

June, 2004

CURRICULUM VITAE

Name: Sergey V. Ivanov

Date and Place of Birth: August 28, 1961; Russia.

Citizenship: Russia.

Marital Status: Married.

USA Visa Status: Permanent resident.

Education:

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| 1992 | Ph.D., Genetics, Institute of Cytology and Genetics, Novosibirsk, Russia. Thesis title: Structure and Evolution of Bsp-repeats in Canidae Genomes |
| 1983 | B.S., Biochemistry, Novosibirsk State University, Novosibirsk, Russia. |

Brief Chronology of Employment:

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| 1996-present | Scientist II, Basic Research Program, NCI-Frederick Cancer Research and Development Center, Frederick, MD |
| 1993-1996 | Postdoctoral Fellow, Intramural Research Support Program, NCI-Frederick Cancer Research and Development Center, Frederick, MD |
| 1983-1993 | Graduate Student, Postgraduate Student, Research Fellow, Institute of Cytology and Genetics Novosibirsk, Russia |

Awards:

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| 1998 | SAIC Publication Prize for Biochemistry and Molecular Biology |
| 1998 | SAIC Presidential Stock Option Award for Scientific Achievements |
| 1994 | International Soros Foundation Award for Russian Scientists |
| 1992 | Soros Foundation Award for International Collaboration |

Graduate Students and Scholars Supervision:

- 1999-2000 Supervision of a postgraduate student, NCI- Frederick, MD, USA
- 1992- 1993 Supervision of two junior research fellows, students' scientific projects evaluation, and lecturing, the Novosibirsk State University and Institute of Cytology and Genetics, Novosibirsk
- 1990-1992 Supervision of three graduate students, the Novosibirsk State University

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Recent Meetings and Symposia:

The IIIrd Annual Meeting of Russian Biochemical Society, St.Petersburg, Russia, 2002.

VHL Care in the New Millenium, 2000, Rochester, Minnesota, USA, invited speaker.

Genetic and Functional Consequences of Cell Cycle Alteration in Cancer, 1999, San Diego, California, USA.

International Conference on Gene Therapy and Molecular Biology & Medicine, 1999, Redwood City, California, USA, invited speaker.

89-th Annual Meeting of American Association for Cancer Research, 1998, New Orleans, LA, USA, speaker.

Publications:

1. Potapov, V. A., Ivanov, S. V., Graphodatsky, A. S., Kudryashova, N. V., Romaschenko, A. G. Comparative study of highly repeated DNA sequences of fox and arctic fox. *Genetika* 23: 1104-1112, 1987.
2. Ivanov, S. V., Potapov, V. A., Sosnovtsev, S. V., Romaschenko, A. G.

- Organization of Bsp-repeats in fox genome. *Genetika* 25: 809-818, 1989.
3. Lushnikova, T. P., Grafodatskii, A. S., Ivanov, S. V., Romashchenko, A. G., Ternovskii, L. V., Ternovskaia, I. G., and Radzhabli, S. I. EcoRI- and BamHI-families of repeated sequences in mustelids. *Genetika* 25: 1449-1461, 1989.
 4. Ivanov, S. V., Potapov, V. A., Kalachikov S.M. Blot-hybridization with DNA on naylon-66 membranes. In: Methods of molecular genetics and genetic engeniering.Nauka (Novosibirsk), 1990 (In Russian).
 5. Potapov, V. A., Solovjev, A. G., Romashchenko, A. G., Sosnovtsev, S. V., Ivanov, S. V. The structure and evolutional features of complex tandemly arranged Bsp-repeats in fox genome. I. Structure and internal organization of the BAMHI-dimer. *Molec. Biol. (Moscow)* 24: 1649-1665, 1990.
 6. Ivanov, S. V., Potapov, V. A., Filipenko, E. A., Romaschenko, A. G. Species-specific peculiarities in restriction patterns of canids' Bsp-repeats. *Genetika* 27: 964-972, 1991.
 7. Ivanov, S. V., Potapov, V. A., Philipenko, E. A., Romaschenko, A. G. Geterogenity of the Canidae Bsp-repeats family: discovery of the EcoRI-subfamily. *Genetika* 27: 973-982, 1991.
 8. Potapov, V. A., Solovjev, A. G., Romashchenko, A. G., Sosnovtsev, S. V., Ivanov, S. V. The structure and evolutional features of complex tandemly arranged Bsp-repeats in fox genome. II. Tissue-specific and recombinational sites in the BamHI-dimer. *Molec. Biol. (Moscow)* 25: 116-132, 1991.
 9. Sosnovtsev, S.V., Ivanov, S.V., Solojev, A.G., Potapov, V.A., and Romashchenko A.G. Molecular evolution of Bsp-repeats: formation of subrepeats and monomers preceded the divergence of four species of Canidae. *Molec. Biol. (Moscow)* 27: 992-1013, 1993.
 10. Hegai I.I., Ivanov S.V. Mapping of the antidiuretic hormone gene in the rat Rattus norvegicus. *Genetika* 30: 1560-1562, 1994.
 11. Kalinina T.S., Sartakov S.G., Ivanov S.V. Species-specific content of the Bsp-repeats superfamily in Canidae genomes. *Genetika* 30:63, 1994.
 12. Chelomina G.N., Ivanov S.V., Kryukov A.P. Peculiarities of RFLP of highly repetitive DNA in crow genomes. *Genetika* 31:174-179, 1995.
 13. Ivanov, S.V., and Modi, W.S. Molecular characterization of the complex sex-chromosome heterochromatin in DNA families of the rodent *Microtus chrotorrhinus*. *Cytogenet. Cell Genet.* 75: 49-56, 1996.

14. Carrington, M., Kissner, T., Gerrard, B., Ivanov, S., O'Brien, S. J., and Dean, M. Novel alleles of the chemokine receptor gene CCR5. *Amer. J. Hum. Genet.* 61:1261-1267, 1997.
15. Yudin, N. S., Vinogradov, S. V., Potapova, T. A., Naykova, T. M., Sitnikova, V. V., Kulikov, I. V., Khasnulin, V. I., Kunchuk, C., Vloshinskii, P. E., Ivanov, S. V., Kobzev, V. F., Romaschenko, A. G., and Voevoda, M. I. Distribution of the CCR5 gene 32-base pair deletion across Russian part of Eurasia. *Hum. Genet.* 102:695-698, 1998.
16. Ivanova A., Bonaduce M., Ivanov S., Klar A. The chromo and SET domains of the Clr4 protein are essential for silencing in fission yeast. *Nature Genet.* 19:192-195, 1998.
17. Wei M.-H., Karavanova I., Ivanov S. V., Popescu N.C., Keck C.L., Lerman M.I. In silico initiated cloning and molecular characterization of a novel human member of the L1 gene family of neural cell adhesion molecules. *Hum. Genet.*, 103:355-364, 1998.
18. Ivanov S.V. , Kuzmin I., Wei M.-H., Pak S., Geil L., Johnson B. E., Stanbridge E. J., Lerman M. I. Down-regulation of transmembrane carbonic anhydrases in renal cell carcinoma cell lines by wild type VHL transgenes. *Proc. Natl Acad. of Sci.*, 95:12596-12601, 1998.
19. Angeloni D., Danilkovitch A., Ivanov S.V., Breathnach R., Johnson B. E., Leonard E. J., Lerman M. I. Gene structure of the human receptor tyrosine kinase Ron and mutation analysis in lung cancer samples. *Genes, Chromosomes, and Cancer* 29:147-56, 2000.
20. Plisov S.Y*, Ivanov S.V*, Yoshino K., Dove L.F., Plisova T.M., Higinbotham K.G., Karavanova I., Lerman M., Perantoni A.O. Mesenchymal-epithelial transition in the developing metanephric kidney: Gene expression study by differential display. *Genesis* 27: 22-31, 2000.
21. Lerman M.I., John D. Minna, ... Ivanov S.V..., et al. The 630-kb Lung Cancer Homozygous Deletion Region on Human Chromosome 3p21.3: Identification and Evaluation of the Resident Candidate Tumor Suppressor Genes. *Cancer Research* 60: 6116-6133, 2000.
22. Ivanov S.V., Liao S.Y., Ivanova A.V., Danilkovitch-Miagkova A, Tarasova N., Weirich G., Merrill M.J., Proescholdt M.A., Oldfield E.H., Lee J., Zavada J., Waheed A., Sly W., Lerman M.I., Stanbridge E.J. Expression of cell surface transmembrane carbonic anhydrases in human cancer. *The American Journal of Pathology* 158: 905-919, 2001.
23. Ivanova A.V., Ivanov S.V., Danilkovitch-Miagkova A., Lerman M.I. Regulation of STRA13 by the von Hippel-Lindau tumor suppressor protein, hypoxia, and the UBC9/ubiquitin proteasome degradation pathway. *J. Biol. Chem.* 276: 15306-15, 2001.

24. Ivanova A.I. and Ivanov S.V. Differential display analysis of gene expression in yeast. Review. *Cellular and Molecular Life Sciences* 59:1241-1245, 2002.
25. Shu-Yuan Liao, Sergey Ivanov, Alla Ivanova, Sikha Ghosh, Mary A. Cote, Kelly Keefe, Miguel Coca-Prados , Eric J. Stanbridge, and Michael I. Lerman. Expression of Cell-Surface Transmembrane Carbonic Anhydrase Genes CA9 and CA12 in the Human Eye: Overexpression of CA12 in Glaucoma. *J. Med. Genet.* 40: 257-261, 2003.
26. Modi W.S., Ivanov S., and Gallagher D. S. Concerted Evolution and Higher-Order Repeat Structure of the 1.709 (Satellite IV) Family in Bovids., *J. Mol. Evol.* 58:460–465, 2004.
27. Ivanov S.V., Lino Tessarollo L., Jerrold M. Ward J.M., et al. Cerebellar ataxia, seizures, premature death, and cardiac abnormalities in mice with targeted disruption of the Cacna2d2 gene. *The American Journal of Pathology*, 2004, in press.
28. Ivanova A.V., Ivanov S.V., Zhang X., Ivanov V.N., and Lerman M.I. STRA13 Interacts with STAT3 and Modulates Transcription of STAT3-dependent Targets pVHL. *J. Mol. Biol.* 2004, in press.
29. Ivanov S.V. and Ivanova A.V. Silencing in yeast: identification of CLR4 targets. In: *Differential Display Methods and Protocols*, 2nd edition. Editors: P.Liang, J.D. Meade, and A.B. Pardee, 2004, in press.

* - shared first authorship.

Major Scientific Accomplishments:

- 1990-1996 Discovery and characterization of novel heterochromatin-associated repeated DNA families typical for Canidae species and Microtus chrotorrhinus
- 1996 - Contributed to the analysis of Δ32 and other CCR5 mutations distribution in various human populations
- 1998 - Discovery of novel targets of the pVHL tumor suppressor via application of a modified RNA Differential Display technology
- 1999-2001 - Functional evaluation of potential cancer-associated therapeutic targets CAIX, CAXII, and STRA13

- 2001- 2004 - Functional analysis of tumor suppressor gene candidates from the human chromosomal region 3p21.3 (CACNA2D2, PL6, FUS1, and FUS2) by targeted gene disruption in mouse

Methods:

- Mouse gene knock-out technologies
- Expression array analysis
- RNA Differential Display
- *In silico* analysis of gene structure, expression, and gene products
- ISH hybridization
- Northern, Southern, and Western-blot analyses, conventional methods f molecular biology