BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Vladimir Gerzanich, M.D., Ph.D.	Assistant Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Uzhgorod State University, Ushgorod, Ukraine	M.D.	1976-1981	Medicine, General Practice
Bogomoletz Institute of Physiology, Kiev, Ukraine	Ph.D.	1982-1986	Neuroscience, Medicine

1981-1982 Clinical Pathologist, Department of Pathology, Mukachiv Regional Hospital, Ukraine
1986-1990 Research Associate, Department of Physiology of Autonomic Nervous System, Bogomoletz Institute of Physiology, Kiev, Ukraine
1990-1992 Visiting Scientist, Vollum Institute, Oregon Health Sciences University, Portland, OR
1992-1998 Postdoctoral Researcher, Department of Neuroscience, University of Pennsylvania, Philadelphia, PA
1998-present Assistant Professor, Department of Neurosurgery, University of Maryland, Baltimore, MD

Selected Publications

Silinsky, E.M., Gerzanich, V. and Vanner, S.M. (1992) ATP mediates excitatory synaptic transmission in mammalian neurones. *Br. J. Pharmacol.* 106:762-763.

Silinsky, E.M. and Gerzanich, V. (1993) On the excitatory effects of ATP and its role as a neurotransmitter in coeliac neurones of the guinea pig. *J. Physiol.* (London) 464:197-212.

Anand, R., Bason, L., Saedi, M.S., Gerzanich, V., Peng, X., and Lindstrom, J. (1993) Reporter Epitopes: A novel approach to examine transmembrane topology of integral membrane proteins applied to the a1 subunit of the nicotinic acetylcholine receptor. *Biochemistry*, 32:9975-9984.

Peng, X., Katz, M., Gerzanich, V., Anand, R., and Lindstrom, J. (1994) Human _7 acetylcholine receptor: cloning of the _ 7 subunit, pharmacological properties of native receptor and _ 7 homomers expressed in *Xenopus* oocytes and electrophysiological properties of _ 7 homomers. *Mol. Pharmacol.*45(3), pp.546-554.

Gerzanich, V., Anand, R., and Lindstrom, J. (1994) Homomers of _ 8 subunits of nicotinic receptors functionally expressed in *Xenopus* oocytes exhibit similar channel but contrasting binding site properties compared to _ 7 homomers. *Mol. Pharmacol*.. 45:212-220.

Barajas-López, C., Espinosa-Luna, R., and Gerzanich, V. (1994) ATP closes a potassium and opens a cationic conductance through different receptors in neurons of guinea pig submucous plexus. *JPET*.268(3):1396-1402.

Peng, X., Gerzanich, V., Anand, R., Whiting, P., Lindstrom, J. (1994) Nicotine-induced increase in neuronal nicotinic receptors results from a decrease in the rate of receptor turnover. *Mol.Pharmacol*. 46(3) pp.523-530.

Gerzanich, V., Peng, X., Wang, F., Wells, G., Anand, R., Fletcher, S., Lindstrom, J. (1995) Comparative pharmacology of epibatidine - a potent agonist for neuronal nicotinic acetylcholine receptors. *Mol Pharmacol.* 48, 774-782.

Barajas-López, C., Huizinga, J., Collins, S., Gerzanich, V., Espinosa-Luna, R., Peres (1996) P2x-purinoreceptors of myenteric neurones from quinea-pig ileum and their unusual pharmacological properties. *Br. J. Pharmacol*. 119(8):1541-1548

Wang, F., Gerzanich, V., Wells, G., Anand, R., Peng, X., Keyser, K., and Lindstrom J.(1996) Assembly of the human neuronal nicotinic receptor _3 subunit with _2, _4, and _5 subunits. *J.Biol.Chem.* 271:17656-17665.

Gerzanich, V., Kuryatov, A., Anand, R., and Lindstrom, J.(1997) “Orphan” _6 nicotinic AChR subunit forms a functional heteromeric receptor. *Mol Pharmacol.* 51:205-212.

Peng, X., Gerzanich, V., Anand, R., Wang, F., and Lindstrom J.(1997) Chronic nicotine treatment up-regulates _3 AChRs and _7 AChRs expressed by the human neuroblastoma cell line SH-SY5Y. *Mol Pharmacol*. 51:776-784.

Olale, F., Gerzanich, V., Kuryatov, A., and Lindstrom J.(1997) Chronic nicotine exposure differentially affects the function of human _3, _4, and _7 neuronal nicotinic receptor subtypes. *J. Pharmacol. Exp. Ther*. 283(2):675-683.

Kuryatov, A., Gerzanich, V., Nelson, M., Olale, F., and Lindstrom J. (1997) Mutation causing autosomal dominant nocturnal frontal lobe epilepsy alters Ca^{++} permeability, conductance, and gating of human _4_2 nicotinic acetylcholine receptors. *J. Neurosci.* 17(23):9035-9047.

Gerzanich, V., Wang, F., and Lindstrom J. (1998) _5 subunit alters desensitization, pharmacology, Ca^{++} modulation, and Ca^{++} permeability of human neuronal _3 nicotinic receptors. *J. Pharmacol. Exp. Ther*. 286(1):311-320.

Anand, R., Nelson, M., Gerzanich, V., Wells, G., and Lindstrom J. (1998) Determinants of channel gating located in the N-terminal extracellular domain of nicotinic _7 receptor. *J. Pharmacol. Exp. Ther*. 287(2):469-79.

Meyer, E., Kuryatov, A., Gerzanich, V., Lindstrom J., and Papke R.(1998) Analysis of 4OH-GTS-21 selectivity and activity at human and rat _7 nicotinic receptors *J. Pharmacol. Exp. Ther*. 287(3):918-25.

Gerzanich V, Zhang F, West GA, Simard J.M.(2001) Chronic nicotine alters NO signaling of Ca(2+) channels in cerebral arterioles. *Circ Res.* 88(3):359-65.

Nelson ME, Wang F, Kuryatov A, Choi CH, Gerzanich V, Lindstrom J.(2001) Functional properties of human nicotinic AChRs expressed by IMR-32 neuroblastoma cells resemble those of alpha3beta4 AChRs expressed in permanently transfected HEK cells. *J Gen Physiol.* 118(5):563-82.

Gerzanich V, Ivanova S, Zhou H, Simard JM.(2003) Mislocalization of eNOS and upregulation of cerebral vascular Ca^{2+} channel activity in angiotensin-hypertension. *Hypertension*.41(5):1124-30.

Dalton S, Gerzanich V, Chen M, Dong Y, Shuba Y, Simard JM. (2003) Chlorotoxin-sensitive Ca2+-activated Cl- channel in type R2 reactive astrocytes from adult rat brain. *Glia*.42(4):325-39.

Murphy K, Gerzanich V,Zhou H, Ivanova S, Dong Y, Hoffman G, West GA, Winn HR, Simard JM. (2003) Adenosine A2a recptor down-regulates cerebral smooth muscle L-type Ca2+ channel activity via protein tyrosine phosphatase, not cAMP-dependent protein kinase. *Mol Pharmacol.* 64(3):640-9.

Gerzanich V, Ivanova S, van der Heijden MS, Zhou H, Simard JM (2003) Trans-cellular PCNA gene activation in cerebral vascular smooth muscle by endohthelial oxidative injury in vivo. *Arterioscler Thromb Vasc Biol* ,23(11):2048-54.

Gerzanich V, Ivanov A, Ivanova S, Yang JB, Zhou H, Dong Y, Simard JM.(2003) Alternative splicing of cGKI in angiotensin-hypertension : novel mechanism for nitrate tolerance in vascular smooth muscle. *Circ Res*, 93(9):805-12

Ivanov A, Ivanova S, Melnitchenko L, Gerzanich V, Shuba M, Simard JM.(2003) PCNA upregulation in cerebral vessels with angiotensin II – hypertension: abnormal regulation of Ca^{2+} channel and nitrate tolerance associated with alternative splicing of cGKI . *Neurophysiology,* 35(3/4) : 209-14.

Gerzanich V, Ivanova S, Simard JM. (2003) Early pathophysiological changes in cerebral vessels predisposing to stroke. *Clin Hemorheol Microcirc.* 2003;29(3-4):291-4.

Ivanov A, Gerzanich V, Ivanova S, Denhaese R, Tsymbalyuk O, Simard JM.(2006) Adenylate cyclase 5 and KCa1.1 channel are required for EGFR up-regulation of PCNA in native contractile rat basilar artery smooth muscle. *J Physiol.* 2006 Jan 1;570(Pt 1):73-84

Simard JM,Chen M,Tarasov K,Bhatta S,Ivanova S,Melnichenko L,Tsymbalyuk N, West A, and Gerzanich V.(2006) Newly expressed SUR1-regulated NCa-ATP channel mediates cerebral edema after ischemic stroke. *Nature Med*. (in press)

Research Support

ACTIVE

1 R01 DA018329-01 (Gerzanich, PI) 09/15/2004 - 07/31/2008
NIH/NINDS
Nicotinic ACh receptors in cerebrovascular endothelium

Study investigates role of the cerebrovascular endothelial nicotinic ACHrs in the pathophysiology of the chronic nicotine induced oxidative endothelial injury.

American Heart Association (Gerzanich, PI) 7/1/04-6/30/06
Adenosine signaling regulating calcium channel in cerebral vascular smooth muscle cells

Study investigates the regulation by adenosine of L-type calcium channels in cerebrovascular smooth muscle cells in normotension and hypertension.

2R01HL051932-09 (Simard PI, Gerzanich Co-Investigator) 4/1/04-3/31/09
NIH/NHLBI
Cerebrovascular Ion Channels in Hypertension
Study compares expression of functional channels, including Ca channels and Kca channels in smooth muscle cells from cerebral arteries from normal and angiotensin hypertensive rats.