

## **CURRICULUM VITAE**

### **DR. TAMARA S. AZARASHVILI**

ADDRESS: Institute of Theoretical and Experimental Biophysics Russian Academy of Science, 142292, Pushchino City, Moscow region, Russia

PHONE: (095)9239668 (ext 267)

E-mail: [tazarash@rambler.ru](mailto:tazarash@rambler.ru)

DATE AND PLACE OF BIRTH: 03.29.1942, Samara region, Russia

MARTUAL STATUS: married, 2 children

### **EDUCATION AND DEGREES:**

1962-1967, M.Sc. in Biochemistry from the Biological Department of Moscow Lomonosov's State University.

1981, Ph.D. in Biochemistry from the Institute of Biological Physics, Pushchino.

### **POSITION HELD:**

1967-1970 - Graduated Student of the Institute of Biological Physics of Academy of Science, USSR

1970-1991 - Junior Scientist, Institute of Biological Physics

1991-present - Senior Scientist of the Institute of Theoretical and Experimental Biophysics, RAS.

2005 - Leading scientist of the Institute of Theoretical and Experimental Biophysics, RAS.

**2014** - Leading scientist in Lab of Prof John Lemasters (South Carolina) in the Institute of Theoretical and Experimental Biophysics, RAS.

**5** magister dissertations and **4 Ph** dissertations have been made under my supervision.

### **RESEARCH INTERESTS:**

Processes of transformation of energy in mitochondria (liver, brain, hepatoma, astrocyte), permeability transition pore, membrane permeability, lipid raft, PBR/TSPO, connexins, channels, myelin proteins, Ca-transporting system of mitochondria, ATP synthase/hydrolase complex, phosphorylation/dephosphorylation of mitochondrial proteins, apoptosis, aging

### **VISITOR-SCIENTIST:**

**1994**, Dr., Prof. Douglas Pfeiffer, Columbus University, Columbus, Ohio, US.

**1997-2002**, Dr. Prof. Nils-Erik Saris, Helsinki University, Helsinki, Finland.

**2000, 2002**- Dr J Stennacre, Gif-Sur-Yvette, Intitute of Molecular Neurobiology, France

**2002-2010** Dr. Prof., Georg Rieser, Instit of Neurobiochemistry, Magdeburg, Germany.

**2004** – HACH ETS Business Unit, Elkhart, Indiana, USA

**2006**-HACH ETS Business Unit, Elkhart, Indiana, USA

**2006**- DBC Dr Irina Mojoul, Royal Holloway University of London, UK

### **PUBLICATONS: (FROM 60)**

**1. Azarashvili T**, Baburina Y, Grachev D, Krestinina O, Papadopoulos V, Lemasters JJ, Odinkova I, Reiser G

Carbenoxolone induces permeability transition pore opening in rat mitochondria via the translocator protein TSPO and connexin43. Arch Biochem Biophys. 2014, 15;558:87-94.

2. Krestinina O, **Azarashvili T**, Baburina Y, Galvita A, Grachev D, Stricker R, Reiser G "In aging, the vulnerability of rat brain mitochondria is enhanced due to reduced level of 2',3'-cyclic nucleotide-3'-phosphodiesterase (CNP) and subsequently increased permeability transition in brain mitochondria in old animals." *Neurochem Int.* 2014, 30, 80C:41-50.
3. Baburina YL, Gordeeva AE, Moshkov DA, Krestinina OV, Azarashvili AA, Odinkova IV, **Azarashvili TS** "Interaction of myelin basic protein and 2',3'-cyclic nucleotide phosphodiesterase with mitochondria." *Biochemistry (Mosc).* 2014, 79(6), :555-65.
4. **Azarashvili T**, Krestinina O, Galvita A, Grachev D, Baburina Y, Stricker R, Reiser G. Identification of phosphorylated form of 2', 3'-cyclic nucleotide 3'-phosphodiesterase (CNPase) as 46 kDa phosphoprotein in brain non-synaptic mitochondria overloaded by calcium. *J Bioenerg Biomembr.* 2014 46(2):135-45
5. **Azarashvili T**, Odinkova I, Bakunts A, Ternovsky V, Krestinina O, Tyynelä J, Saris NE Potential role of subunit c of F<sub>0</sub>F<sub>1</sub>-ATPase and subunit c of storage body in the mitochondrial permeability transition. Effect of the phosphorylation status of subunit c on pore opening. *Cell Calcium.* 2014, 55(2)
6. **Azarashvili T**, Baburina Y, Grachev D, Krestinina O, Evtodienko Y, Stricker R, Reiser G. Calcium-induced permeability transition in rat brain mitochondria is promoted by carbenoxolone through targeting connexin43. *Am J Physiol Cell Physiol.* 2011, 300(3):C707-20
7. **Azarashvili T**, Stricker R, Reiser G. The mitochondria permeability transition pore complex in the brain with interacting proteins - promising targets for protection in neurodegenerative diseases. *Biol Chem.* 2010, 391(6):619-29, Review.
8. Krestinina OV, Grachev DE, Odinkova IV, Reiser G, Evtodienko YV, **Azarashvili TS**. Effect of peripheral benzodiazepine receptor (PBR/TSPO) ligands on opening of Ca<sup>2+</sup>-induced pore and phosphorylation of 3.5-kDa polypeptide in rat brain mitochondria *Biochemistry (Mosc).* 2009 Apr;74(4):421-9.
9. Galvita A, Grachev D, **Azarashvili T**, Baburina Y, Krestinina O, Stricker R, Reiser G The brain-specific protein, p42(IP<sub>4</sub>) (ADAP 1) is localized in mitochondria and involved in regulation of mitochondrial Ca<sup>2+</sup>. *J Neurochem.* 2009;109(6):1701-13.
10. **Azarashvili T**, Krestinina O, Galvita A, Grachev D, Baburina Y, Stricker R, Evtodienko Y, Reiser G. Ca<sup>2+</sup>-dependent permeability transition regulation in rat brain mitochondria by 2',3'-cyclic nucleotides and 2',3'-cyclic nucleotide 3'-phosphodiesterase. *Am J Physiol Cell Physiol.* 2009 Jun;296(6):
11. **Azarashvili T**, Grachev D., Krestinina O., Evtodienko Yu, Yurkov I., Papadopoulos V. and Reiser G. (2007) The Peripheral-type benzodiazepine receptor involved in control of Ca<sup>2+</sup>- induced permeability transition pore opening in rat brain mitochondria. *Cell Calcium*, **42**, 27-39
12. **T. Azarashvili**, O. Krestinina, I. Yurkov, Yu. Evtodienko and G. Reiser (2005) High affinity peripheral benzodiazepine receptor ligand, PK11195 regulates protein phosphorylation in rat brain mitochondria under control of Ca<sup>2+</sup>. *J. Neurochem.* 94, 1054-1062
13. Saris N-E, Teplova V.V, Odinkova I. V., **Azarashvili T.S.** (2004) Interference of calmidazolium with measurement of mitochondrial membrane potential using the tetraphenylphosphonium electrode or the fluorescent probe rhodamine 123. *Analytical Biochem*, 328, 109-112.
14. **T. Azarashvili**, O. Krestinina, I. Odinkova, Yu. Evtodienko, G. Reiser. Physiological Ca<sup>2+</sup> level and Ca<sup>2+</sup>-induced Permeability Transition Pore control protein phosphorylation in brain mitochondria. *Cell Calcium*, 34; p. 253-259, 20
15. **Azarashvili TS**, Tyynela J, Odinkova IV, Grigorjev PA, Baumann M, Evtodienko YV, Saris NE. Phosphorylation of a peptide related to subunit c of the F<sub>0</sub>F<sub>1</sub>-ATPase/ATP synthase and relationship to permeability transition pore opening in mitochondria. *J Bioenerg Biomembr.* 34(4): 279-84, 2002.
16. Saris N.-E. L., Krestinina O.V., **Azarashvili T.S.**, Odinkova I.V., Tyynela J., Evtodienko Yu.V. Regulation of ATP synthase by Ca<sup>2+</sup> and Mg<sup>2+</sup> dependent phosphorylation of subunit c. *Advances in Magnesium Research: Nutrition and Health*, pp. 101-106, 2001

17. Yu.V.Evtodienko, **T.S.Azarashvili**, V.V.Teplova, I.V.Odinokova, N.-E. Saris. Regulation of oxidative phosphorylation in the inner membrane of rat liver mitochondria by calcium ions. *Biochemistry (Moscow)*, 65, 42-46, 2000.
18. **T.S. Azarashvily**, J.Tynela, M.Baumann, Yu.V.Evtodienko, N-E.Saris,  $\text{Ca}^{2+}$ -modulated phosphorylation of a low molecular mass polypeptide in rat liver mitochondria: Evidence that it is identical with subunit c of  $\text{F}_0\text{F}_1$ -ATPase. *Biochim.Biophys.Res.Com.* 270, 741-744, 2000.
19. Yu.V. Evtodienko, V.V. Teplova, **T.S. Azarashvily**, N-E Saris. Mechanisms of resistance to the mitochondrial permeability transition in tumor mitochondria. *Pathophysiology*, 6: 171-178, 1999.
20. **Azarashvili TS**,Odinokova IB,Evtodienko Yu.V. "Phosphorylation of low molecular wieght peptide in rat liver mitochondria". *Biochemistry(Moscow)*.64, 668-679, 1999.