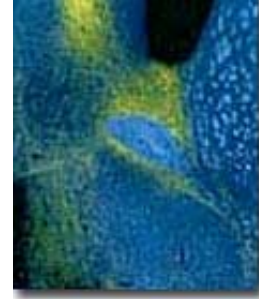




Anuska V Andjelkovic-Zochowska M.D., Ph.D.

Assistant Professor
Assistant Research Professor
Pathology
Neurosurgery
7520 MSRB I
Ann Arbor, MI 48109
734 647 2937
anuskaa@umich.edu



 [Download](#) this page

Research Interests

The blood brain barrier (BBB), a unique and the specialized vascular barriers of the central nervous system (CNS) and serves as a critical gatekeeper for regulating leukocytes infiltration during an inflammatory response. The broad objectives of our research is to understand mechanisms by which leukocytes breach the tight and adherens junctions or induce brain endothelial cell (EC) pore formation. Specific emphasis is placed on the brain endothelial signaling processes initiated by proinflammatory mediators- chemokines – a key molecules in attracting and directing of leukocytes migration. Binding of chemokines to their respective receptors on the brain endothelial cells leads activation a complex cascade of small dimeric G-proteins, such as Rho, Rac and protein kinase C (PKCs) which regulated brain endothelial cytoskeletal rearrangement and junctional “opening”. We are presently investigated whether and how endocytosis participated in junctional “opening” and paracellular route formation during an inflammatory condition. In our laboratory we utilized molecular and cellular biology technique (brain endothelial and astrocytes cell culture, eukaryotic cell transfection, Western blot, RT-PCR, RNA interference, kinase assays...) and as in vivo model of inflammation – stroke like brain ischemic injury – where inflammatory response occur as results of ischemic injury

Another research interest of our laboratory is to define molecular signatures and signaling pathways underlying chemokine action on glioma associated angiogenesis and metastasis. We are currently investigating the mechanisms by which chemokine CCL2 and its receptor regulate tumor-associated angiogenesis and progression with specific attention on involvement and regulation of ETS-1 transcription factors in

these processes.

Selected References

Andjelkovic, AV, Spenser DD, Pachter JS (1999) Visualization of chemokine binding sites on human brain microvessels. *J. Cell Biol.* 145. (2) 403-412.

Dzenko KA, Andjelkovic AV, Kuziel WA and Pachter JS (2001): CCR2 mediates the binding and internalization of MCP-1 along brain microvessels. *J. Neurosci.* 21 (23):9214-9223

Andjelkovic AV, Cong H, Song L and Pachter JS (2002): Functional Expression of CCR2 by human astrocytes. *J. Neuroscience Res.* 70 (2):219-231.

Stamatovic SM, Keep RF, Kunkel SL and Andjelkovic AV (2003): The potential role of MCP-1 in the endothelial cell tight junction "opening": role of Rho and Rho kinase. *J Cell Sci.* 116: 4615-4628.

Andjelkovic AV, Stamatovic SM, Keep RF (2003): The protective effects of preconditioning on cerebral endothelial cells in vitro. *J Cerebral Blood flow and metabolism.* 23:1348-1355

Stamatovic SM, Shakui P, Keep RF, Moore BB, Kunkel SL, van Rooijen N, Andjelkovic AV (2005): Monocyte chemoattractant protein-1 regulation of blood brain barrier permeability. *J Cerebral Blood flow and metabolism.* 25(5):593-606

Dimitrijevic OB, Stamatovic SM, Keep RF, Andjelkovic AV. Effects of the chemokine CCL2 on blood-brain barrier permeability during ischemia-reperfusion injury. *J Cereb Blood Flow Metab.* 2006 Jun;26(6):797-810.

Stamatovic SM, Dimitrijevic OB, Keep RF, Andjelkovic AV. Protein kinase Calpha-RhoA cross-talk in CCL2-induced alterations in brain endothelial permeability. *J Biol Chem.* 2006 Mar 31;281(13):8379-88.

Stamatovic SM, Keep RF, Mostarica-Stojkovic M, Andjelkovic AV. CCL2 Regulates Angiogenesis via Activation of Ets-1 Transcription Factor. *J Immunol.* 2006 Aug 15;177(4):2651-61.

Stamatovic SM, Dimitrijevic OB, Keep RF, Andjelkovic AV. Inflammation and brain edema: new insights into the role of chemokines and their receptors. *Acta Neurochir Suppl.* 2006;96:444-50.

Find more publications by [Dr. Anuska Andjelkovic-Zochowska](#)

Last updated 8/7/2006 [Click here to update](#)

00631