

Biosensor Laboratory
Selected Publications

1. Irina Sorokulova, Eric Olsen, Vitaly Vodyanoy, Bacteriophage biosensors for antibiotic resistant bacteria. *Expert Rev Med Devices*. 2014 Mar;11(2):175-86. doi: 10.1586/17434440.2014.882767.
2. I.Sorokulova, R. Guntupalli, E. Olsen, L. Globa, O. Pustovyy, V. Vodyanoy. Lytic Phage in Biosensing, *ECS Transactions*, 58 (23) 1-7 (2014) 10.1149/05823.000lecest ©The Electrochemical Society.
3. Jia, H, Pustovyy, OM, Waggoner, P, Beyers, RJ, Schumacher, J, Wildey, C, Barrett, J, Morrison, E, Salibi, N, Denney, TS, Vodyanoy, VJ, Deshpande, G. Functional MRI of the olfactory system in conscious dogs. *PLoS One*, 9:e86362 (2014).
4. Kyathanahally SP, Jia H, Pustovyy OM, Waggoner P, Beyers R, Schumacher J, Barrett J, Morrison EE, Salibi N, Denney TS, Vodyanoy VJ, Deshpande G. 2014. Anterior-posterior dissociation of the default mode network in dogs. *Brain structure & function*: 1-14.
5. Moore T, Globa L, Barbaree J., Vodyanoy V., Sorokulova I. Antagonistic Activity of Bacillus Bacteria against Food-Borne Pathogens. *Journal of Probiotics and Health*. Vol. 1(3): 1-6 (2013)
6. Vitaly J. Vodyanoy, Yuri Mnyukh, The Physical Nature of "Giant" Magnetocaloric and Electrocaloric Effects, *American Journal of Materials Science*, Vol. 3 No. 5, 2013, pp. 105-109. doi: 10.5923/j.materials.20130305.01.
7. Moore T, Sorokulova I, Pustovyy O, Globa L, Vodyanoy V (2013). Microscopic evaluation of vesicles shed by rat erythrocytes at elevated temperatures. *Journal of Thermal Biology*, 38:487-492.
8. Moore T, Sorokulova I, Pustovyy O, Globa L, Pascoe D, Rudisill M, Vodyanoy V. (2013) Microscopic evaluation of vesicles shed by erythrocytes at elevated temperatures. *Microscopy research and technique*, 76:1163-1176.
9. Guntupalli, R, Sorokulova, I, Olsen E, Vodyanoy, V. MRSA Biosensor Based on CCD Detection (2013), *Advances in Biosensors and Bioelectronics*, 2 (1), 1-6.
10. Guntupalli, R, Sorokulova, I, Olsen E, Globa, L., Pustovyy, O., Vodyanoy, V. Biosensor for detection of antibiotic resistant staphylococcus bacteria, *Journal of Visual Experiments*, (75), e50474, doi:10.3791/50474 (2013).

11. Vodyanoy, V. Pustovyy, O., Moore, T., Brock, K. Passive oil collection device, *Environmental Earth Sciences*, DOI 10.1007/s12665-013-2263-9.
12. Sorokulova, I., Watt, E. Olsen, L. Globa, T. Moore, J. Barbaree, V. Vodyanoy, Natural biopolymer for preservation of microorganisms during sampling and storage, *J. Microbiol. Methods* 88 (2012) 140-146.
13. Moore, CH, Pustovyy, O, Dennis, JC, Moore, T, Morrison, EE, Vodyanoy, VJ (2012) Olfactory responses to explosives associated odorants are enhanced by zinc nanoparticles. *Talanta* 88: 730-733.
14. S.Q. Li, S. Horikawa, M.K. Park, Y.T. Chai, V.J. Vodyanoy, B.A. Chin, Amorphous metallic glass biosensors, *Intermetallics* 30 (2012) 80-85.
15. R. Guntupalli, I. Sorokulova, E. Olsen, L. Globa, O. Pustovyy, T. Moore, B. Chin, J. Barbaree, V. Vodyanoy, Detection and identification of methicillin resistant and sensitive strains of *Staphylococcus aureus* using tandem measurements, *J. Microbiol. Methods* 90 (2012) 182-191.
16. E.A. Kogan, T. Demura, V. Vodyanoy, A.V. Shurshalina, Molecular and morphological aspects of endometrial receptivity disorders at chronic endometritis, *Archives of Pathology* 3c (2012) 15-17.
17. Yating Chai, Li, Suiqiong Li, Shin Horikawa, Mi-Kyung Park.; Vitaly Vodyanoy, Chin Bryan (2012) Rapid and Sensitive Detection of *Salmonella Typhimurium* on Eggshells by Using Wireless Biosensors. *Journal of food protection* 75(4): 631-636.
18. R. Guntupalli, I. Sorokulova, E. Olsen, L. Globa, O. Pustovyy, and V. Vodyanoy (2012) Biosensor for detection of antibiotic resistant staphylococcus bacteria. *Journal of Visualized Experiments*. (In press).
19. Guntupalli, R, Sorokulova, I, Long, R, Olsen, E, Neely, W, Vodyanoy, V (2011) Phage Langmuir monolayers and Langmuir-Blodgett films. *Colloids and Surfaces B-Biointerfaces* 82: 182-189.
20. Viswaprakash, N, Josephson, EM, Dennis, JC, Yilma, S, Morrison, EE, Vodyanoy, VJ (2010) Odorant Response Kinetics from Cultured Mouse Olfactory Epithelium at Different Ages in vitro. *Cells Tissues Organs* 192: 361-373.
21. Vodyanoy, V (2010) Zinc nanoparticles interact with olfactory receptor neurons. *Biometals* 23: 1097-1103. "Novel metal clusters isolated from blood are lethal to cancer cells." Alexander M. Samoylov, Tatiana I. Samoylova, Oleg M. Pustovyy, Alexei A. Samoylov, Maria A. Toivio-Kinnucan, Nancy E. Morrison, Ludmila P. Globa, William F. Gale and Vitaly Vodyanoy. *Cells, Tissues Organs* 2005; 179(3):115-124, 2005.

22. "Anti-tumor extracts isolated from shark tissue." A.M. Samoylov, T.I. Samoylova, O.M. Pustovyy, A.A. Samoylov, M.A. Toivio-Kinnucan, N.E. Morrison, L.P. Globa, W.F. Gale, and V. Vodyanoy. *Molecular Biology of the Cell* 15:253A-253A 1398 Suppl. S., 2004.
23. "Thermodynamic characteristics of mixed monolayers of Amphotericin B and cholesterol." Jennifer Cannon Sykora, William C. Neely and Vitaly Vodyanoy. *Journal of Colloid and Interface Science* 276(1):60-67, 2004.
24. "Structure and function of long-lived olfactory organotypic cultures from postnatal mice." E.M. Josephson, S. Yilma, V. Vodyanoy and E.E. Morrison. *Journal of Neuroscience Research* 75(5):642-653, 2004.
25. "Solvent effects on Amphotericin B monolayers." Jennifer Cannon Sykora, William C. Neely and Vitaly Vodyanoy. *Journal of Colloid and Interface Science* 269(2):499-502, 2004.
26. "Phage display for detection of biological threat agents." Petrenko V.A. and V.J. Vodyanoy. *The Journal of Microbiological Methods* 1768; 53:253-262, 2003.
27. "Specific and selective biosensor for Salmonella and their detection in the environment." E.V. Olsen, S.T. Pathirana, A.M. Samoylov, J.M. Barbaree, B.A. Chin, W.C. Neely, and V. Vodyanoy. *The Journal of Microbiological Methods* 1770; 53(2):273-285, 2003.
28. "Amphotericin B and Cholesterol in Monolayers and Bilayers." Jennifer Sykora, Solomon Yilma, William C. Neely and Vitaly Vodyanoy. *Langmuir* 19:858-864, 2003.
29. "Peptide biosensor for recognition of cross-species cell surface markers." Alexandre M. Samoylov, Tatiana I. Samoylova, Suram T. Pathirana, Ludmila P. Globa and Vitaly J. Vodyanoy. *Journal of Molecular Recognition* 15:197-203, 2002.
30. "Recognition of cell-specific binding of phage display derived peptides." Alexandre M. Samoylov, Tatiana I. Samoylova, Mark G. Hartell, Suram T. Pathirana, Bruce F. Smith, and Vitaly J. Vodyanoy. *Biomolecular Engineering* 18:269-272, 2002.
31. "Targeting peptides for microglia identified via phage display." T.I. Samoylova, B.Y. Ahmed, V. Vodyanoy, N.E. Morrison, A.M. Samoylov, L.P. Globa, H.J. Baker, and N.R. Cox. *NeuroImmunology* 127:13-21, 2002.
32. "Member of the ampaikine class of memory enhancers prologs the single channel open times of reconstituted AMPA receptors." V. Suppiramaniam, B.A. Bahr, S. Sinnarajah, K. Owens, G. Rogers, S. Yilma, and V. Vodyanoy. *Synapse* 40:154-158, 2001.
33. "RGS2 inhibits Gsa signaling by impairing activation of type III, V, and VI adenylyl cyclases." S. Sinnarajah, C.W. Dessauer, D. Srikumar, J. Chen, J. Yuen, J. Dennis, S.

- Yilma, E. E. Morrison, V. Vodyanoy and J. H. Kehrl. *Nature* 409:1051-1055, 2001.
34. "Rapid and sensitive biosensor for Salmonella." S.T. Pathirana, J. Barbaree, B.A. Chin, M.G. Hartell, W.C. Neely, and V. Vodyanoy. *Biosensors & Bioelectronics* 15:135-141, 2000.
 35. "Heparin modulates the single channel kinetics of reconstituted AMPA receptors from rat brain." Srikumar Sinnarajah, Vishnu Suppiramaniam, Kolappa Prem Kumar, Randy A. Hall, Ben A. Bahr, and Vitaly Vodyanoy. *Synapse* 31:203-209, 1999.
 36. "Inhibition and enhancement of odorants-induced cAMP accumulation in rat olfactory cilia by antibodies directed against Gai-protein subunits." S. Sinnarajah, P.I. Ezeh, S. Pathirana, A.G. Moss, E.E. Morrison, and V. Vodyanoy. *FEBS Letters* 426:377-380, 1998.
 37. "Molecular sensor based on olfactory transduction" in: *Molecular Electronics: Biosensors and Biocomputers*. Felix T. Hong (Ed.). Plenum Publishing Corp., New York, pp. 319-345, 1989.
 38. "Condensing and expanding effects of the odorants (+)-and (-)-carvone on phospholipid monolayers". S. Pathirana, W.C. Neely, and V. Vodyanoy. *Langmuir* 14:679-682, 1998.
 39. "Effects of heparin on the properties of solubilized and reconstituted rat brain AMPA receptors". Randy A. Hall, Vitaly Vodyanoy, Alex Quan, Srikumar Sinnarajah, Vishnu Suppiramaniam, Markus Kessler, and Ben A. Bahr. *Neuroscience Letters* 217:179-183, 1996.
 40. Assembly of cadmium stearate and valinomycin molecules assists complexing of K⁺ in mixed Langmuir-Blodgett films. S. Pathirana, L.J. Myers, V. Vodyanoy, and W.C. Neely. *Supramolecular Science* 3:149-154, 1996.
 41. "Stearic acid assisted complexation of K⁺ by valinomycin in monolayers." V. Vodyanoy, S. Pathirana, and W.C. Neely. *Langmuir* 10:1354-1357, 1994.
 42. "Single channel recordings of reconstituted AMPA receptors reveal low and high conductance states." V. Vodyanoy, B.A. Bahr, V. Suppiramaniam, R.A. Hall, M. Baudry and G. Lynch. *Neuroscience Letters* 150:80-84, 1993.
 43. "Functional reconstitution of α -amino-3-hydroxy-5-methylisoxazole-4-propanate (AMPA) receptors from rat brain." B.A. Bahr, V. Vodyanoy, R.A. Hall, V. Suppiramaniam, M. Kessler, K. Sumikawa, and G. Lynch. *J. Neurochemistry* 59:1979-1982, 1992.
 44. "Chiral recognition of odorants (+)- and (-)-carvone by phospholipid monolayers." S. Pathirana, W.C. Neely, L.J. Myers, and V. Vodyanoy. *J. Am. Chem. Soc.* 114:1404-

1405, 1992.

45. "Interaction of valinomycin and stearic acid in monolayers." S. Pathirana, W.C. Neely, L.J. Myers, and V. Vodyanoy. *Langmuir* 8:1984-1987, 1992.
46. "Glutamate-activated ion channels." V. Vodyanoy. *CNS Neurotransmitters and Neuromodulators*, Vol 1, CRC press, pp. 127-142, 1995.
47. "Cyclic nucleotide-gated electrical activity in olfactory receptors". V. Vodyanoy, in: *Receptor and Transduction Mechanisms in Taste and Olfaction*. Joseph G. Brand and John H. Teeter (Eds.). Marcel Dekker, New York, pp. 319-345, 1989.
48. "Molecular sensor based on olfactory transduction" in: *Molecular Electronics: Biosensors and Biocomputers*. Felix T. Hong (Ed.). Plenum Publishing Corp., New York, pp. 319-345, 1989.