

## Curriculum Vitae



Name: **Vadim V. Sumbayev**

### British Citizen

### Qualifications:

2003 Dr Sci (Habilitation), NAS of Ukraine

1999 PhD in Biochemistry, Palladin Institute of Biochemistry, NAS of Ukraine

1998 Master of Science (Biology/Biochemistry), Mechnikov Odessa University

**Languages:** Russian (first mother tongue), English (fluent), Ukrainian (second mother tongue), German (good), Danish (satisfactory), Italian (basic).

### Employment history:

- 12/ 2006-present **Senior Lecturer/Associate Professor in Biochemistry**, School of Pharmacy, University of Kent, UK; **since 2017 – Head of Department of Biological Sciences, Director of Research**
- 12/2003–11/2006 **Assistant Professor**, University of Aarhus, Department of Molecular Biology, iNANO Center, Denmark
- 11/2001–11/2003 **Humboldt Research Fellow**, University of Kaiserslautern, Institute for Cell Biology, Germany, **since 2004 – Fellow & Alumni of Alexander von Humboldt Foundation**
- 9/1999-10/2001 **Assistant, then Associate Professor**, Mechnikov Odessa University, Department of Biochemistry, Ukraine

### Selected recent research grants

2016 – 2018 Daphne Jackson Research Fellowship grant (sponsored by Medical Research Council UK, PI – £49,000).

2016 – 2017 Diamond light source grant (PI - £236,000)

2015 – Self funded PhD student (start date – 1/04/2016 – funded by Algerian Government – fees agreed - £17,380 p.a.).

2015 – 2016 Diamond light source grant (Co-PI - £120,000)

2015-2016 – Swiss research project grant (jointly with University of Basel, Co-PI) including consumables and five months research studentship (in total - £15,000)

2014 – Present time – University of Kent 50<sup>th</sup> anniversary PhD studentship (primary supervisor, PI)

2014 -2015 – Swiss research project grant (jointly with University of Basel, Co-PI) including consumables and five months research studentship.

2014 – Diamond light source grant (Co-PI - £60,000)

2014 – 2015 University of Kent Faculty of Science Research Fund Grants (£3,000)

2013 – European Academy for Allergy and Clinical Immunology postdoctoral Research Award

2012 – 2015 – Self funded UK PhD studentship (primary supervisor, PI – successfully completed)

2011 – 2014 – School of Pharmacy PhD studentship (primary supervisor, PI, successfully completed)  
2010-2012 – Asthma UK foundation research grant (PI, £50,000)  
2009 -2010 – Royal Society research project grant (PI, £15,000)  
2008-2011 – Self-funded overseas PhD studentship (primary supervisor, PI, £49,000, successfully completed)  
2006 – 2010 Start-up grant and PhD studentship from the University of Kent (PI, Successfully completed)  
2003 – 2006 Danish Research agency project and programme grants (Co-PI)  
2001 – 2003 Humboldt Research Fellowship (Fellowship holder)

**Grant Reviewing:** Wellcome Trust, Medical Research Council, Biotechnology and Biological Sciences Research Council, Cancer Research UK, Medical Research Council of Singapore.

**Ad hoc Journal Reviewing:**

Leukaemia, Cancer Research, Journal of Biological Chemistry, Journal of Leukocyte Biology, Immunology and Cell Biology, Cellular and Molecular Immunology, Free radical Biology and Medicine, PLoS One, FEBS Letters, Biochemical Journal, EMBO Journal, Thrombosis and Haemostasis.

**Other Duties:**

- **Editorial board member of the “Scientific Reports” – Nature publishing Group.**
- Editorial board member of the “World Journal of Gastrointestinal Pathophysiology”
- Editorial board member of the “World Journal of Immunology”

**Invited and Plenary lectures:**

- 2018 – Invited speaker at the 23<sup>rd</sup> International Congress on Advances in Oncology (Athens, Greece)
- 2018 – Invited speaker at the UK annual meeting on Natural Killer cells (London, UK)
- 2017 – Plenary lecture at “6th International Conference on Health Science and Biomedical Systems” (Bern, Switzerland)
- 2016 – Invited speaker and section chair (Leukaemia) – 21<sup>st</sup> International Congress on Advances in Oncology (Athens, Greece)
- 2015 – Oral presentation award (4<sup>th</sup> Summit “Biomarkers in Diagnostics” – Berlin, Germany).
- 2014 – Plenary lecture at the 3rd International Conference on Biomedicine and Health Engineering (Tenerife, Spain).
- 2013 – Plenary lecture at the International Conference on Nanotechnology (Cambridge, UK).
- 2011 – Invited lecture at the International Mast Cell and Basophil Meeting in partnership with the COST Annual Conference on Mast Cells and Basophils (Southampton, UK)
- 2011 – Invited lecture at the XXII World Allergy Congress, 4-8 December 2011 (Cancún, México). *WAO Travel Grant Recipient*
- 2010 - Plenary lecture at the International Conference of Pathology’ 10 (Malta)
- 2010 - Plenary lecture at the International Conference on Biochemistry and Medicinal Chemistry (Cambridge, UK)
- 2009 - Invited lecture at the World Allergy Congress (Buenos Aires, Argentina)
- 2009 - Invited lecture at the International Autoimmunity Congress (Singapore)
- 2006 - Invited lecture at the European Congress of Immunology (Paris, France)
- 2004 - Invited lecture at the International Congress on Peroxynitrite (Konstanz, Germany)

**External and Internal Examining (current posts only)**

- External PhD examiner for Imperial College London, University of Nottingham, University of East Anglia, University of Essex.

## Subjects and Courses Taught in the last 8 years

### Undergraduate Teaching

Biochemistry, Cancer Biology, Anti-cancer pro-drugs, Inflammation. These are courses for MPharm students (years 1-4). Include lectures, laboratory practicals, workshops, seminars.

Distance work-based learning (Fd degree). Biochemistry and Immunology - development and delivery of the materials.

Sustained research project - was acting as a direct supervisor to over 50 students in total between 1/12/2006 and now.

### Post Graduate Teaching

MSc course - Advanced Drug Discovery.

Enzymology and Laboratory Mathematics. Developed from scratch and taught the materials. Supervision of the Master laboratory based project.

### Other relevant experience

- Finalist for National Skills Award (UK Life Sciences Provider of the Year) (2013, and 2014). Presented by the Lord, Prof. Robert Winston (Imperial College London).
- Invited Seminar at the Department of Virology, faculty of Medicine, Imperial College (2013)
- Special representative of Humboldt Foundation (as former Humboldt Fellow) at the Special Humboldt/Royal Society Meeting hosted by Dr. Stefan Melich and Professor Martyn Poliakoff (2012)
- Kent Union Teaching Award (2012 and 2013)
- World Allergy organisation Award (twice - 2009 and 2011)
- Seminar at the Nanoscience Centre, University of Aarhus, Denmark – Invited by Professor Fleming Besenbacher (Head of the Centre, Head of Carlsberg Foundation, 2011)

### Patents

- 1) **European patent No 16736007.2** “Latrophilins as Novel Biomarkers for leukaemia diagnostics”. Priority GB/19.06.15/GBA 201510880
- 2) **Patent 22683A** “Method for xanthine oxidase purification”. **1997**

### List of Publications:

1. Sakhnevych SS, Yasinska IM, Bratt AM, Benlaouer O, Gonçalves Silva I, Hussain R, Siligardi G, Fiedler W, Wellbrock J, Gibbs BF, Ushkaryov YA, **Sumbayev VV**. Cortisol facilitates the immune escape of human acute myeloid leukemia cells by inducing latrophilin 1 expression. **Cell Mol Immunol** 2018, in press.
2. Yasinska IM, Goncalves Silva I, Sakhnevych SS, Ruegg L, Hussain R, Siligardi G, Fiedler W, Wellbrock J, Bardelli M, Varani L, Raap U, Berger S, Gibbs BF, Fasler-Kan E, **Sumbayev VV**. High mobility group box 1 (HMGB1) acts as an “alarmin” to promote acute myeloid leukaemia progression. **Oncolmmunology** 2018, 7(6): e1438109.
3. Yasinska IM, Gonçalves Silva I, Sakhnevych S, Gibbs BF, Raap U, Fasler-Kan E, **Sumbayev VV**. Biochemical mechanisms implemented by human acute myeloid leukemia cells to suppress host immune surveillance. **Cell Mol Immunol**. 2018, in press.
4. Yasinska IM, Ceccone G, Ojea-Jimenes I, Ponti J, Hussain R, Siligardi G, Berger S, Fasler-Kan E, Bardelli M, Varani L., Fiedler W, Wellbrock J, Raap U, Gibbs BF, Calzolari L, **Sumbayev VV**. Highly specific targeting of human acute myeloid leukaemia cells using pharmacologically active nanoconjugates. **Nanoscale** 2018, 10: 5827-5833.
5. Gonçalves Silva I, Yasinska IM, Sakhnevych SS, Fiedler W, Wellbrock J, Bardelli M, Varani L, Hussain R, Siligardi G, Ceccone G, Berger SM, Ushkaryov YA, Gibbs BF, Fasler-Kan E, **Sumbayev VV**. The Tim-3-galectin-9 Secretory Pathway is Involved in the Immune Escape of Human Acute Myeloid Leukemia Cells. **EBioMedicine**. 2017, 22: 44-57.
6. Gonçalves Silva, I., Ruegg, L., Gibbs, B. F., Bardelli, M., Fruewirth, A. Varani, L., Berger, S., Fasler-Kan, E., and **Sumbayev, V. V**. The immune receptor Tim-3 acts as a trafficker in a Tim-3/galectin-9 autocrine loop in human myeloid leukaemia cells. (2016) **Oncolmmunology** 5, e1195535.
7. **Sumbayev, V.V.**, Gonçalves Silva, I., Blackburn, J., Gibbs, B. F., Yasinska, I.M., Garrett, M. D., Tonevitsky, A. G., Ushkaryov, Y. A. Expression of Functional Neuronal Receptor Latrophilin 1 in Human Acute Myeloid Leukaemia Cells. (2016) **Oncotarget** 7, 45575 – 45583.
8. Gonçalves Silva, I., Gibbs, B. F., Bardelli, M., Varani, L., and **Sumbayev, V. V**. Differential expression and biochemical activity of the immune receptor Tim-3 in healthy and malignant human myeloid cells. (2015) **Oncotarget**, 6: 33823-33
9. Gibbs, B. F., Gonçalves Silva, I., Prokhorov, A., Aboali, M., Yasinska, I. M., Casely-Hayford, M.A., Berger, S. M., Fasler-Kan, E., and **Sumbayev, V. V**. Caffeine affects the biological responses of human hematopoietic cells of myeloid lineage via downregulation of the mTOR pathway and xanthine oxidase activity (2015) **Oncotarget**, 6: 28678-92.
10. Prokhorov, A., Gibbs, B. F., Bardelli, M., Ruegg, L., Fasler-Kan, E., Varani, L., & **Sumbayev, V. V**. The Immune Receptor Tim-3 Mediates Activation of PI3 kinase/mTOR and HIF-1 Pathways in Human Myeloid Leukaemia Cells. (2015) **Int. J. Biochem. Cell Biol.** 59, 11-20.

11. Wyszynski, R. W., Gibbs, B. F., Varani, L., Iannotta, D., Sumbayev, V. V. Interleukin-1 beta induces the expression and production of stem cell factor by epithelial cells: crucial involvement of PI-3K/mTOR pathway and HIF-1 transcription complex. (2014) *Cell. Mol. Immunol.* (in press).
12. Abooli, M., Lall, G.S., Coughlan, K., Lall, H., Gibbs, B.F., and **Sumbayev V.V.** Crucial involvement of xanthine oxidase in the intracellular signalling networks associated with human myeloid cell function. (2014) **Sci Rep.**, 4, 6307.
13. Yasinska, I. M., Gibbs, B. F., Lall G.S., and **Sumbayev V.V.** The HIF-1 transcription complex is essential for translational control of myeloid hematopoietic cell function by maintaining mTOR phosphorylation. (2014) **Cell Mol. Life Sci.**, 71, 699-710.
14. El Hachmane MF, Rees KA, Veale EL, **Sumbayev VV**, Mathie A. Enhancement of TWIK-related acid-sensitive potassium channel 3 (TASK3) two-pore domain potassium channel activity by tumor necrosis factor  $\alpha$ . (2014) **J Biol Chem** 289, 1388-1401
15. **Sumbayev, V. V.**, Gibbs, B. F. Gene silencing approaches in mast cells and primary human basophils. (2014) **Methods Mol. Biol.** 1192, 185-191.
16. **Sumbayev, V. V.**, Yasinska, I. M., Garcia, C. P., Gilliland, D., Lall, G. S., Gibbs, B. F., Bonsall, D. R., Varani, L., Rossi, F., and Calzolari, L. Gold Nanoparticles Downregulate Interleukin-1 $\beta$ -Induced Pro-Inflammatory Responses. (2013) **Small**, 9, 472-477.
17. Falkencrone S, Poulsen LK, Bindslev-Jensen C, Woetmann A, Odum N, Poulsen BC, Blom L, Jensen BM, Gibbs BF, Yasinska IM, **Sumbayev VV**, Skov PS. IgE-mediated basophil tumour necrosis factor alpha induces matrix metalloproteinase-9 from monocytes. (2013) **Allergy** 68: 614-620.
18. Gibbs, B. F., Yasinska, I. M., Calzolari, L., Gilliland, D., and **Sumbayev, V.V.** Highly Specific Targeting of Human Leukocytes Using Gold Nanoparticle-Based Biologically Active Conjugates. (2014) **J. Biomed. Nanotechnol.**, 10, 1259-1266.
19. Pascual Garcia, C., **Sumbayev, V. V.**, Gilliland, D., Yasinska, I. M., Gibbs, B. F., Mehn, D., Calzolari, L., Rossi, F. Microscopic analysis of the interaction of gold nanoparticles with cells of the innate immune system. (2013) **Sci. Rep.** 3, 1326 (**joint first author**).
20. Gibbs, B. F., Yasinska, I. M., Pchejetski, D., Wyszynski, R. W., and **Sumbayev, V. V.** Differential control of hypoxia-inducible factor 1 activity during pro-inflammatory reactions of human hematopoietic cells of myeloid lineage (2012) **Int. J. Biochem. Cell Biol.** 44, 1739-1749.
21. **Sumbayev, V. V.**, Yasinska, I. M., Oniku, A. E., Streatfield, C. L., Gibbs, B. F. Involvement of Hypoxia-Inducible Factor-1 in the Inflammatory Responses of Human LAD2 Mast Cells and Basophils. (2012) **PLoS One**. 7(3): e34259.
22. Gibbs, B. F., Yasinska, I. M., Oniku, A. E., and **Sumbayev, V. V.** Effects of Stem Cell Factor on Hypoxia-Inducible Factor 1 alpha Accumulation in Human Acute Myeloid Leukaemia and LAD2 Mast Cells. (2011) **PLoS One**. 6 (7) e 0022502.

23. Nicholas, S. A., Coughlan, K., Yasinska, I., Lall, G., Gibbs, B. F., Calzolari, L. and **Sumbayev, V. V.** Dysfunctional mitochondria contain endogenous high-affinity human Toll-like receptor 4 (TLR4) ligands and induce TLR4-mediated inflammatory reactions. (2011) **Int. J. Biochem. Cell Biol.** 43, 674-681.
24. Nicholas, S. A., Bubnov, V. V., Yasinska, I. M. and Sumbayev, V. V. Involvement of xanthine oxidase and hypoxia-inducible factor 1 in Toll-like receptor 7/8-mediated activation of caspase 1 and interleukin-1beta. (2011) **Cell Mol. Life Sci.** 68, 151-158.
25. Pchejetski, D. Nunes, J., Coughlan, K., Lall, H., Pitson, S. M., Waxman, J. and **Sumbayev, V. V.** The involvement of sphingosine kinase 1 in LPS-induced Toll-like receptor 4-mediated accumulation of HIF-1alpha protein, activation of ASK1 and production of the pro-inflammatory cytokine IL-6. (2010) *Immunol. Cell. Biol.* 89, 268-274.
26. Nicholas, S. A., Oniku, A., and **Sumbayev, V. V.** Myeloid cell death associated with Toll-like receptor 7/8-mediated inflammatory response. Implication of ASK1, HIF-1alpha, IL-1beta and TNF-alpha. (2010) *Mol. Immunol.* 48, 240-247.
27. **Sumbayev, V. V.**, Nicholas, S. A. Hypoxia-inducible factor 1 as one of the "signalling drivers" of the Toll-like receptor-dependent and allergic inflammation. (2010) *Arch. Immunol. Ther. Exp.* - Invited review 58, 287-294.
28. Nicholas, S. A and **Sumbayev, V. V.** The role of redox-dependent mechanisms in the down-regulation of ligand-induced Toll-like receptor 7, 8 and 4-mediated HIF-1alpha prolyl hydroxylation. (2010) **Immunol. Cell. Biol.** 88, 180-186.
29. **Sumbayev, V. V.**, Nicholas, S. A., Streatfield, C. L., Gibbs, B. F. Involvement of Hypoxia-Inducible Factor-1 in IgE-Mediated Primary Human Basophil Responses. (2009) **Eur. J. Immunol.** 39, 3511-3519.
30. Nicholas, S. A and **Sumbayev, V. V.** The involvement of hypoxia-inducible factor 1 alpha in Toll-like receptor 7/8-mediated inflammatory response. (2009) **Cell. Res.** 19, 973-983.
31. Lall H., Coughlan, K. and Sumbayev V. V. HIF-1alpha protein is an essential factor for protection of myeloid cells against LPS-induced depletion of ATP and apoptosis that supports Toll-like receptor 4-mediated production of IL-6. (2008) **Mol. Immunol.** 45, 3045-9.
32. **Sumbayev V. V.** LPS-induced Toll-like receptor 4 signalling triggers cross-talk of apoptosis signal-regulating kinase 1 (ASK1) and HIF-1alpha protein. (2008) *FEBS Lett.* 582, 319-326.
33. **Sumbayev, V. V.**, Jensen, J. K., Hansen, J. A., Andreasen, P. A. Novel modes of oestrogen receptor agonism and antagonism by hydroxylated and chlorinated biphenyls, revealed by conformation-specific peptide recognition patterns. (2008) **Mol. Cell. Endocrinol.** 287, 30-39.
34. **Sumbayev V. V.** PI3 kinase and direct S-nitrosation are involved in down-regulation of apoptosis signal-regulating kinase 1 during LPS-induced Toll-like receptor 4 signalling. (2008) *Immunol. Lett.* 115, 126-130.

35. **Sumbayev, V. V.**, Yasinska, I. M. Protein S-nitrosation in signal transduction. Assays for specific qualitative and quantitative analysis. Invited contribution (2008) **Meth. Enzymol.** 440, 209-219.
36. Hansen, J. A., **Sumbayev, V. V.**, Gothelf, K. V. (2007) An electrochemical sensor based on the human estrogen receptor ligand binding domain. (2007) **NANO Lett.** 7, 2831-2834.
37. **Sumbayev, V. V.**, Yasinska, I. M. Mechanisms of hypoxic signal transduction regulated by reactive nitrogen species (2007) **Scand. J. Immunol.** 65, 399-406.
38. **Sumbayev, V. V.**, Yasinska, I. M. Role of MAP kinase-dependent apoptotic pathway in innate immune responses and viral infection (2006) **Scand. J. Immunol.** 63, 391-400.
39. **Sumbayev, V. V.**, Yasinska, I. M. Peroxynitrite as an alternative donor of oxygen in HIF-1 $\alpha$  proline hydroxylation under low oxygen availability (2006) **Free Radic. Res.** 40, 631-635.
40. Kozhukhar, A. V., Yasinska, I. M., and **Sumbayev, V. V.** Nitric oxide inhibits HIF-1 $\alpha$  protein accumulation under hypoxic conditions: implication of 2-oxoglutarate and iron (2006) **Biochimie** 88, 411-418.
41. Yasinska, I. M., **Sumbayev, V. V.** (2006) Universal and complex enzymology of cytochrome P450 aromatase. Review article. **Probl. Endocrinol.**, 61, 39–46.
42. Mukhopadhyay, R., **Sumbayev, V. V.**, Lorentzen, M., Kjems, J., Andreasen, P.A., Besenbacher, F. Cantilever sensor for nanomechanical detection of specific protein conformations (2005) **NANO Lett.** 5, 2385-2388.
43. **Sumbayev, V. V.**, Yasinska, I. M. Regulation of MAP Kinase Dependent Apoptotic Pathway: Implication of Reactive Oxygen and Nitrogen Species. *Review article* (2005) **Arch. Biochem. Biophys.** 436, 406-412.
44. **Sumbayev, V. V.**, Bonefeld-Jørgensen, E. C., Wind, T., Andreasen, P. A. A novel pesticide-induced conformational state of the oestrogen receptor ligand-binding domain, detected by conformation-specific peptide binding. (2005) **FEBS Lett.** 579, 541-548.
45. Yasinska, I. M., Kozhukhar, A. V. and **Sumbayev V. V.** (2003) S-nitrosation of thioredoxin in the nitrogen monoxide/superoxide system activates apoptosis signal-regulating kinase 1 (2004) **Arch. Biochem. Biophys.** 428, 198-203.
46. Yasinska, I. M., and **Sumbayev V. V.** (2003) S-nitrosation of Cys-800 of HIF-1 $\alpha$  protein activates its interaction with p300 and stimulates its transcriptional activity. **FEBS Lett.** 549, P. 105-109.
47. **Sumbayev, V. V.** (2003) S-nitrosylation of thioredoxin mediates activation of apoptosis signal-regulating kinase 1. **Arch. Biochem. Biophys.** 415, 133-136.
48. Shatrov, V. A., **Sumbayev, V. V.**, Zhou, J., Bruene, B. (2003) Oxidized low density lipoprotein triggers HIF-1 $\alpha$  protein via redox-dependent mechanism. **Blood**, 101, 4847-4849.
49. **Sumbayev, V. V.**, Budde, A., Zhou, J., Bruene, B. (2003) HIF-1 $\alpha$  protein as a target for S-nitrosation. **FEBS Lett.**, 535, 106-112.

50. **Sumbayev, V. V.**, Sandau, K. B., Bruene, B. (2002) Mesangial cells but not hepatocytes are protected against NO/O<sub>2</sub><sup>-</sup> cogeneration: mechanistic considerations. **Eur. J. Pharmacol.** 444, 1–11.
51. **Sumbayev, V. V.**, Yasinska I. M. (2002) Xanthine oxidase, nitric oxide synthase, and protein kinase c activities as well as cytochrome P450 1A1, 1A2 and 1B1 quantities in the rat liver under conditios of CoCl<sub>2</sub> induced oxidative tress. **Ukr. Biochim. Zh.** 74, No 6, 117-120.
52. **Sumbayev, V. V.**, Yasinska I. M. (2001) Activity of the glutathione antioxidant system and cytochrome P-450 in rat liver under induction and inhibition of xanthine oxidase **Ukr. Biochim. Zh.**73, No 1, 78 - 82.
53. **Sumbayev, V. V.** (2001) Genistein effect on xanthine oxidase activity. **Ukr. Biochim. Zh.** 73, No 4, 39-43.
54. **Sumbayev, V. V.**, Yasinska I. M. (2001) Xanthine oxidase, nitric oxide synthase and aromatase activities as well as cytochrome P450 1A1, 1A2 and 1B1 level in rat organism under conditions of parental genistein injections. **Biopolymers and Cell**, 17, 396-400.
55. **Sumbayev, V. V.** (2001) The activity of apoptosis signal regulating kinase, poly-(ADP-ribose)-polymerase and intranucleosomal DNA fragmentation in the case of CoCl<sub>2</sub> mediated oxidative stress. **Bull. Exper. Biol. Med.**, 131, 119 – 120.
56. **Sumbayev, V. V.**, Karpova, O. V., Studinskaya, T. B. (2001) Nitric oxide synthase, poly-(ADP-ribose)-polymerase, protein kinase C and apoptosis signal-regulating kinase 1 (ASK 1), activities as well as internucleosomal dna fragmentation in the HEP-2 cells under conditions of Mo-dependent xanthine oxidase activation. **Ukr. Biochim. Zh.** 73, No 6, 119-122.
57. **Sumbayev, V. V.**, Yasinska I. M. (2001) Poly - (ADP-ribose)-polymerase and protein kinase C activities as well as intranucleosomal DNA fragmentation in the HEP-2 cells (human larynx cancer cells) treated by human  $\gamma$ -interferon in the presence and absence of allopurinol. **Exp. Oncol.** 22, 294-296.
58. **Sumbayev, V. V.** (2000) Decomposition of 4,9 - dichlorodibenzodioxin in the rat liver. **Ukr. Biochim. Zh.** 72, No 2, 91 - 93.
59. **Sumbayev, V. V.**, (2000) The in vitro effects of corticosteroids, DDT and 4,9-dichlorodibenzodioxin on rat liver xanthine oxidase activity. The interactions between xanthine oxidase and cytochrome P 450 in rat liver in vivo. **Biochemistry (M)** 65, 972 – 975.
60. **Sumbayev, V. V.**, Yasinska I. M. (2000) Effect of DDT on cortisol interactions with rat brain glucocorticoid binding proteins. **Ukr. Biochim. Zh.** 72, No 3, 114 – 117.
61. **Sumbayev V.V.** (1999) The effects of some antioxidants and caffeine to the rat liver xanthine dehydrogenase activity. **Ukr. Biochim. Zh.** 71, No 3, 39 - 43.
62. **Sumbayev, V.V.**, Rozanov A.Ya. (1998) The investigation of regulation of xanthine oxidase from rat liver by reductors-antioxidants in vitro. **Ukr. Biochim. Zh.** 70, No 6, 47-52.
63. **Sumbayev V.V.**, Rozanov A.Ya. (1997) Caffeine effect on xanthine oxidase activity. **Ukr. Biochim. Zh.** 69, No 5-6, 196-200.



64. **Sumbayev, V.V.**, Yasinska, I. M. (1997) The effect of ascorbic acid on the formation of uric acid. **Ukr. Biochim. Zh.** 69, No 2, 116-120.