

# CURRICULUM VITAE

NAME: Oleksandr O. Kapralov

BUSINESS ADDRESS: University of Pittsburgh  
Graduate School of Public Health  
130 De Soto Street  
Pittsburgh, PA 15261  
Phone: (412)-624-9474  
E-mail: [olk6@pitt.edu](mailto:olk6@pitt.edu)

## EDUCATION AND TRAINING

### Graduate

1973-1979	Kiev State University University, Kiev, Ukraine	Master of Science degree, 1979	General and Molecular Genetics
-----------	---	-----------------------------------	-----------------------------------

### Post- Graduate

1981-1984	A.V. Palladin Institute of Biochemistry Ukrainian Academy of Sciences, Kiev, Ukraine	Candidate of Sciences, 1986	Biochemistry
-----------	--	--------------------------------	--------------

### Doctoral

2000	National Taras Shevchenko Kyiv University, Kiev, Ukraine	Doctor of Sciences	Biochemistry
------	---	--------------------	--------------

## APPOINTMENTS AND POSITIONS

### Academic

10/2019-present	Research Associate Professor	Department of Environmental and Occupational Health, Pittsburgh University
07/2012-10/2019	Research Assistant Professor	Department of Environmental and Occupational Health, Pittsburgh University
11/2007-07/2012	Research Associate	Department of Environmental and Occupational Health, Pittsburgh University

04/2003-11/2007	Postdoctoral Fellow	Department of Environmental and Occupational Health, Pittsburgh University
2002-2003	Leading Research Scientist	Department of Biochemistry, The National Taras Shevchenko Kyiv University, Kiev, Ukraine
2000-2002	Leading Research Scientist	Research Institute of Physiology of the National Taras Shevchenko Kyiv University, Kiev, Ukraine
1994-2000	Senior Research Scientist	Research Institute of Physiology of the National Taras Shevchenko Kyiv University, Kiev, Ukraine
1992-1994	Senior Research Scientist	R.E.Kavetsky Institute for Experimental Pathology, Oncology and Radiobiology, Ukrainian Academy of Sciences, Kiev, Ukraine
1989-1992	Senior Research Scientist	The Institute of Bioorganic Chemistry Ukrainian Academy of Sciences, Kiev, Ukraine
1986-1989	Junior Research Scientist	A.V. Palladin Institute of Biochemistry Ukrainian Academy of Sciences, Kiev, Ukraine
1978-1986	Engineer	A.V. Palladin Institute of Biochemistry Ukrainian Academy of Sciences, Kiev, Ukraine

## CERTIFICATION AND LICENSURE

### Specialty Certification

2000	Certificate of the Senior Research Scientist	Higher Attestation Commission of Ukraine
------	--	--

## MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

1984-2003	Ukrainian Biochemical Society
2007-present	Society of Toxicology
2009-present	American Chemical Society

## PROFESSIONAL ACTIVITIES

### Teaching Courses Taught

Years	Course Title	Hours	Role in course Primary/Coordinator
2002-2003	Seminar in general biochemistry and laboratory classes in biochemical methods	20	

### Supervision of Post-Doctoral Students, Residents, and Fellows

Helped with development of experimental protocols and design of experiments

Dates Supervised	Name of Student	Position of Student
2012	Maeda A	Postdoctoral student
2012-2013	Djukic M	Postdoctoral fellow
2013	Watkins L.	Fellow
2014	Polimova A	Fellow
2014	He R.R.	Postdoctoral fellow
2018	Li M	Postdoctoral student
2019	Cinemre B.	Junior faculty

### Research and Training

#### Grants and Contracts Received

##### Principal Investigator

Years Inclusive	Grant and/or Contract Number and Title	Source	Annual Direct Costs	% Effort
2009-2010	Pilot Project: "Prevention of radiation induced cell death by delivery of cardiolipin to mitochondria" (grant # - U19 AI068021-05)	NIH/NIAID	\$25,000	50%

##### Co-Investigator on Grants

Years Inclusive	Grant and/or Contract Number and Title	Source
07/01/20- 06/30/22	HHSN2612015000 (Kagan) The purpose of this task order is to identify and quantitatively characterize phospholipids and their oxidation products associated with the execution of ferroptotic cell death program in cancer cells and tumor	Leidos Biomedical Research, Inc

	allograft/xenograft models treated with pro-ferroptotic reagents	
09/01/20-08/31/25	Selective Inhibitors of Pro-Ferroptotic Lipoxygenases – Next Generation Radiomitigators. Central hypothesis is that radiation triggered responses engage several types of <u>programmed</u> necrotic death, particularly ferroptosis, in GI epithelial cells and the major innate immune cells, neutrophils and macrophages, evolving over time and driving necro-inflammatory vs pro-resolving apoptotic responses during sterile and non-sterile inflammation and culminating in multiple organ dysfunction and mortality	NIH
04/01/20-03/31/25	R01 GM134715-01A1 (Greenberg/Kagan) Controlling monolysocardiolipin/cytochrome c peroxidase complexes in Barth syndrome. The goal of this project is to study a new pathogenic mechanism in Barth syndrome	Wayne State University/NIH
09/01/2015-08/31/2020	5U19 AI06802-14 CMCRs Prj 2 and Prj 3 Signature-Directed, Sequential Delivery of Radiation Mitigators The goal of this project was to develop a new methods of delivery of Radiation Mitigators	NIH/NCI
07/01/2010-06/30/2015	R01 OH008282-08 (Kagan V.E) Carbon Nanotubes Biodegradation by Neutrophil Myeloperoxidase The goal of this project was to demonstrate, that myeloperoxidase (MPO), an abundant enzyme present in inflammatory cells which participate in innate immunity is effective in oxidative biodegradation carbon nanotubes in experiments in vitro and animal models.	CDC/NIOSH
09/30/10-08/31/15	U19 AI068021-09 (Kagan-Project 2; Bayir-Project 4; Kagan-Core E; Greenberger-PPG) Mitochondrial Targeting Against Radiation Damage The goal of this project is to develop optimized combinations of pharmacological agents to prevent/mitigate oxidative stress and in mitochondrial and apoptosis of cells exposed to X-irradiation.	NIH/NIAID

## PUBLICATIONS

### Refereed Articles

1. Tiulenev V.I., **Kapralov A.A.**, Masyuk A.I. Turnover of chromatin proteins in rat liver during induction of RNA synthesis by electrostimulation of the hypothalamus // Biochemistry-Moscow. 1980; 45(9):1669-74. Russian.

2. Tiulenev V.I, **Kapralov A.A.**, Smerchinskaja L.S, Belik .IV.Effect of protein S-100 on phosphorylation of nuclear proteins of cells of rat brain and liver // *Biochemistry-Moscow*. 1983; 48(5):827-32. Russian.
3. **Kapralov A.A.**,Smerchinskaja L.S., Belik Ya.V.,Tjulenev W.I.Intranuclear localization of neurospecific S-100 protein//*Neurochemistry (Erevan)*. 1983; 2(1): 26-33. Russian.
4. Tiulenev V.I.,**Kapralov A.A.**,Zheljabovskaja Influences of hypothalamuse's electrostimulation and cAMP on the proteins phosphorylation and RNA-polymerases activities in rat liver nuclei//*Docl. of Acad. Sci Ukr. SSR p.B*. 1984; N3:79-82. Russian.
5. Tiulenev V.I, **Kapralov A.A.**, Masiuk A.I. Effect of neuromediating and neuroblockading hormones on the RNA synthesis in the rat liver nucleus // *Biochemistry-Moscow*. 1984; 49(8):1320-6. Russian.
6. Tiulenev V.I., **Kapralov A.A.**The synthesis and polyadenylation of RNA in rat liver nuclei after the electrostimulation of hypothalamuse//*Docl. of Acad.Sci Ukr.SSR p.B*. 1984,N10; 83-86. Russian.
7. **Kapralov A.A.**, Tiulenev V.i. et al.The action of S-100 protein on nuclear protein's phosphorylation in rat brain nuclei. Influence of Ca ions. *Neurochemistry (Erevan)*. 1985; 4(1):23-29. Russian.
8. **Kapralov A.A.**, Tiulenev V.I.,Nasarenko V.I.The action of S-100 protein on RNA release from isolated nuclei of rat brain and ATPase activity of nuclear membranes//*Neurochemistry (Erevan)*. 1986; 5(2):219-220. Russian.
9. **Kapralov A.A.**, Tiulenev V.I., Belik Ya.V.Localization of neurospecific S-100 protein in brain nuclear pore-lamina and its action on phosphorylation of nuclear membran proteins// *Neurochemistry (Erevan)*.1986; 5(4);365-370. Russian.
10. **Kapralov A.A.**, Tiulenev V.I. On the participation of S-100 protein in phosphorylation of brain nucleoplasm proteins and its presence in RNP//*Neurochemistry (Erevan)*. 1988; 7(3):382-388. Russian.
11. Donchenko G.V., Malen'kikh L.B., **Kapralov A.A.**, Baryk O.I., Mel'nik V.N. Role of the cytosolic factor in the interaction of [3H] alpha-tocopherol with rat liver nuclei // *Biochemistry-Moscow*. 1988; 53(12):2019-24. Russian.
12. Petrova G.V., **Kapralov A.A.**, Kuz'menko I.V., Donchenko G.V.Tocopherol-binding proteins in membranes of rat liver mitochondria // *Ukr Biokhim Zh*. 1990; 62(2):29-35. Russian.
13. Gubskii I.I., Levitskii E.L., Chabannyi V.N., Gol'dshtein N.B., **Kapralov A.A.**, Petrova G.V., Donchenko G.V., Volkov G.L., Litoshenko A.I. Changes in protein, lipid composition, DNA- and RNA- polymerase activity of the chromatin fraction and the nuclear matrix of the rat liver in hypovitaminosis E // *Ukr Biokhim Zh*. 1990;62(6):22-30. Russian.
14. Petrova G.V., **Kapralov A.A.**, Donchenko G.V. About the presence of tocopherol binding proteins in rat liver nuclear membrane // *Biomembranes (Moscow)*. 1991;8(10):1039-1046. Russian.
15. Petrova G.V., **Kapralov A.A.**, Donchenko G.V. Effect of vitamin E on transcription in isolated nuclei and rat liver chromatin in normal status and in E-hypovitaminosis // *Biochemistry-Moscow*. 1991;56(11):2052-9. Russian.

16. Petrova G.V., **Kapralov A.A.**, Donchenko G.V. Incorporation of [3H]alpha-tocopherol into isolated nuclei and its binding by rat liver chromatin // Ukr Biokhim Zh. 1992 ;64(2):72-9. Russian.
17. Ivanov A.P., **Kapralov A.A.**, Baryk O.I., Gubchenko S.V. Effect of brain cytosol proteins of embryonal and adult animals on RNA-polymerase activity of isolated brain nuclei // Ukr Biokhim Zh. 1992;64(5):31-7. Russian.
18. **Kapralov A.A.**, Donchenko G.V., Petrova G.V. Chromatin proteins binding vitamin E. Ukr Biokhim Zh. 1994;66(1):83-9. Russian.
19. Petrova G.V., **Kapralov A.A.**, Izhokina I.A., Donchenko G.V. Effect of alpha-tocopherol and ubiquinone on mitochondrial RNA polymerase activity. The role of tocopherol-binding proteins // Biochemistry-Moscow. 1994;59(4):575-81. Russian.
20. Donchenko G.V., Petrova G.V., **Kapralov A.A.** Effect of alpha-tocopherol and nuclear tocopherol-binding proteins on DNA-polymerase activity of isolated nuclei and nuclear matrix // Ukr Biokhim Zh.1996 ;68(6):18-23. Russian.
21. Masyuk A.I., **Kapralov A.A.**, Dolgova E.N. The action of bile acids on RNA-polymerase activity in isolated rat liver nuclei // Ukr.Physiol. J. 1996, N6: 564-573. Russian.
22. **Kapralov A.A.**, Fedorchuk A.G., Masyuk A.I., Petrova G.V., Donchenko G.V. The production of superoxide by neutrophils of human blood under the action of tocopherol//Immunology (Moscow)1997;N6:15-18. Russian
23. **Kapralov A.A.**, Petrova G.V., Vasilieva S.M., Donchenko G.V. Tocopherol modulates the effects of A23187, verapamil, and phorbol myristate acetate on RNA-polymerase activity of isolated rat liver nuclei // Biochemistry-Moscow. 1997;62(7):694-646. Russian.
24. **Kapralov A.A.** The action of vitamin E on RNA and DNA-polymerase activity of rat liver mitochondria. The role of Ca<sup>2+</sup> ions and proteinkinase C//Biopolymers and Cells (Kiev),1997;13(4):269-273. Russian.
25. **Kapralov A.A.** Effect of ionophore A23187 and verapamil on RNA and DNA polymerase activity in rat liver nuclei // Ukr Biokhim Zh.1997;69(4):25-29. Russian.
26. **Kapralov A.A.** Effect of alpha-tocopherol on the respiratory burst of neutrophils, blast transformation of lymphocytes, and activity of human natural killer cells in blood // Ukr Biokhim Zh.199870(2):46-53. Russian.
27. **Kapralov A.A.** Role of Ca ions and protein kinase C in the action of vitamin E on respiratory burst of neutrophils and blast transformation of lymphocytes // Ukr Biokhim Zh. 1998;70(5):64-68. Russian.
28. Petrova G.V., **Kapralov A.A.**, Donchenko G.V. Comparative study of the effect of alpha-tocopherol, its synthetic metabolite and ionol on dexamethasone-induced apoptosis in rat thymocytes // Ukr Biokhim Zh. 2003;75(1):78-84. Russian.
29. Hryniuk I.I., Korniiichuk H.M., **Kapralov O.O.**, Matyshevs'ka O.P. Changes of chromatin structure state in thymocytes at the early stage of apoptosis induced by hydrogen peroxide and radiation // Ukr Biokhim Zh. 2004;76(5):90-5. Russian.

30. Kagan, V. E., Tyurin, V. A., Jiang, J., Tyurina, Y. Y., Ritov, V. B., Amoscato, A. A., Osipov, A. N., Belikova, N. A., **Kapralov, A. A.**, Kini, V., Vlasova, I. I., Zhao, Q., Zou, M., Di, P., Svistunenko, D. A., Kurnikov, I. V., and Borisenko, G. G. Cytochrome c acts as a cardiolipin oxygenase required for release of proapoptotic factors // *Nat Chem Biol*. 2005 1(4): 223-232.
31. Vlasova I.I., Tyurin V.A., **Kapralov A.A.**, Kurnikov I.V., Osipov A.N., Potapovich M.V., Stoyanovsky D.A., Kagan V.E. Nitric oxide inhibits peroxidase activity of cytochrome c-cardiolipin complex and blocks cardiolipin oxidation // *J Biol Chem*. 2006;281(21):14554-62.
32. Belikova N.A., Vladimirov Y.A., Osipov A.N., **Kapralov A.A.**, Tyurin V.A., Potapovich M.V., Basova L.V., Peterson J., Kurnikov I.V., Kagan V.E. Peroxidase activity and structural transitions of cytochrome c bound to cardiolipin-containing membranes // *Biochemistry*. 2006;45(15):4998-5009
33. Tyurina Y.Y., Kini V., Tyurin V.A., Vlasova I.I., Jiang J., **Kapralov A.A.**, Belikova N.A., Yalowich J.C., Kurnikov I.V., Kagan V.E. Mechanisms of cardiolipin oxidation by cytochrome c: relevance to pro- and antiapoptotic functions of etoposide // *Mol Pharmacol*. 2006;70(2):706-717.
34. Tyurina Y.Y., **Kapralov A.A.**, Jiang J., Borisenko G.G., Potapovich A.I., Sorokin A., Kochanek P.M., Graham S.H., Schor N.F., Kagan V.E. Oxidation and cytotoxicity of 6-OHDA are mediated by reactive intermediates of COX-2 overexpressed in PC12 cells // *Brain Res*. 2006;1093(1):71-82.
35. Tyurin V.A., Tyurina Y.Y., Osipov A.N., Belikova N.A., Basova L.V., **Kapralov A.A.**, Bayir H., Kagan V.E. Interactions of cardiolipin and lyso-cardiolipins with cytochrome c and tBid: conflict or assistance in apoptosis // *Cell Death Differ*. 2007;14(4):872-875.
36. **Kapralov A.A.**, Kurnikov I.V., Vlasova I.I., Belikova N.A., Tyurin V.A., Basova L.V., Zhao Q., Tyurina Y.Y., Jiang J., Bayir H., Vladimirov Y.A., Kagan V.E. The Hierarchy of Structural Transitions Induced in Cytochrome c by Anionic Phospholipids Determines Its Peroxidase Activation and Selective Peroxidation during Apoptosis in Cells // *Biochemistry*. 2007;46(49):14232-14244.
37. Stoyanovsky D.A., Vlasova I.I., Belikova N.A., **Kapralov A.A.**, Tyurin V., Greenberger J.S., Kagan V.E. Activation of NO donors in mitochondria: peroxidase metabolism of (2-hydroxyamino-vinyl)-triphenyl-phosphonium by cytochrome c releases NO and protects cells against apoptosis // *FEBS Lett*. 2008;582(5):725-728.
38. Allen B.L., Kichambare P.D., Gou P., Vlasova I.I., **Kapralov A.A.**, Konduru N., Kagan V.E., Star A. Biodegradation of single-walled carbon nanotubes through enzymatic catalysis // *Nano Lett*. 2008;8(11):3899-3903
39. Borisenko G.G., **Kapralov A.A.**, Tyurin V.A., Maeda A., Stoyanovsky D.A., Kagan V.E. Molecular design of new inhibitors of peroxidase activity of cytochrome c/cardiolipin complexes: fluorescent oxadiazole-derivatized cardiolipin // *Biochemistry*. 2008;47(51):13699-710.

40. Godoy L.C., Muñoz-Pinedo C., Castro L., Cardaci S., Schonhoff C.M., King M., Tórtora V., Marín M., Miao Q., Jiang J.F., **Kapralov A**, Jemmerson R., Silkstone G.G., Patel J.N., Evans J.E., Wilson M.T., Green D.R., Kagan V.E., Radi R., Mannick J.B. Disruption of the M80-Fe ligation stimulates the translocation of cytochrome c to the cytoplasm and nucleus in nonapoptotic cells // *Proc Natl Acad Sci U S A*. 2009;106(8):2653-8
41. Bayir H., **Kapralov A.A.**, Jiang J., Huang Z., Tyurina Y.Y., Tyurin V.A., Zhao Q., Belikova N.A., Vlasova I.I., Maeda A., Zhu J., Na H.M., Mastroberardino P.G., Sparvero L.J., Amoscato A.A., Chu C.T., Greenamyre J.T., Kagan V.E. Peroxidase Mechanism of Lipid-dependent Cross-linking of Synuclein with Cytochrome c: Protection against apoptosis versus delayed oxidative stress in Parkinson disease // *J Biol Chem*. 2009;284(23):15951-15969.
42. **Kapralov A.A.**, Vlasova I.I., Feng W., Maeda A., Walson K., Tyurin V.A., Huang Z., Aneja R.K., Carcillo J., Bayir H., Kagan V.E. Peroxidase activity of hemoglobin-haptoglobin complexes: covalent aggregation and oxidative stress in plasma and macrophages // *J Biol Chem*. 2009;284(44):30395-407.
43. Kagan V.E., Konduru N.V., Feng W., Allen B.L., Conroy J., Volkov Y., Vlasova I.I., Belikova N.A., Yanamala N., **Kapralov A.**, Tyurina Y.Y., Shi J, Kisin E.R., Murray A.R., Franks J., Stolz D., Gou P., Klein-Seetharaman J., Fadeel B., Star A., Shvedova A.A. Carbon nanotubes degraded by neutrophil myeloperoxidase induce less pulmonary inflammation // *Nat Nanotechnol*. 2010;5(5):354-9.
44. Stoyanovsky DA, **Kapralov A**, Huang Z, Maeda A, Osipov A, Hsia CJ, Ma L, Kochanek PM, Bayir H, Kagan VE. Unusual peroxidase activity of polynitroxylated pegylated hemoglobin: Elimination of H<sub>2</sub>O<sub>2</sub> coupled with intramolecular oxidation of nitroxides. *Biochem Biophys Res Commun*. 2010;399(2):139-43.
45. Kotchey GP, Allen BL, Vedala H, Yanamala N, **Kapralov AA**, Tyurina YY, Klein-Seetharaman J, Kagan VE, Star A. The enzymatic oxidation of graphene oxide. *ACS Nano*. 2011;5(3):2098-108.
46. **Kapralov AA**, Yanamala N, Tyurina YY, Castro L, Samhan-Arias A, Vladimirov YA, Maeda A, Weitz AA, Peterson J, Mylnikov D, Demicheli V, Tortora V, Klein-Seetharaman J, Radi R, Kagan VE. Topography of tyrosine residues and their involvement in peroxidation of polyunsaturated cardiolipin in cytochrome c/cardiolipin peroxidase complexes. *Biochim Biophys Acta*. 2011;1808(9):2147-55.
47. Atkinson J, **Kapralov AA**, Yanamala N, Tyurina YY, Amoscato AA, Pearce L, Peterson J, Huang Z, Jiang J, Samhan-Arias AK, Maeda A, Feng W, Wasserloos K, Belikova NA, Tyurin VA, Wang H, Fletcher J, Wang Y, Vlasova II, Klein-Seetharaman J, Stoyanovsky DA, Bayir H, Pitt BR, Epperly MW, Greenberger JS, Kagan VE. A mitochondria-targeted inhibitor of cytochrome c peroxidase mitigates radiation-induced death. *Nat Commun*. 2011;2:497.
48. Midwinter RG, Maghzal GJ, Dennis JM, Wu BJ, Cai H, **Kapralov AA**, Belikova NA, Tyurina YY, Dong LF, Khachigian L, Neuzil J, Kagan VE, Stocker R. Succinobucol induces apoptosis in vascular smooth muscle cells. *Free Radic Biol Med*. 2012;52(5):871-9.



49. **Kapralov AA**, Feng WH, Amoscato AA, Yanamala N, Balasubramanian K, Winnica DE, Kisin ER, Kotchey GP, Gou P, Sparvero LJ, Ray P, Mallampalli RK, Klein-Seetharaman J, Fadeel B, Star A, Shvedova AA, Kagan VE. Adsorption of surfactant lipids by single-walled carbon nanotubes in mouse lung upon pharyngeal aspiration. *ACS Nano*. 2012 May 22;6(5):4147-56.
50. Andón FT, **Kapralov AA**, Yanamala N, Feng W, Baygan A, Chambers BJ, Hultenby K, Ye F, Toprak MS, Brandner BD, Fornara A, Klein-Seetharaman J, Kotchey GP, Star A, Shvedova AA, Fadeel B, Kagan VE. Biodegradation of Single-Walled Carbon Nanotubes by Eosinophil Peroxidase. *Small*. 2013 doi: 10.1002/sml.201202508. [Epub ahead of print]
51. Kotchey GP, Gaugler JA, **Kapralov AA**, Kagan VE, Star A. Effect of antioxidants on enzyme-catalysed biodegradation of carbon nanotubes. *J Mater Chem B Mater Biol Med*. 2013;1(3):302-309.
52. Tyurina YY, Winnica DE, Kapralova VI, **Kapralov AA**, Tyurin VA, Kagan VE. LC/MS characterization of rotenone induced cardiolipin oxidation in human lymphocytes: Implications for mitochondrial dysfunction associated with Parkinson's disease. *Mol Nutr Food Res*. 2013 May 3: 1410-22
53. Chu CT, Ji J, Dagda RK, Jiang JF, Tyurina YY, **Kapralov AA**, Tyurin VA, Yanamala N, Shrivastava IH, Mohammadyani D, Qiang Wang KZ, Zhu J, Klein-Seetharaman J, Balasubramanian K, Amoscato AA, Borisenko G, Huang Z, Gusdon AM, Cheikhi A, Steer EK, Wang R, Baty C, Watkins S, Bahar I, Bayır H, Kagan VE. Cardiolipin externalization to the outer mitochondrial membrane acts as an elimination signal for mitophagy in neuronal cells. *Nat Cell Biol*. 2013 Oct;15(10):1197-205.
54. Rajagopal BS, Edzuma AN, Hough MA, Blundell KL, Kagan VE, Kapralov AA, Fraser LA, Butt JN, Silkstone GG, Wilson MT, Svistunenko DA, Worrall JA. The hydrogen-peroxide-induced radical behaviour in human cytochrome c-phospholipid complexes: implications for the enhanced pro-apoptotic activity of the G41S mutant. *Biochem J*. 2013 Dec 15;456 (3):441-52.
55. Tyurin VA, Balasubramanian K, Winnica D, Tyurina YY, Vikulina AS, He RR, **Kapralov AA**, Macphee CH, Kagan VE. Oxidatively modified phosphatidylserines on the surface of apoptotic cells are essential phagocytic 'eat-me' signals: cleavage and inhibition of phagocytosis by Lp-PLA2. *Cell Death Differ*. 2014 May;21(5):825-35.
56. Jiang J, Bakan A, **Kapralov AA**, Ishara Silva K, Huang Z, Amoscato AA, Peterson J, Krishna Garapati V, Saxena S, Bayır H, Atkinson J, Bahar I, Kagan VE. Designing inhibitors of cytochrome c/cardiolipin peroxidase complexes: mitochondria-targeted imidazole-substituted fatty acids. *Free Radic Biol Med*. 2014 Jun;71:221-30.
57. Tyurina YY, Poloyac SM, Tyurin VA, **Kapralov AA**, Jiang J, Anthony muthu TS, Kapralova VI, Vikulina AS, Jung MY, Epperly MW, Mohammadyani D, Klein-Seetharaman J, Jackson TC, Kochanek PM, Pitt BR, Greenberger JS, Vladimirov YA, Bayır H, Kagan VE. A mitochondrial pathway for biosynthesis of lipid mediators. *Nat Chem*. 2014 Jun;6(6):542-52.
58. Kagan VE, **Kapralov AA**, St Croix CM, Watkins SC, Kisin ER, Kotchey GP, Balasubramanian K, Vlasova II, Yu J, Kim K, Seo W, Mallampalli RK, Star A, Shvedova AA. Lung macrophages "digest" carbon nanotubes using a superoxide/peroxynitrite oxidative pathway. *ACS Nano*. 2014 Jun 24;8(6):5610-21

59. Yanamala N, **Kapralov AA**, Djukic M, Peterson J, Mao G, Klein-Seetharaman J, Stoyanovsky DA, Stursa J, Neuzil J, Kagan VE. Structural re-arrangement and peroxidase activation of cytochrome c by anionic analogues of vitamin E, tocopherol succinate and tocopherol phosphate. *J Biol Chem*. 2014 Nov 21;289(47):32488-98.
60. Zhao Y, Burkert SC, Tang Y, Sorescu DC, **Kapralov AA**, Shurin GV, Shurin MR, Kagan VE, Star A. Nano-gold corking and enzymatic uncorking of carbon nanotube cups. *J Am Chem Soc*. 2015 Jan 21;137(2):675-84.
61. Seo W, **Kapralov AA**, Shurin GV, Shurin MR, Kagan VE, Star A. Payload drug vs. nanocarrier biodegradation by myeloperoxidase- and peroxynitrite-mediated oxidations: pharmacokinetic implications. *Nanoscale*. 2015 May 7;7(19):8689-94.
62. Bakan A, **Kapralov AA**, Bayir H, Hu F, Kagan VE, Bahar I. Inhibition of Peroxidase Activity of Cytochrome c: De Novo Compound Discovery and Validation. *Mol Pharmacol*. 2015; 88(3):421-7
63. Mao G, Qu F, St Croix CM, Tyurina YY, Planas-Iglesias J, Jiang J, Huang Z, Amoscato AA, Tyurin VA, **Kapralov AA**, Cheikhi A, Maguire J, Klein-Seetharaman J, Bayir H, Kagan VE. Mitochondrial Redox Opto-Lipidomics Reveals Mono-Oxygenated Cardiolipins as Pro-Apoptotic Death Signals. *ACS Chem Biol*. 2016 Feb 19;11(2):530-40.
64. Kagan VE, Jiang J, Huang Z, Tyurina YY, Desbourdes C, Cottet-Rousselle C, Dar HH, Verma M, Tyurin VA, **Kapralov AA**, Cheikhi A, Mao G, Stolz D, St Croix CM, Watkins S, Shen Z, Li Y, Greenberg ML, Tokarska-Schlattner M, Boissan M, Lacombe ML, Epanand RM, Chu CT, Mallampalli RK, Bayir H, Schlattner U. NDPK-D (NM23-H4)-mediated externalization of cardiolipin enables elimination of depolarized mitochondria by mitophagy. *Cell Death Differ*. 2016 Jan 8. doi: 10.1038/cdd.2015.160
65. Tejero J, **Kapralov AA**, Baumgartner MP, Sparacino-Watkins CE, Anthonymutu TS, Vlasova II, Camacho CJ, Gladwin MT, Bayir H, Kagan VE. Peroxidase activation of cytoglobin by anionic phospholipids: Mechanisms and consequences. *Biochim Biophys Acta*. 2016 May;1861(5):391-401
66. Mahapatra G, Varughese A, Ji Q, Lee I, Liu J, Vaishnav A, Sinkler C, **Kapralov AA**, Moraes CT, Sanderson TH, Stemmler TL, Grossman LI, Kagan VE, Brunzelle JS, Salomon AR, Edwards BF, Hüttemann M. Phosphorylation of Cytochrome c Threonine 28 Regulates Electron Transport Chain Activity in Kidney: IMPLICATIONS FOR AMP KINASE. *J Biol Chem*. 2017;292(1):64-79.
67. Kagan VE, Mao G, Qu F, Angeli JP, Doll S, Croix CS, Dar HH, Liu B, Tyurin VA, Ritov VB, **Kapralov AA**, Amoscato AA, Jiang J, Anthonymuthu T, Mohammadyani D, Yang Q, Proneth B, Klein-Seetharaman J, Watkins S, Bahar I, Greenberger J, Mallampalli RK, Stockwell BR, Tyurina YY, Conrad M, Bayir H. Oxidized arachidonic and adrenic PEs navigate cells to ferroptosis. *Nat Chem Biol*. 2017, (1):81-90.
68. Chiu CF, Dar HH, **Kapralov AA**, Robinson RAS, Kagan VE, Star A. Nanoemitters and innate immunity: the role of surfactants and bio-coronas in myeloperoxidase-catalyzed oxidation of pristine single-walled carbon nanotubes. *Nanoscale*. 2017;9(18):5948-5956

69. Wenzel SE, Tyurina YY, Zhao J, St Croix CM, Dar HH, Mao G, Tyurin VA, Anthony Muthu TS, **Kapralov AA**, Amoscato AA, Mikulska-Ruminska K, Shrivastava IH, Kenny EM, Yang Q, Rosenbaum JC, Sparvero LJ, Emler DR, Wen X, Minami Y, Qu F, Watkins SC, Holman TR, VanDemark AP, Kellum JA, Bahar I, Bayir H, Kagan VE. PEBP1 Wardens Ferroptosis by Enabling Lipoxigenase Generation of Lipid Death Signals. *Cell*. 2017;171, (3):628-641
70. Veglia F, Tyurin VA, Mohammadyani D, Blasi M, Duperret EK, Donthireddy L, Hashimoto A, **Kapralov A**, Amoscato A, Angelini R, Patel S, Alicea-Torres K, Weiner D, Murphy ME, Klein-Seetharaman J, Celis E, Kagan VE, Gabrilovich DI. Lipid bodies containing oxidatively truncated lipids block antigen cross-presentation by dendritic cells in cancer. *Nat Commun*. 2017, 8(1):2122.
71. Mohammadyani D, Yanamala N, Samhan-Arias AK, **Kapralov AA**, Stepanov G, Nuar N, Planas-Iglesias J, Sanghera N, Kagan VE, Klein-Seetharaman J. Structural characterization of cardiolipin-driven activation of cytochrome c into a peroxidase and membrane perturbation. *Biochim Biophys Acta*. 2018,1860(5):1057-1068.
72. Dar HH, Tyurina YY, Mikulska-Ruminska K, Shrivastava I, Ting HC, Tyurin VA, Krieger J, St Croix CM, Watkins S, Bayir E, Mao G, Armbruster CR, **Kapralov A**, Wang H, Parsek MR, Anthony Muthu TS, Ogunsola AF, Flitter BA, Freedman CJ, Gaston JR, Holman TR, Pilewski JM, Greenberger JS, Mallampalli RK, Doi Y, Lee JS, Bahar I, Bomberger JM, Bayir H, Kagan VE. Pseudomonas aeruginosa utilizes host polyunsaturated phosphatidylethanolamines to trigger theft-ferroptosis in bronchial epithelium. *J Clin Invest*. 2018 Oct 1;128(10):4639-4653.
73. Burkert SC, Shurin GV, White DL, He X, **Kapralov AA**, Kagan VE, Shurin MR, Star A. Targeting myeloid regulators by paclitaxel-loaded enzymatically degradable nanocups. *Nanoscale*. 2018 Sep 27;10(37):17990-18000.
74. Kalpage HA, Vaishnav A, Liu J, Varughese A, Wan J, Turner AA, Ji Q, Zurek MP, **Kapralov AA**, Kagan VE, Brunzelle JS, Recanati MA, Grossman LI, Sanderson TH, Lee I, Salomon AR, Edwards BFP, Hüttemann M. Serine-47 phosphorylation of cytochrome c in the mammalian brain regulates cytochrome c oxidase and caspase-3 activity. *FASEB J*. 2019 Dec;33(12):13503-13514
75. **Kapralov AA**, Yang Q, Dar HH, Tyurina YY, Anthony Muthu TS, Kim R, St Croix CM, Mikulska-Ruminska K, Liu B, Shrivastava IH, Tyurin VA, Ting HC, Wu YL, Gao Y, Shurin GV, Artyukhova MA, Ponomareva LA, Timashev PS, Domingues RM, Stoyanovsky DA, Greenberger JS, Mallampalli RK, Bahar I, Gabrilovich DI, Bayir H, Kagan VE. Redox lipid reprogramming commands susceptibility of macrophages and microglia to ferroptotic death. *Nat Chem Biol*. 2020 Mar;16(3):278-290.
76. He X, White DL, **Kapralov AA**, Kagan VE, Star A. Photoluminescence Response in Carbon Nanomaterials to Enzymatic Degradation. *Anal Chem*. 2020 Oct 6;92(19):12880-12890

77. Sun WY, Tyurin VA, Mikulska-Ruminska K, Shrivastava IH, Anthonymuthu TS, Zhai YJ, Pan MH, Gong HB, Lu DH, Sun J, Duan WJ, Korolev S, Abramov AY, Angelova PR, Miller I, Beharier O, Mao GW, Dar HH, **Kapralov AA**, Amoscato AA, Hastings TG, Greenamyre TJ, Chu CT, Sadovsky Y, Bahar I, Bayır H, Tyurina YY, He RR, Kagan VE Phospholipase iPLA2 $\beta$  averts ferroptosis by eliminating a redox lipid death signal. *Nat Chem Biol.* 2021 Apr;17(4):465-476.
78. Sparvero LJ, Tian H, Amoscato AA, Sun WY, Anthonymuthu TS, Tyurina YY, **Kapralov O**, Javadov S, He RR, Watkins SC, Winograd N, Kagan VE, Bayır H. Direct Mapping of Phospholipid Ferroptotic Death Signals in Cells and Tissues by Gas Cluster Ion Beam Secondary Ion Mass Spectrometry (GCIB-SIMS). *Angew Chem Int Ed Engl.* 2021 May 17;60(21):11784-11788
79. Mikulska-Ruminska K, Anthonymuthu TS, Levkina A, Shrivastava IH, **Kapralov AA**, Bayır H, Kagan VE, Bahar I. NO $\bullet$  Represses the Oxygenation of Arachidonoyl PE by 15LOX/PEBP1: Mechanism and Role in Ferroptosis. *Int J Mol Sci.* 2021 May 17;22(10):5253
80. Jang S, Chapa-Dubocq XR, Tyurina YY, St Croix CM, Kapralov AA, Tyurin VA, Bayır H, Kagan VE, Javadov S. Elucidating the contribution of mitochondrial glutathione to ferroptosis in cardiomyocytes. *Redox Biol.* 2021 Sep;45:102021. doi: 10.1016/j.redox.2021.102021
81. Dar HH, Anthonymuthu TS, Ponomareva LA, Souryavong AB, Shurin GV, Kapralov AO, Tyurin VA, Lee JS, Mallampalli RK, Wenzel SE, Bayır H, Kagan VE. A new thiol-independent mechanism of epithelial host defense against *Pseudomonas aeruginosa*: iNOS/NO $\bullet$  sabotage of theft-ferroptosis. *Redox Biol.* 2021 Sep;45:102045. doi: 10.1016/j.redox.2021.102045.
82. Dar HH, Epperly MW, Tyurin VA, Amoscato AA, Anthonymuthu TS, Souryavong AB, Kapralov AA, Shurin GV, Samovich SN, St Croix CM, Watkins SC, Wenzel SE, Mallampalli RK, Greenberger JS, Bayır H, Kagan VE, Tyurina YY. *P. aeruginosa* augments irradiation injury via 15-lipoxygenase-catalyzed generation of 15-HpETE-PE and induction of theft-ferroptosis. *JCI Insight.* 2022 Feb 22;7(4):e156013. doi: 10.1172/jci.insight.156013.
83. Lamade AM, Wu L, Dar HH, Mentrup HL, Shrivastava IH, Epperly MW, St Croix CM, Tyurina YY, Anthonymuthu TS, Yang Q, Kapralov AA, Huang Z, Mao G, Amoscato AA, Hier ZE, Artyukhova MA, Shurin G, Rosenbaum JC, Gough PJ, Bertin J, VanDemark AP, Watkins SC, Mollen KP, Bahar I, Greenberger JS, Kagan VE, Whalen MJ, Bayır H. Inactivation of RIP3 kinase sensitizes to 15LOX/PEBP1-mediated ferroptotic death. *Redox Biol.* 2022 Apr;50:102232. doi: 10.1016/j.redox.2022.102232.

## Review Articles

1. **Kapralov A.A.**, Petrova G.V., Donchenco G.V. Physico-chemical properties and biological role of  $\alpha$ -tocopherol binding protein // *Successes of modern biology (Moscow)*. 1993;113(2):313-326.
2. Tiulenev V.I., **Kapralov A.A.**, Belik Ya.V. Role of S-100 protein in the function of brain cell nuclei // *Ukr Biokhim Zh.* 1996;68(3):3-13. Russian.

3. **Kapralov A.A.**, Petrova G.V., Donchenko G.V. The mechanisms of action of tocopherol on cell function. Oxidative and non antioxidative mechanisms // *Successes of modern (Moscow)* 2003;12:867-915. Russian.
4. Petrova G.V. **Kapralov A.A.**, Donchenko G.V. Vitamin E and apoptosis // *Ukr Biokhim Zh.* 2003;75(6):25-34. Russian.
5. Kagan V.E., Tyurina Y.Y., Bayir H., Chu C.T., **Kapralov A.A.**, Vlasova I.I., Belikova N.A., Tyurin V.A., Amoscato A., Epperly M., Greenberger J., Dekosky S., Shvedova A.A., Jiang J. The "pro-apoptotic genes" get out of mitochondria: oxidative lipidomics and redox activity of cytochrome c/cardioplipin complexes // *Chem Biol Interact.* 2006;163(1-2):15-28.
6. Kagan V.E., Bayir H.A., Belikova N.A., **Kapralov O.**, Tyurina Y.Y., Tyurin V.A., Jiang J., Stoyanovsky D.A., Wipf P., Kochanek P.M., Greenberger J.S., Pitt B., Shvedova A.A., Borisenko G. Cytochrome c/cardioplipin relations in mitochondria: a kiss of death // *Free Radic Biol Med.* 2009;46(11):1439-53.
7. Kotchey GP, Hasan SA, **Kapralov AA**, Ha SH, Kim K, Shvedova AA, Kagan VE, Star A.A natural vanishing act: the enzyme-catalyzed degradation of carbon nanomaterials. *Acc Chem Res.* 2012;45(10):1770-81.
8. Vlasova II, **Kapralov AA**, Michael ZP, Burkert SC, Shurin MR, Star A, Shvedova AA, KaganVE. Enzymatic oxidative biodegradation of nanoparticles: Mechanisms, significance and applications. *Toxicol Appl Pharmacol.* 2016 May 15;299:58-69.
9. Maguire JJ, Tyurina YY, Mohammadyani D, **Kapralov AA**, Anthonymuthu TS, Qu F, Amoscato AA, Sparvero LJ, Tyurin VA, Planas-Iglesias J, He RR, Klein-Seetharaman J, Bayir H, Kagan VE. Known unknowns of cardioplipin signaling: The best is yet to come. *Biochim Biophys Acta.* 2017, 1862(1):8-24.
10. Tyurina YY, St Croix CM, Watkins SC, Watson AM, Epperly MW, Anthonymuthu TS, Kisin ER, Vlasova II, Krysko O, Krysko DV, **Kapralov AA**, Dar HH, Tyurin VA, Amoscato AA, Popova EN, Bolevich SB, Timashev PS, Kellum JA, Wenzel SE, Mallampalli RK, Greenberger JS, Bayir H, Shvedova AA, KaganVE. Redox (phospho)lipidomics of signaling in inflammation and programmed cell death. *J Leukoc Biol.* 2019 May 9. doi: 10.1002/JLB.3MIR0119-004RR
11. Kagan VE, Tyurina YY, Vlasova II, Kapralov AA, Amoscato AA, Anthonymuthu TS, Tyurin VA, Shrivastava IH, Cinemre FB, Lamade A, Epperly MW, Greenberger JS, Beezhold DH, Mallampalli RK, Srivastava AK, Bayir H, Shvedova AA. Redox Epiphospholipidome in Programmed Cell Death Signaling: Catalytic Mechanisms and Regulation. *Front Endocrinol (Lausanne).* 2021 Feb 19;11:628079.

## **Published Abstracts**

1. Donchenko G.V., **Kapralov A.A.**, Petrova G.V.  $\alpha$ -tocopherol prevents the inhibitory effects of A23187 and verapamil on RNA synthesis in isolated rat liver nuclei. *Abstr. XII<sup>th</sup> Internat. Congress of Pharmacol.-Montreal.-1994 // Can. J. Physiol. Pharmacol.-1994.-v.72, suppl.1.-P.247.*

2. Donchenko G.V., Petrova G.V., **Kapralov A.A.** The action of tocopherol and tocopherol binding proteins on RNA-polymerase activity // 16 International Congress of Biochemistry and Molecular Biology.-New Delhi, India.-1994.-P1-223.
3. Masyuk A.I., Dolgova E.N., **Kapralov A.A.** Regulation of RNA-polymerase activity in rat liver nuclei by bile acids. XIV International Bile Acids Meeting. Bile acids in Hepatobiliar Diseases-Basic Research and Clinical Application. Freiburg, October 22-24? 1996, p.59
4. **Kapralov A.A.**, Petrova G.V., Donchenko G.V. The participation of tocopherol binding protein, c AMP, Ca<sup>2+</sup>, and protein kinase C in the action of tocopherol on synthesis of nucleic acids in rat liver nuclei IInd European Congress of Pharmacology.- Budapest, Hungary.-1999 //Fundam. & Clin. Pharmacol.-v.13, suppl.1.-p.315s.
5. Dolgova E.N., Reshetnik E.N., **Kapralov A.A.**, Petrova G.V. The action of verapamile and dalarginine on bile secretion.// 2002 Gastro-2002, 4<sup>th</sup> russian forum with international participation, Sankt-Petersburg, 17-20 september 2002.
6. **Kapralov A.A.**, Tyurina Y.Y., Borisenko G.G., Schor N.F., Graham S.H., Kagan. V. E. Cyclooxygenase -2-catalyzed oxidation of 6-hydroxydopamine in PC12 pheochromocytoma cells. Implication for Parkinson's desiase. 43th Annual Meeting of society of Toxicology, Baltimore, 2004, p.52.
7. Tyurin V.A., Zhao Q., Jiang J., Borisenko G.G., Gandley R.E., Tyurina Y.Y., Bair H., **Kapralov A.A.**, Shvedova A.A., Komarov A.M., Hubel C.A., Taylor R.N., Stoyanovskiy D.A., V.E.Kagan . Assessment of S-nitrosothiols in biological fluids: content of S-nitrosothiols in plasma. 43th Annual Meeting of society of Toxicology, Baltimore, 2004, p.411.
8. Y.A. Vladimirov, N.A. Belikova, A.N. Osipov, D.A. Stoyanovsky, M.V. Potapovich, G.G. Borisenko, **A.A. Kapralov**, Y.Y. Tyurina, V.A. Tyurin, J. Jiang, V.A. Kini, A. Lysytsya, V.B. Ritov, S.W. Ryter, A.M. Choi, V.E. Kagan. "Interactions of mitochondrial cytochrome c with small ligands: role in regulation of cardioliipin oxygenase activity and apoptosis". 11<sup>th</sup> annual meeting of Oxygen society (Society for free radical biology and medicine), SFBRM, St.Thomas, VI, USA, November 2004.
9. A.N.Osipov, I.V.Kurnikov, Y.A.Vladimirov, N.A.Belikova, D.A.Stoyanovsky, M.V.Potapovich, G.G.Borisenko, **A.A.Kapralov**, Y.Y.Tyurina, V.A.Tyurin, J.Jiang, V.Kini, A.Lysytsya, V.B.Ritov, A.M.Choi, S.W.Ryter, V.E.Kagan. Cardioliipin destabilizes cytochrome c in mitochondria and makes its catalytic site accessible to small ligands role in apoptosis. Abstract No. 2284. 2005 Itinerary Planner. New Orleans, LA: Society of Toxicology
10. N.A.Belikova, A.N.Osipov, **A.A.Kapralov**, M.V.Potapovich, V.E.Kagan. Physical and chemical interaction between cardioliipin and cytochrome c Abstract No. 2283. 2005 Itinerary Planner. New Orleans, LA: Society of Toxicology
11. I.I.Vlasova, V.A.Tyurin, **A.A.Kapralov**, I.V.Kurnikov, A.N.Osipov, M.Potapovich, D.Stoyanovski, V.E.Kagan. Binding of NO and nitrosylation of cytochrome c/cardioliipin complex inhibits its peroxidase activity and cardioliipin oxidation. Abstract No. 1158. 2006 Itinerary Planner. San Diego, CA: Society of Toxicology

12. V.A.Tyurin, A.N.Osipov, Y.Y.Tyurina, H.Bayir, L.V.Basova, N.A.Belikova, **A.A.Kapralov**, Q.Zhao, J.Jiang, P.K.Gill, D.H.Waldeck, V.E.Kagan. Lysocardiolipins in apoptosis: interactions with cytochrome c tBID and asymmetry of distribution in mitochondria. Abstract No. 2003. 2006 Itinerary Planner. San Diego, CA: Society of Toxicology
13. N.A.Belikova, Y.A.Vladimirov, A.N.Osipov, **A.A.Kapralov**, L.V.Basova, I.V.Kurnikov, V.E.Kagan. Peroxidase activity and unfolding of cytochrome c induced by cardiolipin: role in apoptotic signaling. Abstract No. 2004. 2006 Itinerary Planner. San Diego, CA: Society of Toxicology
14. I.I.Vlasova, **A.A.Kapralov**, J.Jiang, L.V.Basova, N.A. Belikova, V.A.Tyurin, Y.Y.Tyurina, J. Martin, A.Glumac, H.Bayir, V.E.Kagan Peroxidase complexes of cytochrome c with anionic lipids: structural pre-requisites, mechanisms, and cytotoxic effects Abstract No. 292. 2007 Itinerary Planner Charlotte, NC, Society of Toxicology
15. **A.A.Kapralov**, I.I.Vlasova, W Feng, L.Basova, J. Martin, A.Glumac, H.Bayir, V.E.Kagan Free fatty acids form peroxidase complexes with cyt c: roles in mitochondrial oxidative stress and damage Abstract No. 293. 2007 Itinerary Planner Charlotte, NC, Society of Toxicology
16. G.G.Borisenko, **A.A.Kapralov**, V.A.Tyurin, V.E. Kagan Modified cardiolipin homologues as inhibitors of pro-apoptotic peroxidase function of cytochrome c Abstract No. 586. 2008 Itinerary Planner Seattle, WA, Society of Toxicology
17. Bayir H, Walson K, Aneja R, Carcillo J, **Kapralov A**, Vlasova I, Feng WH, Maeda A, Fortenberry J, Kagan V: A novel role for haptoglobin and hemoglobin complexes in sepsis: peroxidase activity, depletion of nitric oxide and uptake by macrophages. Crit Care Med 36(12):A39, 2008.
18. V.A.Tyurin, M.Y.Jung, Y.Y.Tyurina, T.Prieto, Q.Zhao, **A.A.Kapralov**, N.A.Belikova, I.Nantes, V.E.Kagan. Cardiolipin oxidation, hydrolysis and accumulation of monolysocardiolipins and oxidized free fatty acids during apoptosis: role of cytochrome c Abstract No. 302. 2009 Itinerary Planner. Baltimore, MD: Society of Toxicology
19. **A.Kapralov**, W.Feng, I.I.Vlasova, A.Maeda, J.A.Carcillo, H.Bayir, V.E.Kagan. Hemoglobin/haptoglobin aggregates produced by peroxidase activity are taken up and injure macrophages. Abstract No. 318. 2009 Itinerary Planner. Baltimore, MD: Society of Toxicology
20. N.V.Konduru, I.I.Vlasova, B.L.Allen, E.R.Kisin, A.R.Murray, **A.A.Kapralov**, A.Star, A.A.Shvedova, V.E.Kagan. Biodegradation of Single Walled Carbon Nanotubes through Peroxidase Catalysis. Abstract No. 2199. 2009 Itinerary Planner. Baltimore, MD: Society of Toxicology
21. Tyurin V, Jung M, Tyurina Y, Prieto T, Zhao Q, **Kapralov A**, Belikova N, Nantes I, Kagan VE. Cardiolipin oxidation, hydrolysis and accumulation of monolysocardiolipins and oxidized free fatty acids during apoptosis: Role of cytochrome c. Abstract No. 1973.. 2009 Itinerary Planner. Baltimore, MD: Society of Toxicology
22. Atkinson J, **Kapralov A**, Huang Z, Belikova N. Mitochondria-targeted ligands of heme-iron in cytochrome c as novel radioprotectors/radiomitigators. 56<sup>th</sup> Annual Meeting of the Radiation research Society ,Maui, Hawaii, USA, Sep 15 – 29,2010.

23. Atkinson J, **Kapralov A**, Yanamala N, Amoscato AA, Pearce LL, Peterson J, Huang Z, Jiang, Kagan VE, Samhan Arias A, Maeda A, Feng W, Wasserloos K, Belikova N, Tyurin V, Wang H, Fletcher J, Wang Y, Vlasova I, Klein-Seetharaman J, Stoyanovsky D, Bayir H, Pitt BR, Epperly M, Greenberger JS, Kagan VE. A mitochondria-targeted imidazole-substituted fatty acids inhibit cytochrome c peroxidase and mitigate radiation induced death. (abstract). In: The Toxicologist, v.126. 51th Annual Meeting for Society of Toxicology; 2012 Mar 11 - 15; San Francisco, CA. 2012. 439.
24. Chu Charleen T, Ji J, Dagda R, Amoscato AA, **Kapralov A**, Yanamala N, Klein JH, Balasubramanian K, Borisenko G, Huang Z. Cardiolipin redistribution as an "eat-me" signal for mitophagy in Parkinson disease models. 42<sup>nd</sup> Annual Meeting of the Society for Neuroscience, New Orleans, LA, USA, Oct 13 – 17, 2012
25. Star A, **Kapralov A**, Amoscato AA, Tyurin V, Seo W, Epperly M, Greenberger JS, Tyurina Y, Kagan VE. Development of a Mitochondria-Targeted Nano-Complex of Imidazole-Substituted Oleic Acid As a Radiomitigator (abstract). In: The Toxicologist, v.132. 52nd Annual Meeting for Society of Toxicology; 2013 Mar 10 - 14; San Antonio, TX. 2013. 428.
26. Vlasova II, **Kapralov A**, Star A, Saxena SK, Kapralova VI, Bayir H, Shvedova AA, Kagan VE. Graphene Oxide Unfolds Cytochrome c And "Unmasks" Its Peroxidase Activity Leading To Oxidative Degradation Of the Nano-Surface. (abstract). International Nanotoxicology Congress Nanotox-2014; 2014 Apr 23 - 26; Antalya, Turkey. Turkey: aaa 81.

### **Presentations:**

1. **A.A Kapralov**, V. Yanamala, W. Feng, B. Fadeel, A.Star, A.A.Shvedova, V.E.Kagan. Biodegradation of Carbon Nanotubes by Eosynophil Peroxidase. Abstract No. 54. 2011 Itinerary Planner. Washington, DC: Society of Toxicology
2. **A.A Kapralov**, Fadeel, A.Star, A.A.Shvedova, V.E.Kagan. New Role Of Lung Macrophages In Carbon Nanotubes-Induced Injury: Oxidative Biodegradation Via Superoxide/ Peroxynitrite Pathway. Presented at: International Nanotoxicology Congress Nanotox-2014; 2014 Apr 23-26; Antalya, Turkey.

## **SERVICE**

### **Manuscript and Other Document/Publication Review**

I served as peer reviewer in several journals. During 2021, I reviewed three articles submitted to Archives of Biochemistry and Biophysics, Biomedicine & Pharmacotherapy, Nature Communications.