

BIOGRAPHICAL SKETCH

Bratasz, Anna	Senior Research Associate
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INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Science and Technology, Krakow, Poland	MSc	1992-97	Medical Physics and Dosimetry
Jagiellonian University, Krakow, Poland	PhD	1997-2002	Biophysics
Johns Hopkins University, Baltimore, MD	Res. Fellow	2002	Mol. & Cellular Biophysics
Ohio State University, Columbus, OH	Post Doct Res.	2002-2008	Mol. & Cellular Biophysics
Ohio State University, Columbus, OH	Senior Research Associate	2008-	Mol. & Cellular Biophysics

A. Positions and Honors

1994; 1 month	Student training, Biochemical Laboratory, Laboratory of Proteins and Hormones, Specjalistic Krakow City Hospital of G. Narutowicz, Krakow, Poland
1995; 1 month	Student training, Clinic of Radiology, Collegium Medicum, Jagiellonian University, Krakow, Poland
1996; 1 month	Student training, Laboratory of Cancer Radiospectroscopy and Radiobiology, Jagiellonian University, Krakow, Poland
May-Jul 2002	Visiting Fellow, Department of Medicine, Johns Hopkins University, Baltimore, MD
Aug -Oct 2002	Visiting Fellow, Department of Int. Medicine, Ohio State University, Columbus, OH
Nov 2002 – Apr 2008	Post Doctoral Researcher, Department of Int. Medicine, Ohio State University, Columbus, OH
May 2008 -	Senior Research Associate, Department of Int. Medicine, Ohio State University, Columbus, OH

Honors

- Award of the Royal Capital City of Krakow in the field of Science and Technology for the book “Nitric Oxide in Transplant Rejection and Anti-tumor Defense” based on the research of a team of Scientists including: Dr M. Elas, Dr B. Płonka, Dr K. Ciężka, Dr S. Pająk, Dr B. Płonka, A. Bratasz M.Sc. and J. Pawlus M.Sc., performed under the direction of Prof. Dr Stanisław Łukiewicz, Krakow 8.06.1999
- Conference fellowship – Foundation for Polish Science, 2002
- Young Investigator Awards for best presentation in the Workshop on EPR Studies of Viable System and Related Technique in Dartmouth, 19-23 September 2004

B. Selected Peer-reviewed Publications

1. M. Elas, J. Raczek, **A. Bratasz**, B. Rudnicka, K. Krawczyk, R. Szypułka, K. Hodor, S. Łukiewicz, Paramagnetic Centers Observed in Human Tumors by EPR Technique, *Current Topics in Biophysics*, 1999, 23: 39-45
2. M. Elas, J. Raczek, **A. Bratasz**, K. Krawczyk, T. Zając, S. Maczuga, S. Łukiewicz, Nitric Oxide Detectable by EPR Spectroscopy in Cancer Patients, *Biology of Nitric Oxide*, 6th International Meeting Stockholm, 1999; *Acta Physiologica Scandinavica* 1999 Sep, vol.167(supp.): 645
3. **A. Bratasz**, M. Elas, P. Gałka, M. Moskala, I. Goscinski, S. Lukiewicz, Nitric Oxide in Cerebrospinal Fluid of Patient with Brain Diseases, *First International Conference Biology, Chemistry and Therapeutic Applications of Nitric Oxide*, San Francisco, 2000; *Nitric Oxide*, 2000, 4(3): 267
4. M. Elas, J. Raczek, **A. Bratasz**, K. Krawczyk, T. Zając, S. Maczuga, S. Łukiewicz, Nitric Oxide Detectable by Electron Paramagnetic Resonance Spectroscopy in Cancer Patients, *The Biobogy of Nitric Oxide*, Eds. S. Moncada, L. Gustafsson, P. Wiklund, E. A. Higgs, Portland Press Proceedings, London 2000, part 7, p. 83
5. Tyrak J, Moskala M, Gościński I, Krupa M, Traczewski W, Gałka P, Łukiewicz S, **Bratasz A**, The First Experiences with Continuous Monitoring of SjO₂, Lactat and NO During the Acute Phase of the Severe Head Injury, *Medical Science, Monitor, International Medical Journal for Experimental and Clinical Research*, May 2001, 7 (supp.2): 27
6. **Bratasz A.**, Łukiewicz S., Gałka P., Gościński I., Krupa M., Determination of Nitric Oxide Level in Cerebrospinal Fluid use Electron Paramagnetic Resonance Spectroscopy, *XI Meeting of Polish Society for Biophysics*, 7.09.2001, Cieszyn, *Current Topics in Biophysics*, 2001, 25(1): 60

7. **A. Bratasz**, B. Polok, I. Kuter, I. Gościński, W. Traczewski, M. Krupa, M. Moskała, P. Gałka, R. Konior, S. Łukiewicz, Generation of Nitric Oxide as a Predictive Parameter in Medicine, *Current Topics in Biophysics*, 2002, vol. 26(1): 89-96
8. **A. Bratasz**, B. Polok, I. Kuter, P. Galka, M. Krupa, M. Moskała, R. Konior, I. Goscinski, S. Lukiewicz, EPR Determination of Nitric Oxide and Ceruloplasmin in Cerebrospinal Fluid of Patients with Brain Diseases, Tenth Scientific Meeting, International Society for Magnetic Resonance in Medicine, 18-24 May 2002, Honolulu, USA,
9. **Bratasz A.**, Goscinski I., Galka P., Moskała M., Lukiewicz S., Level of Nitric Oxide and Ceruloplasmin in Cerebrospinal Fluid and Blood in Head Injuries, Second International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide, 16-20 June 2002, Praga, Republika Czeska; *Nitric oxide*, 2002, 6(4): 364
10. **Bratasz A.**, Khramtsov V. V, Kuppusamy P., A Modified Tietze Assay for the Determination of Thiols in Intact Cells and Tissues, Society for Free Radical Biology and Medicine 10th Annual Meeting, Seattle, Washington, November 2003, *Free Radicals in Biology and Medicine*, 2003, vol. 35 Suppl., S147
11. Ilangovan G., **Bratasz A.**, and Kuppusamy P., Direct Visualisation of Emergency of hypoxia in a Growing Tumor, Society for Free Radical Biology and Medicine 10th Annual Meeting, Seattle, Washington, November 2003, *Free Radicals in Biology and Medicine*, 2003, vol. 35 Suppl., S168
12. Weir N. M., **Bratasz A.**, Kuppusamy P., Modulation of Thiol Level in Human Ovarian Cancer Cells Treated with Cisplatin, Society for Free Radical Biology and Medicine 10th Annual Meeting, Seattle, Washington, November 2003, *Free Radicals in Biology and Medicine*, 2003, vol. 35 Suppl., S172
13. Ilangovan G., **Bratasz A.**, and Kuppusamy P., Monitoring the Hypoxia During Tumor Growth by EPR Imaging, Society for Free Radical Biology and Medicine 10th Annual Meeting, Seattle, Washington, November 2003, *Free Radicals in Biology and Medicine*, 2003, vol. 35 Suppl., S169
14. **Bratasz A.**, Kuter I., Konior R., Gościński I., Łukiewicz S., Nitric Oxide in Brain Diseases, *Antioxid. Redox Signal.*, 2004, 6(3): 613-17
15. Ilangovan G., **Bratasz A.**, Li H., Schmalbrock P., Zweier J. L., and Kuppusamy P., In Vivo Measurement and Imaging of Tumor Oxygenation using Coembedded Paramagnetic Particulates, *Magn Reson Med.*, 2004, 52(3): 650-657
16. Ilangovan G., Osinbowale S., **Bratasz A.**, Bonar M., Cardounel A. J., Zweier J. L. and Kuppusamy P., Heat Shock Regulates the Respiration of Cardiomyocytes Through Upregulation of Nitric Oxide Synthase, *Am J Phys. Cell Phys.*, 2004, 287(5): C1472-81
17. **Bratasz A.**, Ilangovan G., Kuppusamy P., Changes in Intracellular Oxygenation during Tumor Growth and after Irradiation, 11th Annual Meeting of the Society for Free Radical Biology and Medicine (SFRBM), November 17-21 2004, St. Thomas, Virgin Island, USA; *Free Radicals in Biology and Medicine*, 2004, 37 (Suppl.1): S169
18. **Bratasz A.**, Villamena F., Yan S.D., Kuppusamy P., In Vivo Imaging of Oxidative Stress in the Brain Tissue of Mice with Alzheimer's Disease, 11th Annual Meeting of the Society for Free Radical Biology and Medicine (SFRBM), November 17-21 2004, St. Thomas, Virgin Island, USA; *Free Radicals in Biology and Medicine*, 2004, 37 (Suppl.1): S150
19. Ilangovan G., Osinbowale S., **Bratasz A.**, Kuppusamy P., Zweier J. L., Heat-shock Regulates the Respiration of Cardiac H9c2 Cells through Upregulation of Nitric Oxide Synthase, 11th Annual Meeting of the Society for Free Radical Biology and Medicine (SFRBM), November 17-21 2004, St. Thomas, Virgin Island, USA; *Free Radicals in Biology and Medicine*, 2004, 37 (Suppl.1): S83
20. Ilangovan G., **Bratasz A.** and Kuppusamy P., Non-invasive Measurement of Tumor Oxygenation using Embedded Microparticulate EPR Spin Probe, *Adv. Exp. Biol. Med.*, 2005, 566: 67-73
21. **Bratasz A.**, Kuppusamy P., Approach for non-invasive Measurement of Oxygen Concentration in Growing Tumors, *Current Topics in Biophysics*, 2005, 29(1-2): 101-107
22. Ilangovan G., Venkatakrisnan C.D., **Bratasz A.**, Cardounel A.J. , Zweier J.L. , and Kuppusamy P., Hyperthermia induced attenuation of hydroxyl radical generation and mitochondrial aconitase activity in cardiac cells, 12th Annual Meeting of the Society for Free Radical Biology and Medicine (SFRBM), November 16-20 2005, Austin, Texas, USA; *Free Radicals in Biology and Medicine*, 2005, 39 (Suppl.1): S25
23. **Bratasz A.**, Pandian R., Ilangovan G., and Kuppusamy P., Monitoring oxygenation during the growth of a transplanted tumor, *Adv. Exp. Biol. Med.*, 2006, 578: 375-80
24. Ilangovan G, Venkatakrisnan CD, **Bratasz A.**, Osinbowale S, Cardounel AJ, Zweier JL, Kuppusamy P. Heat Shock-Induced Attenuation of Hydroxyl Radical Generation and Mitochondrial Aconitase Activity in Cardiac H9c2 Cells. *Am J Physiol Cell Physiol.*, 2006, 290: C313-324

25. **Bratasz A.**, Weir N.M, Parinandi N.L, Zweier J.L. , Sridhar R., Ignarro L. J., Kuppusamy P. Reversal to Cisplatin Sensitivity in Recurrent Human Ovarian Cancer Cells by NCX-4016, a Nitro-derivative of Aspirin, Proc. Nat. Acad of Sci., 2006, 103(10): 3914-3919
26. **Bratasz A.** and Kuppusamy P., Mapping Tumor Hypoxia Using Magnetically Labeled Cells, Ind. J. Rad. Chem., 2006, (in press)
27. **Bratasz A.**, Kulkarni A., Kuppusamy P. Imaging of Oxygen Concentration in Tumor Tissue Using an Injectable Probe, Perchlorotriphenylmethyl Radical in Hexafluorobenzene, 13th Annual Meeting of the Society for Free Radical Biology and Medicin (SFRBM), November 16-19 2006, Denver, Colorado, USA; Free Radicals in Biology and Medicine, 2006, vol.41 (Suppl.1): S99
28. Presley T., **Bratasz A.**, Venkatakrishnan C. D., Kuppusamy P., Zweier J. L., Ilangoan G., Does endogenous NO inhibit Cellular Respiration at Hypoxic Conditions?, 13th Annual Meeting of the Society for Free Radical Biology and Medicin (SFRBM), November 16-19 2006, Denver, Colorado, USA; Free Radicals in Biology and Medicine, 2006, vol.41 (Suppl.1): S53
29. Vikram D.S., **Bratasz A.**, Ahmad R., Kuppusamy P., A Comparative Evaluation of EPR and OxyLite Oximetry Using a Random Sampling of pO₂ in a Murine Tumor, Radiat Res. 2007 Sep;168(3):308-15
30. **Bratasz A.**, Kulkarni A., Kuppusamy P., A highly sensitive biocompatible spin probe for imaging of oxygen concentration in tissues, Biophysical Journal, 2007, 92(8):2918-2925
31. **Bratasz A.**, Deng Y., Pandian R. P., Grecula J. D., Gupta N., Kuppusamy P. In Vivo Monitoring and Imaging of Changes in pO₂ at the cellular levels in RIF-1 Tumor as a Function of growth and post-irradiation, Magnetic Resonance in Medicine, 2007, 57(5):950-959
32. Sostaric J. Z., Pandian R. P., **Bratasz A.**, Kuppusamy P. Encapsulation of a highly sensitive EPR active oxygen probe into sonochemically prepared microspheres, J. Phys. Chem. B, 2007, 111(12):3298-3303
33. Kulkarni A., **Bratasz A.**, Kuppusamy P. A New Spin Probe for High Resolution In Vivo Oximetry and Imaging, 51th Annual Meeting of Biophysical Society, March 3-7, 2007, Baltimore, Maryland; Biophysical Journal, January 2007
34. Presley T., **Bratasz A.**, Kuppusamy P., Zweier J. L., Ilangoan G. 51st Annual Meeting of Biophysical Society, March 3-7, 2007, Baltimore, Maryland; Biophysical Journal, January 2007
35. Vikram D., **Bratasz A.**, Rizwan A., Kuppusamy P. 51st Annual Meeting of Biophysical Society, March 3-7, 2007, Baltimore, Maryland; Biophysical Journal, January 2007
36. Selvendiran, K., Tong, L., Vishwanath, S., **Bratasz, A.**, Trigg, N. J., Kutala, V. K., Hideg, K. Kuppusamy, P. EF24 induces G2/M arrest and apoptosis in cisplatin-resistant human ovarian cancer cells by increasing PTEN expression, Journal of Biological Chemistry, 2007;282(39):28609-18; Epub 2007 Aug 7
37. Selvendiran K., **Bratasz A.**, Tong L., and Kuppusamy P. NCX-4016, a nitro-derivative of aspirin, inhibits EGFR and STAT3 Signaling and Modulates Bcl-2 Proteins in Cisplatin-Resistant Human Ovarian Cancer Cells and Xenografts, Cell Cycle, 2008, 7(1):81-88
38. **A. Bratasz**, K. Selvendiran, T. Wasowicz, A. Bobko, V. V Khramtsov, L.J. Ignarro, and P. Kuppusamy, NCX-4040, an NO-releasing aspirin derivative, induces apoptosis and further sensitizes cisplatin-resistant human ovarian xenograft tumors to cisplatin by depletion of intracellular thiols, J. Trans. Med., 2008, 6:9.
39. Galina I. Roshchupkina, Andrey A. Bobko, **Anna Bratasz**, Vladimir A. Reznikov, Periannan Kuppusamy, and Valery V. Khramtsov, In Vivo Electron Paramagnetic Resonance Measurement of Glutathione in the Tumor-Bearing Mice Using Improved Disulfide Biradical Probe, Free Radical Biology & Medicine, 2008, 45(3): 312-320
40. Liyue Tong, Karuppaiyah Selvendiran, **Anna Bratasz**, Nancy Trigg, Brian Rivera, Tamás Kálai, Kálmán Hideg, Periannan Kuppusamy, Safe and targeted anti-tumor (STAT) therapeutics by difluoroketones: A novel drug-design targeting the STAT3 pathway in the treatment of ovarian cancer, SFRBM's 15th Annual Meeting, November 19-23, 2008, Indianapolis, Indiana USA, Free Radical Biology & Medicine, 2008, vol.45:S51
41. Karuppaiyah Selvendiran, **Anna Bratasz**, M Lakshmi Kuppusamy, Brian Rivera, Periannan Kuppusamy, Hypoxia Impediments Ovarian Cancer Treatment through Modulation of ROS and STAT3 Activation, SFRBM's 15th Annual Meeting, November 19-23, 2008, Indianapolis, Indiana USA, Free Radical Biology & Medicine, 2008, vol.45: S38
42. Karuppaiyah Selvendiran, M Lakshmi Kuppusamy, **Anna Bratasz**, Brian Rivera, Cameron Rink, Chandan K Sen, Tamás Kálai, Kálmán Hideg, Periannan Kuppusamy, Inhibition of Smooth Muscle Cell Proliferation and Balloon Injury-Induced Neointimal Hyperplasia through Activation of PTEN Expression by HO-3867, a Synthetic Curcuminoid, SFRBM's 15th Annual Meeting, November 19-23, 2008, Indianapolis, Indiana USA, Free Radical Biology & Medicine, 2008, vol.45: S149

43. Karuppaiyah Selvendiran, **Anna Bratasz**, M Lakshmi Kuppusamy, Mahmood Khan, Brian Rivera, Periannan Kuppusamy, Hyperbaric Oxygen Therapy (HBOT) Suppresses Ovarian Tumor Growth by Inhibition of STAT3 and Cyclin D1 Expression, SFRBM's 15th Annual Meeting, November 19-23, 2008, Indianapolis, Indiana USA, Free Radical Biology & Medicine, 2008, vol.45:S55
44. Aditi C. Kulkarni, **Anna Bratasz**, Brian Rivera, Murali C. Krishna, and Periannan, Redox mapping of biological sample using EPR Imaging, Israel Journal of Chemistry, 2008, vol.48:27-31
45. Deepti S. Vikram, **Anna Bratasz**, Rizwan Ahmad, and Periannan Kuppusamy, In vivo monitoring of temporal changes in tumor pO₂ using EPR oximetry, 2008 (in review)
46. Presley T., **Bratasz A.**, Venkatakrishnan C.D., Kuppusamy P., Zweier J.L., Ilangovan G. Endogenous Nitric Oxide does not inhibit Cellular Respiration by Competitive Binding at Cytochrome c Oxidase in Hypoxic Conditions. An Electron Paramagnetic Resonance Oximetry Study, 2008 (Biophysical Journal- in review)
47. **Anna Bratasz**, Valery Khrumstov, Periannan Kuppusamy, Measurement and imaging of thiol concentration in intact cells and tissue using EPR spectroscopy, 2008 (in preparation)
48. Simi Chacko, Mahmood Khan, M. Lakshmi Kuppusamy, Ramasamy Pandian, Saradhadevi Varadharaj, Karuppaiyah Selvendiran, **Anna Bratasz**, Brian Rivera, and Periannan Kuppusamy, Myocardial oxygenation and functional recovery in infarct rat hearts transplanted with mesenchymal stem cells, American Journal of Physiology - Heart and Circulatory Physiology, 2009 (in review)

Monograph:

49. S. Lukiewicz, M. Elas, J. Raczek, **A. Bratasz**, S. Pajak, K. Cieszka, EPR signals detectable in human tumors, Ch.23, Nitric Oxide in Transplant Rejection and Anti-tumor Defense, Eds. S. Łukiewicz, J.L. Zweier, Kluwer Academic Publisher, USA, 1998, pp. 353-37

C. Research Support

Polish State Committee for Science Research (Grant 6 P05 B 152 20); March 2001- February 2002