Arvaniti V-Z, Papageorgiou EG, Papassideri IS, Stamoulis K, D’Alessandro A, Kriebardis AG, Antonelou MH. Innate Variability in Physiological and Omics Aspects of the Beta Thalassemia Trait-Specific Donor Variation Effects. *Frontiers in Physiology* 2022, 13:907444; 10.3389/fphys.2022.907444
5. **Tzounakas VL**<sup>§</sup>, Anastasiadi AT, Karadimas DG, Velentzas AD, Anastasopoulou VI, Papageorgiou EG, Stamoulis K, Papassideri IS, Kriebardis AG, Antonelou MH<sup>§</sup>. Early and Late-Phase 24h Responses of Stored Red Blood Cells to Recipient-Mimicking Conditions. *Frontiers in Physiology* 2022, 13:907497 10.3389/fphys.2022.907497 (**μετά από προσωπική πρόσκληση στο ειδικό τεύχος “Rising Stars in Red Blood Cell Physiology: 2022”**) <sup>§</sup>**equal correspondence**
6. Anastasiadi AT, Arvaniti V-Z, Paronis EC, Kostomitsopoulos NG, Stamoulis K, Papassideri IS, D’Alessandro A, Kriebardis AG, **Tzounakas VL**<sup>#</sup>, Antonelou MH<sup>#</sup>. Corpuscular Fragility and Metabolic Aspects of Freshly Drawn Beta-Thalassemia Minor RBCs Impact Their Physiology and Performance Post Transfusion: A Triangular Correlation Analysis In Vitro and In Vivo. *Biomedicines* 2022 10, 530; <https://doi.org/10.3390/biomedicines10030530> **#equal last and corresponding authors**
7. **Tzounakas VL**, Anastasiadi AT, Lekka ME, Papageorgiou EG, Stamoulis K, Papassideri IS, Kriebardis AG, Antonelou MH. Deciphering the relationship of free and enclosed in extracellular vesicles hemoglobin in stored red blood cells. *Frontiers in Physiology* 2022 13:840995; 10.3389/fphys.2022.840995
8. Anastasiadi AT, Paronis EC, Arvaniti V-Z, Velentzas AD, Apostolidou AC, Balafas EG, Dzieciatkowska M, Kostomitsopoulos NG, Stamoulis K, Papassideri IS, D’Alessandro A, Kriebardis AG, Antonelou MH<sup>#</sup>, **Tzounakas VL**<sup>#</sup>. The post-storage performance of RBCs from beta-thalassemia trait donors is related to their storability profile. *International Journal of Molecular Sciences* 2021, 22(22), 12281; <https://doi.org/10.3390/ijms222212281> **#equal last and corresponding authors**

9. Anastasiadi AT\*, **Tzounakas VL\***, Arvaniti V-Z, Dzieciatkowska M, Stamoulis K, Lekka ME, Papassideri IS, D'Alessandro A, Kriebardis AG and Antonelou MH. Red blood cell proteasome in beta-thalassemia trait: topology, activity, and networking in blood bank conditions. *Membranes* 2021, 11(9), 716; <https://doi.org/10.3390/membranes11090716> **\*equal first authors**
10. **Tzounakas VL**, Anastasiadi AT, Valsami SI, Stamoulis KE, Papageorgiou EG, Politou M, Papassideri IS, Kriebardis AG, Antonelou MH. Osmotic hemolysis is a donor-specific feature of red blood cells under various storage conditions and genetic backgrounds. *Transfusion* 2021 doi:10.1111/trf.16558.
11. **Tzounakas VL**, Stamoulis KE, Anastasiadi AT, Papassideri IS, Kriebardis AG, Rinalducci S, Antonelou MH. Leukoreduction makes a difference: a pair proteomics study of extracellular vesicles in red blood cell units. *Transfus Apher Sci.* 2021, 103166, <https://doi.org/10.1016/j.transci.2021.103166>.
12. **Tzounakas VL\***, Anastasiadi AT\*, Dzieciatkowska M, Karadimas DG, Stamoulis K, Papassideri IS, Hansen KC, D'Alessandro A, Kriebardis AG, Antonelou MH. Proteome of stored RBC membrane and vesicles from heterozygous beta thalassemia donors. *International Journal of Molecular Sciences* 2021, 22, 3369. <https://doi.org/10.3390/ijms22073369> **\*equal first authors**.
13. **Tzounakas VL\***, Anastasiadi AT\*, Stefanoni D, Cendali F, Bertolone L, Gamboni F, Dzieciatkowska M, Rousakis P, Vergaki A, Soullakis V, Tsitsilonis OE, Stamoulis K, Papassideri IS, Kriebardis AG, D' Alessandro A, Antonelou MH. Beta-thalassemia minor is a beneficial determinant of red blood cell storage lesion. *Haematologica* 2022 107(1):112-125 <https://doi.org/10.3324/haematol.2020.273946> **\*equal first authors**
14. **Tzounakas VL**, Dzieciatkowska M, Anastasiadi AT, Karadimas DG, Vergaki A, Siourounis P, Stamoulis K, Papassideri IS, Kriebardis AG, D' Alessandro A, Antonelou MH. Red cell proteasome modulation by storage, redox metabolism and transfusion. *Blood Transfusion* 2022 20: 27-39 DOI 10.2450/2020.0179-20
15. **Tzounakas VL\***, Anastasiadi AT\*, Drossos PV, Karadimas DG, Valsami SI, Stamoulis KE, Papassideri IS, Politou M, Antonelou MH, Kriebardis AG. Sex-related aspects of the red blood cell storage lesion. *Blood Transfus* 2021 May;19(3):224-236. doi: 10.2450/2020.0141-20. **\*equal first authors**.
16. Georgatzakou HT, **Tzounakas VL**, Velentzas AD, Papassideri IS, Kokkalis AC, Stamoulis KE, Kriebardis AG, Antonelou MH. Recipient's effects on stored red blood cell performance: the case of uremic plasma. *Transfusion.* Jun;59(6):1900-1906. doi: 10.1111/trf.15257.
17. **Tzounakas VL**, Gevi F, Georgatzakou HT, Zolla L, Papassideri IS, Kriebardis AG, Rinalducci S, Antonelou MH. Redox Status, Procoagulant Activity, and Metabolome of Fresh Frozen Plasma in Glucose 6-Phosphate Dehydrogenase Deficiency. *Front. Med.* 2018 Feb 5;5:16. doi: 10.3389/fmed.2018.00016.
18. Reisz JA\*, **Tzounakas VL\***, Nemkov T, Voulgaridou AI, Papassideri IS, Kriebardis AG, D'Alessandro A, Antonelou MH. Metabolic Linkage and Correlations to Storage Capacity in Erythrocytes from Glucose 6-Phosphate Dehydrogenase-Deficient Donors. *Front Med (Lausanne)*. 2018 Jan 11;4:248. doi: 10.3389/fmed.2017.00248. **\*equal first authors**.
19. **Tzounakas VL**, Karadimas DG, Anastasiadi AT, Georgatzakou HT, Kazepidou E, Moschovas D, Velentzas AD, Kriebardis AG, Zafeiropoulos NE, Avgeropoulos A, Lekka M, Stamoulis KE, Papassideri IS, Antonelou MH. Donor-specific individuality of red blood cell performance during storage is partly a function of serum uric acid levels. *Transfusion.* 2018 Jan;58(1):34-40. doi: 10.1111/trf.14379.
20. Georgatzakou HT, **Tzounakas VL**, Kriebardis AG, Velentzas AD, Kokkalis AC, Antonelou MH, Papassideri IS. Short-term effects of hemodiafiltration versus conventional hemodialysis on erythrocyte performance. *Can J Physiol Pharmacol.* 2017 Aug 30:1-9. doi: 10.1139/cjpp-2017-0285.
21. Georgatzakou HT, **Tzounakas VL**, Kriebardis AG, Velentzas AD, Papageorgiou EG, Voulgaridou AI, Kokkalis AC, Antonelou MH, Papassideri IS. Pathophysiological aspects of red blood cells in end-stage renal disease patients resistant to recombinant human erythropoietin therapy. *Eur J Haematol.* 2017 Jun;98(6):590-600. doi: 10.1111/ejh.12875.
22. **Tzounakas VL**, Anastasiadi AT, Karadimas DG, Zeqo RA, Georgatzakou HT, Pappa OD, Papatzitze OA, Stamoulis KE, Papassideri IS, Antonelou MH, Kriebardis AG. Temperature-dependent haemolytic propensity of CPDA-1 stored

- erythrocytes versus whole blood - Red cell fragility as a donor's signature on blood units. *Blood Transfus* 2017 Sep;15(5):447-455. doi: 10.2450/2017.0332-16.
23. **Tzounakas VL**, Kriebardis AG, Georgatzakou HT, Foudoulaki-Paparizos LE, Dzieciatkowska M, Wither MJ, Nemkov T, Hansen KC, Papassideri IS, D'Alessandro A, Antonelou MH. Data on how several physiological parameters of stored red blood cells are similar in glucose 6-phosphate dehydrogenase deficient and sufficient donors. *Data Brief*. 2016 Jun 23;8:618-2. doi: 10.1016/j.dib.2016.06.018.
24. **Tzounakas VL**, Kriebardis AG, Georgatzakou HT, Foudoulaki-Paparizos LE, Dzieciatkowska M, Wither MJ, Nemkov T, Hansen KC, Papassideri IS, D'Alessandro A, Antonelou MH. Glucose 6-phosphate dehydrogenase deficient subjects may be better "stomers" than donors of red blood cells. *Free Radic Biol Med*. 2016;96:152-65. doi: 10.1016/j.freeradbiomed.2016.04.005.
25. Kriebardis AG, Antonelou MH, Georgatzakou HT, **Tzounakas VL**, Stamoulis KE, Papassideri IS. Microparticles variability in fresh frozen plasma: preparation protocol and storage time effects. *Blood Transfus* 2016, May;14(2):228-37. doi: 10.2450/2016.0179-15.
26. **Tzounakas VL**, Georgatzakou HT, Kriebardis AG, Voulgaridou AI, Stamoulis KE, Foudoulaki-Paparizos LE, Antonelou MH, Papassideri IS. Donor variation effect on red blood cell storage lesion: a multivariable, yet consistent, story. *Transfusion* 2016 Jun;56(6):1274-86. doi: 10.1111/trf.13582.
27. **Tzounakas VL**, Georgatzakou HT, Kriebardis AG, Papageorgiou EG, Stamoulis KE, Foudoulaki-Paparizos LE, Antonelou MH, Papassideri IS. Uric acid variation among regular blood donors is indicative of red blood cell susceptibility to storage lesion markers: A new hypothesis tested. *Transfusion* 2015;55:2659-71. doi: 10.1111/trf.13211.
28. Antonelou MH, Georgatzakou HT, **Tzounakas VL**, Velentzas AD, Kokkalis AC, Kriebardis AG, Papassideri IS. Blood modifications associated with end stage renal disease duration, progression and cardiovascular mortality: a 3-year follow up pilot study. *Journal of Proteomics*, 101:88-101. doi: 10.1016/j.jprot.2014.02.009.
29. Antonelou MH, **Tzounakas VL**, Velentzas AD, Stamoulis KE, Kriebardis AG, Papassideri IS. Effects of pre-storage leukoreduction on stored red blood cells signaling: a time-course evaluation from shape to proteome. *Journal of Proteomics*, 76, 220-238. doi: 10.1016/j.jprot.2012.06.032.

### **Review Articles**

30. Trifylli EM, Kriebardis AG, Koustas A, Papadopoulos N, Vasileiadi S, Fortis SP, Tzounakas VL, **Anastasiadi AT**, Sarantis P, Papageorgiou EG, Tsagarakis A, Aloizos G, Manolakopoulos S, Deutsch M. The arising role of extracellular vesicles in Cholangiocarcinoma: a rundown of the current knowledge regarding diagnostic and therapeutic approaches. *International Journal of Molecular Sciences*, 2023 24(21), 15563; doi: 10.3390/ijms242115563
31. D'Alessandro A, **Anastasiadi AT**, Tzounakas VL, Nemkov T, Reisz JA, Kriebardis AG, Zimring JC, Spitalnik SL, Busch MP. Red Blood Cell Metabolism In Vivo and In Vitro. *Metabolites* 2023, 13, 793; 10.3390/metabo13070793
32. Anastasiadi AT\*, **Tzounakas VL\***, Kriebardis AG, Stamoulis KE, Seghatchian J and, Antonelou MH. When I need you most: frozen red blood cells for transfusion. *Transfus Apher Sci*, 2020 Jun;59(3):102786. doi: 10.1016/j.transci.2020.102786. **\*equal first authors.**
33. **Tzounakas VL\***, Valsami SI\*, Kriebardis AG, Papassideri IS., Seghatchian J, Antonelou MH. Red cell transfusion in paediatric patients with thalassaemia and sickle cell disease: Current status, challenges and perspectives. *Transfus Apher Sci*, 2018 Jun;57(3):347-357. doi: 10.1016/j.transci.2018.05.018. **\*equal first authors.**
34. **Tzounakas VL**, Karadimas DG, Papassideri IS, Seghatchian J, Antonelou MH. Erythrocyte-based drug delivery in Transfusion Medicine: Wandering questions seeking answers. *Transfus Apher Sci*. 2017 Aug;56(4):626-634. doi: 10.1016/j.transci.2017.07.015.
35. **Tzounakas VL**, Seghatchian J, Grouzi E, Kokoris S, Antonelou MH. Red blood cell transfusion in surgical cancer patients: Targets, risks, mechanistic understanding and further therapeutic opportunities. *Transfus Apher Sci*. 2017 Jun;56(3):291-304. doi: 10.1016/j.transci.2017.05.015.

36. **Tzounakas VL**, Kriebardis AG, Seghatchian J, Papassideri IS, Antonelou MH. Unraveling the Gordian knot: red blood cell storage lesion and transfusion outcomes. *Blood Transfus* 2017 Mar;15(2):126-130. doi: 10.2450/2017.0313-16.
37. **Tzounakas VL**, Kriebardis AG, Papassideri IS, Antonelou MH. Donor-variation effect on red blood cell storage lesion: A close relationship emerges. *Proteomics Clin Appl*. 2016;10:791-804. doi: 10.1002/prca.201500128.

### **Peer-Reviewing Role**

57 peer reviews in the journals Transfusion, Current Issues in Molecular Biology, International Journal of Molecular Sciences, Antioxidants, Journal of Clinical Medicine, Scientific Reports, Biology, Journal of Blood Medicine, Journal of Proteomics, Nutrients, Biomedicines, Blood Advances, Diagnostics, Frontiers in Physiology, iScience, Journal of International Medical Research, Transfusion and Apheresis Science

### **Guest Editor**

**2022-2023:** Special Issue «State-of-the-Art and Novel Approaches in Molecular and Translational Medicine in Europe», Biomedicines

### **Participation in the Translation of Books**

**2018:** Molecular Biology of the Cell, by Alberts B, Johnson A, Lewis J, Morgan D, Raff M, Roberts K and Walter P. Garland Science, 6th Edition, 2015, for Utopia Publishing group, participation in the translation of chapter 10, “Membrane Structure”.

### **Awards and Distinctions**

- **2022:** Plenary award, 33<sup>rd</sup> Hellenic Congress of Hematology
- **2021:** Best Poster presentation award, 31<sup>st</sup> Regional Congress of the International Society of Blood Transfusion (ISBT In Focus - Virtual)
- **2015, 2018:** Best Poster presentation award, 26<sup>th</sup> και του 29<sup>th</sup> Hellenic Congress of Hematology