ALEXANDRA SMIRNOVA

CURRICULUM VITAE

PERSONAL DATA

Sex: Female
Birth: June 21 1970, St. Petersburg, Russia
Nationality: Russian
Citizenship: Russian

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PRESENT ADRESS:

Laboratory of Cardiovascular Pathology
Centre for Inherited Cardiovascular Diseases
Fondazione IRCCS Policlinico San Matteo
Camillo Golgi Avenue, 19
27100 Pavia, Italy

EDUCATION:

2000	Ph. D. in Biology St–Petersburg State University, St.-Petersburg, Russia
1992	M.Sc. in Genetics (con lode) St–Petersburg State University, St.-Petersburg, Russia

RESEARCH EXPERIENCE:

01/01/2013 – present	Postdoctoral fellow, Laboratory of Cardiovascular Pathology (Responsible Prof. Eloisa Arbustini), Centre for Inherited Cardiovascular Diseases, Fondazione IRCCS Policlinico San Matteo
01/01/2011 – 31/12/2012	Postdoctoral fellow, Laboratory of Molecular and Cellular Biology (Responsible Prof. Elena Giulotto), Department of Biology and Biotechnologies, University of Pavia
01/08/2010 - 31/12/2010	Postdoctoral fellow, Laboratory of Radiobiology and Radiation Biophysics (Responsible Prof. A. Ottolenghi), Department of the Theoretical and Nuclear Physics, University of Pavia
2006 – 01/08/2010	Postdoctoral fellow, Laboratory of Molecular and Cellular Biology (Responsible Prof. Elena Giulotto), Department of Biology and Biotechnologies, University of Pavia
2000 – 2006	Associate research scientist, Laboratory of Chromosomes Stability and Cell Engineering (Responsible Prof. N. Tomilin), Institute of Cytology of the Russian Academy of Sciences, St. Petersburg, Russia
1995 – 2000	Associate research scientist, Laboratory of Genetics of the Higher Nervous Activity (Responsible Prof. N. Lopatina), Pavlov' Institute of Physiology of the Russian Academy of Sciences, St. Petersburg, Russia
1992 – 1995	PhD Student, Pavlov' Institute of Physiology, Russian Academy of Sciences, St. Petersburg, Russia

TEACHING EXPERIENCES:

2009 - 2010 ***2008 - 2009*** ***2007 - 2008***	Theoretical and practical tutor for the laboratories of biomolecular methodologies for undergraduate students.

AWARDS:

2001 The diploma of the Gerontological Society of the Russian Academy of Sciences for the best work on gerontology among young scientists of Russia for 2000 year

INTERNATIONAL AND ITALIAN FELLOWSHIPS:

01/01/2011 - 31/12/2012 Postdoctoral Fellowships financed by University of Pavia and by Region Lombardy. The research work was performed in the Laboratory of Molecular and Cellular Biology (Responsible Prof. E. Giulotto), Department of Biology and Biotechnologies, University of Pavia, Italy.

01/08/2010 - 31/12/2012 Postdoctoral Fellowships financed by European Project "NOTE". The research work was performed in the Laboratory of Radiobiology and Radiation Biophysics (Responsible Prof. A. Ottolenghi), Department of the Theoretical and Nuclear Physics, University of Pavia, Italy.

01/08/2009 - 31/07/2010
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01/08/2007 - 31/07/2008 Postdoctoral Fellowships financed by University of Pavia and by Region Lombardy. The research work was performed in the Laboratory of Molecular and Cellular Biology (Responsible Prof. E. Giulotto), Department of Biology and Biotechnologies, University of Pavia, Italy.

19/06/2006 - 19/12/2006 EURATOM Grants for Cooperation with Third Countries (GTC).The research work was performed in the Laboratory of Molecular and Cellular Biology (Responsible Prof. E. Giulotto), Department of Biology and Biotechnologies, University of Pavia, Pavia, Italy

29/09/2003 - 22/12/2003 Postdoctoral Short-term Fellowship of the International Centre for Genetic Engineering and Biotechnology (ICGEB, Trieste). The research work was performed in the Laboratory of Molecular and Cellular Biology (Responsible Prof. E. Giulotto), Department of Biology and Biotechnologies, University of Pavia, Pavia, Italy

RESEARCH TECHNIQUES:

Cell culture's methods:
General cell culture methods
Stabilization of primary cell cultures
Transient and stable cell culture's transfection with plasmid vectors
Isolation of single clones and the stabilization of cell cultures
Determination of frequency and rate of gene amplification
Analysis of the cell sensitivity to gamma irradiation

Cytogenetical methods:
Preparation of chromosomes and metaphases spreads
Fluorescence In Situ Hybridization (FISH)
Immunofluorescence
Analysis of spontaneous and radiation induced chromosomal aberrations
Analysis of karyotypes

Molecular biology methods:

DNA
Extraction of the total genomic DNA from the cell cultures
Extraction of the plasmidic DNA from bacterial cultures
Agarose gel electrophoresis
Southern blot hybridization

RNA
Extraction of RNA from the cell cultures
Denaturing agarose gel electrophoresis
Northern and Slot blot hybridization

	RNA - FISH Retrotranscription and qRT-PCR
Proteins	Extraction of total proteins from the cell cultures Polyacrylamide gel electrophoresis Western blot hybridization
Other methods:	General *Drosophila melanogaster* culture methods Classical genetic analysis of *Drosophila melanogaster*
Informatic Skills:	Apple MacOS Microsoft Windows OS Microsoft Office software (Word, Excel, PowerPoint) Adobe Suite (Photoshop, Illustrator)
Languages:	Russian, Italian, English

PUBLICATIONS:

Smirnova A., Gamba R., Khoriauli l., Vitelli V., Nergadze S.G., Giulotto E. TERRA expression levels do not correlate with telomere length and radiation sensitivity in human cell lines. Frontiers in Oncology, 2013. In preparation.

Vidale P., Magnani E., Nergadze S.G., Santagostino M., Cristofari G., **Smirnova A**., Mondello C., Giulotto E. The catalytic and the RNA subunits of human telomerase are required to immortalize equid primary fibroblasts. 2012. Chromosoma. 121(5): 475-488.

Ruiz-Herrera A., **Smirnova A**., Khoriauli L., Nergadze S.G., Mondello C., Giulotto E. Gene amplification in human cells knocked down for RAD54. 2011. Genome Integrity. 2:5. doi:10.1186/2041-9414-2-5.

Mondello C., **Smirnova A**., Giulotto E. Gene amplification, radiation sensitivity and DNA double strand breaks. 2010. Mutation Research Reviews. V. 704. P. 29-37.

Salzano A., Kochiashvili N., Nergadze S.G., Khoriauli L., **Smirnova A**., Ruiz-Herrera A., Mondello C., Giulotto E. Enhanced gene amplification in human cells knocked down for DNA-PKcs. 2009. DNA Repair. V. 8. P. 19-28.

Svetlova M.P., Solovjeva L.V., **Smirnova A.N**., Tomilin N.V. Long interstitial (TTAGGG)n arrays do not colocalize with repressive chromatin modifications in Chinese hamster cells. 2007. Cell Biology International. V.31. P. 308-315.

Kropotov A., Serikov V., Suh J., **Smirnova A**., Bashkirov V., Zhivotovsky B., Tomilin N. Constitutive expression of the human peroxiredoxin V gene contributes to protection of the genome from oxidative DNA lesions and to suppression of transcription of noncoding DNA. 2006. FEBS Journal. V. 273. P. 2607-2617.

Smirnova A.N., Krutilina R.I., Tomilin N.V. Dynamic binding of the telomeric human protein TRF1 to intrachromosomal blocks (TTAGGG)n in living Chinese hamster cells depends on transcription. 2005. Molecular Biology. V. 39, N. 6. P. 857-861.

Krutilina R.I., **Smirnova A.N**., Mudrak O.S., Pleskach N.M., Svetlova M.P., Oei S.-L., Yau P.M., Bradbury E.M., Zalensky A.O., Tomilin N.V. Protection of internal (TTAGGG)n repeats in Chinese hamster cells by telomeric protein TRF1. 2003. Oncogene. V.22. P. 6690-6698.

Nazarov I.B., **Smirnova A.N**., Krutilina R.I., Svetlova M.P., Solovjeva L.V., Nikiforov A.A., Oei S.L., Zalenskaya I.A., Yau P.M., Bradbury E.M., Tomilin N.V. Dephosphorylation of histone g-H2AX during repair of DNA double-strand breaks in mammalian cells and its inhibition by calyculin A. 2003. Radiation Research. V.160, N. 3. P. 309-317.

Krutilina R.I., **Smirnova A.N**., Mudrak O.S., Svetlova M.P., Pleskach N.M., Oei S.-L., Bradbury E.M., Zalensky A.O., Tomilin N.V. Recognition of internal (TTAGGG)n repeats by telomeric protein TRF1 and its role in maintenance of chromosomal stability in Chinese hamster cells. 2003. Cytology. V. 45, N. 12. P. 1211-1220. (Russian)

Smirnova A.N., Vershinina E.A., Myl'nikov S.V. Investigation of the impact of three large chromosomes of Drosophila in determination of the mortality dynamics and intensity of lipid peroxidation. 2000. Advances in Gerontology. V. 4, P. 50-54. (Russian)

Myl'nikov S.V., **Smirnova A.N**. Evaluation of the heritability of basic parameters of aging in Drosophila melanogaster. 1997. Genetika. V. 33, N. 5. P. 616-622. (Russian)

Myl'nikov S.V., **Smirnova A.N**., Oparina T.I., Bliudzin Y.A., Kaidanov L.Z. The intensity of the peroxidation of lipids and their fatty acid composition in Drosophila melanogaster strains differing in their adaptive value. 1997. Zh. Evol. Biokhim. Fiziol. V. 33, N. 1. P. 12-16. (Russian)

Smirnova A.N., Myl'nikov S.V., Oparina T.I. The relationship between lipid peroxidation and life span in Drosophila melanogaster. 1994. Zh. Evol. Biokhim. Fiziol. V. 30, N. 3. P. 321-331. (Russian)

Myl'nikov S.V., **Smirnova A.N**., Oparina T.I. A comparative genetic analysis of interlinear differences in intensity of lipid peroxidation and life span in Drosophila melanogaster. Inbred lines and hybrids. 1994. Genetika. V. 30, N. 11. P. 1466-1470. (Russian)

Myl'nikov S.V., **Smirnova A.N**., Bliudzin Y.A., Oparina T.I. About relationships between life span, intensity of lipid peroxidation and fatty acid composition of lipids in Drosophila melanogaster. 1994. The Bulletin of St.-Petersburg State University. V. 3 (1) P. 100-104. (Russian)

Myl'nikov S.V., **Smirnova A.N**. The dynamics of mortality in inbred selected strains and their hybrids in Drosophila melanogaster. 1994. Ontogenez. V. 25, N. 4. P. 7-12. (Russian)

MEETING ABSTRACTS:

Santagostino M., Nergadze S.G., Klipstein O, **Smirnova A**, Battola A., Giulotto E. Telomeric repeats far from the end: transcription and putative function as splicing regulators. XI National Congress of Biotechnology, June 2012, Varese, Italy.

Lupotto M., Vidale P., **Smirnova A**., Nergadze S.G., Chiodi I, Santagostino M., Mondello C., Giulotto E. Telomerase activation in ALT cells. The 36th FEBS Congress 'Biochemistry for Tomorrow's Medicine', June 2011,Torino, Italy.

Santagostino M., Nergadze S.G., Khoriauli l., Vitelli V., **Smirnova A**., Vidale P., Lupotto M., Giulotto E. New roles of telomeres and telomerase. In: Dalla Scienza dei Materiali alla Biomedecina moleculare. November 2009, Pavia, Italy.

Smirnova A. Gene amplification in human and rodent cell lines defective in the BRCA2 gene. In: Dalla Scienza dei Materiali alla Biomedecina moleculare. 2008, Pavia, Italy.

Giulotto E., Mondello C., Khoriauli L., Salzano A., **Smirnova A**. Identification of functions involved in gene amplification. March 2007. European project RiscRad, 3 Annual Meeting, Malta.

Tomilin N.V., Krutilina R.I., **Smirnova A.N**., Oei S., Bradbury M. Sequence-specific control of stability of internal (TTAGGG)n repeats in mammalian cells. The 15th International Chromosome Conference. September 2004, Brunel University, London, UK.

Tomilin N., Zalensky A., Krutilina R., **Smirnova A**., Zalenskaya I., Yau P., Bradbury E. M. Association of telomeric protein TRF1 with interstitial (TTAGGG)n sequences in Chinese hamster cells. Cold Spring Harbor Laboratory Symposium "Telomeres and Telomerase". 2001, Cold Spring Harbor, NY, USA.

Contacts for References:

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