

**FULL LIST OF PUBLICATIONS**  
**Eszter Farkas**

*Full papers:*

1. Kedves, M., Tóth, A. and Farkas, E. (1991) Effect of the high temperature on the morphological characteristic features of the sporomorphs II. *Acta Biol. Szeged.* **37(1-4)**, 25-44.
2. Kedves, M., Tóth, A. and Farkas, E. (1993) An experimental investigation of the biopolymer organization of both recent and fossil sporoderms. *Grana Suppl.* **1**, 40-48. IF: 0.183
3. Streefland, C., Farkas, E. and Maes, F. W. (1996) C-fos expression in the brainstem after voluntary ingestion of sucrose in the rat. *Neurobiology-Bp.* **4(1-2)**, 85-102.
4. Farkas, E., Jansen, A.S.P. and Loewy, A.D. (1997) Periaqueductal gray matter projection to vagal preganglionic neurons and the nucleus tractus solitarius. *Brain Res.* **764**, 257-261. IF: 2.119
5. Jansen, A.S.P., Farkas, E., Sams, J.M. and Loewy, A.D. (1998) Local connections between the columns of the periaqueductal gray matter: a case for intrinsic neuromodulation. *Brain Res.* **784**, 329-336. IF: 2.150
6. Farkas, E., Jansen, A.S.P. and Loewy, A.D. (1998) Periaqueductal gray matter input to cardiac-related sympathetic premotor neurons. *Brain Res.* **792(2)**, 179-192. IF: 2.150
7. De Jong, G.I., Farkas, E., Plass, J., Keijser, J.N., de la Torre, J.C. and Luiten, P.G.M. (1999) Cerebral hypoperfusion yields capillary damage in hippocampus CA1 that correlates to spatial memory impairment. *Neuroscience*, **91(1)**, 203-210. IF: 3.924
8. Farkas, E., De Jong, G.I., de Vos, R.A.I., Jansen Steur, E.N.H. and Luiten, P.G.M. (2000) Pathological features of cerebral capillaries are doubled in Alzheimer's disease and Parkinson's disease. *Acta Neuropath. (Berl.)* **100**, 395-402. IF: 2.446
9. Farkas, E., De Jong, G.I., Apró, E., De Vos, R.A.I., Jansen Steur, E.N.H. and Luiten, P.G.M. (2000) Similar ultrastructural breakdown of cerebrocortical capillaries in Alzheimer's disease, Parkinson's disease and experimental hypertension. What is the functional link? *Ann. N. Y. Acad. Sci.* **903**, 72-82. IF: 1.381
10. Farkas, E., De Vos, R.A.I., Jansen Steur, E.N.H. and Luiten, P.G.M. (2000) Are Alzheimer's disease, hypertension and cerebrocapillary damage related? *Neurobiol. Aging* **21(2)**, 235-243. IF: 4.159
11. Farkas, E., De Jong, G.I., Apró, E., Keuker, J.I.H. and Luiten, P.G.M. (2001) Calcium antagonists decrease capillary wall damage in aging hypertensive rat brain. *Neurobiol. Aging*, **22(2)**, 299-309. IF: 4.490
12. Farkas, E., and Luiten, P.G.M. (2001) Cerebral microvascular pathology in aging and Alzheimer's disease. *Progr. Neurobiol.* **64(6)**, 575-611. IF: 9.933
13. Farkas, E., de Wilde, M.C., Kiliaan, A.J., Meijer, J., Keijser, J.N. and Luiten, P.G.M. (2002) Dietary long chain PUFAs differentially affect hippocampal muscarinic 1 and serotonergic 1A receptors in experimental cerebral hypoperfusion. *Brain Res.*, **954(1)**, 32-41. IF: 2.489
14. de Wilde, M.C., Farkas, E., Gerrits, M., Kiliaan, A.J. and Luiten, P.G.M. (2002) The effect of n-3 polyunsaturated fatty acid-rich diets on cognitive and cerebrovascular parameters in chronic cerebral hypoperfusion. *Brain Res.*, **947(2)**, 166-173. IF: 2.489
15. Farkas, E., de Wilde, M.C., Kiliaan, A.J. and Luiten, P.G.M. (2002) Chronic cerebral hypoperfusion-related neuropathologic changes and compromised cognitive status: window of treatment. *Drugs of Today (Barc.)*, **38(5)**, 365-376. IF: 0.626
16. Farkas, E., de Wilde, M.C., Kiliaan, A.J. and Luiten, P.G.M. (2002) Systemic effects of dietary n-3 PUFA supplementation accompany changes of CNS parameters in cerebral hypoperfusion. *Ann. N. Y. Acad. Sci.*, **977**, 77-86. IF: 1.593
17. Farkas, I.G., Czigler, A., Farkas, E., Dobó, E., Soós, K., Penke, B., Endrész, V. and Mihály, A. (2003) Beta-amyloid peptide induced blood-brain barrier disruption facilitates T-cell entry into the rat brain. *Acta Histochem.*, **105(2)**, 115-125(11). IF: 0.656
18. de Wilde, M.C., Hógyes, E., Kiliaan, A.J., Farkas, T., Luiten, P.G.M. and Farkas, E. (2003) Dietary n-3 PUFAs alter blood pressure and brain fatty acid content in SHR rats. *Brain Res.*, **988(1-2)**, 9-19. IF: 2.474
19. Farkas, E., Institoris, Á., Domoki, F., Mihály, A., Luiten, P.G.M. and Bari, F. (2004) Diazoxide and dimethyl sulphoxide prevent cerebral hypoperfusion-related learning dysfunction and brain damage after carotid artery occlusion. *Brain Res.*, **1008(2)**, 250-258. IF: 2.389
20. Farkas, E., Donka, G., de Vos, R.A.I., Mihály, A., Bari, F. and Luiten, P.G.M. (2004) Experimental cerebral hypoperfusion imposes white matter injury and microglial activation in the rat brain. *Acta Neuropath. (Berl.)*, **108(1)**, 57-64. IF: 2.503
21. Meerlo, P., Roman, V., Farkas, E., Keijser, J.N., Nyakas, C., and Luiten, P.G.M. (2004) Ageing-related decline in Adenosine A1 Receptor Binding in the Rat Brain: an Autoradiographic Study. *J. Neurosci. Res.*, **78(5)**, 742-748. IF: 3.727

22. Farkas, E., Annaházi, A., Instítóris, Á., Mihály, A., Luiten, P.G.M., Bari, F. (2005) Diazoxide and dimethyl sulphoxide alleviate experimental cerebral hypoperfusion-induced white matter injury in the rat brain. *Neurosci. Lett.*, **373(3)**, 195-199. IF: 2.019
23. Domoki, F., Kis, B., Nagy, K., Farkas, E., Busija, D.W., Bari, F. (2005) Diazoxide preserves hypercapnia-induced arteriolar vasodilation after global cerebral ischemia in piglets. *Am. J. Physiol. Heart. Circ. Physiol.* **289(1)**, H368-373. IF: 3.560
24. Farkas, E., Timmer, N.M., Domoki, F., Mihály, A., Luiten, P.G.M., Bari, F. (2005) Post-ischemic administration of diazoxide attenuates long-term microglial activation in the rat brain after permanent carotid artery occlusion. *Neurosci. Lett.*, **387(3)**, 168-172. IF: 1.898
25. Fabene, P.F., Weiczner, R., Marzola, P., Nicolato, E., Calderan, L., Andrioli, A., Farkas, E., Süle, Z., Mihály, A., Sbarbati, A. (2006) Structural and functional MRI following 4-aminopyridine-induced seizures: A comparative imaging and anatomical study. *Neurobiol. Dis.*, **21(1)**, 80-89. IF: 4.048
26. Farkas, E., de Vos, R.A.I., Donka, G., Jansen Steur, E.N., Mihály, A., Luiten, P.G.M. (2006) Age-Related Microvascular Degeneration in the Human Cerebral Periventricular White Matter. *Acta Neuropath. (Berl.)*, **111(2)**, 150-157. IF: 2.527
27. Farkas, E., Domoki, F., Instítóris, Á., Annaházi, A., Busija, D.W., Bari, F. (2006) Neuroprotection by diazoxide in animal models for cerebrovascular disorders. *Vasc. Dis. Prev.*, **3(3)**, 253-264.
28. Farkas, E., Instítóris, Domoki, F., Mihály, A., Bari, F. (2006) The effect of pre- and post-treatment with diazoxide on the early phase of chronic cerebral hypoperfusion in the rat. *Brain Res.*, **1087(1)**, 168-174. IF: 2.341
29. Farkas, E., Süle, Z., Tóth-Szűki V., Mátyás, A., Antal, P., Farkas, I.G., Mihály, A., Bari, F. (2006) Tumor necrosis factor-alpha increases cerebral blood flow and ultrastructural capillary damage through the release of nitric oxide in the rat brain. *Microvasc. Res.*, **72(3)**, 113-119. IF: 2.477
30. Farkas, E., Luiten, P.G.M., Bari, F. (2007) Permanent, bilateral common carotid artery occlusion in the rat: a model for chronic cerebral hypoperfusion-related neurodegenerative diseases. *Brain Res. Rev.*, **54**, 162-180. IF: 6.477
31. Annaházi, A., Mracskó, É., Süle, Z., Karg, E., Penke, B., Bari, F., Farkas, E. (2007) Pre-treatment and post-treatment with  $\alpha$ -tocopherol attenuates hippocampal neuronal damage in experimental cerebral hypoperfusion. *Eur. J. Pharmacol.*, **571**, 120-128. IF: 2.376
32. Instítóris, Á., Farkas, E., Berczi, S., Süle, Z., Bari, F. (2007) Effects of cyclooxygenase (COX) inhibition on memory impairment and hippocampal damage in the early period of cerebral hypoperfusion in rats. *Eur. J. Pharmacol.*, **574(1)**, 29-38. IF: 2.376
33. Farkas, E., Pratt, R., Sengpiel, F., Obrenovitch, T.P. (2008) Direct, live imaging of cortical spreading depression and anoxic depolarisation using a fluorescent, voltage-sensitive dye. *J. Cereb. Blood Flow Metab.*, **28(2)**, 251-262. IF: 5.741
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35. Süle, Z., Mracskó, É., Bereczki, E., Sántha, M., Csont, T., Ferdinandy, P., Bari, F., Farkas, E. (2009) Capillary injury in the ischemic brain of hyperlipidemic, apolipoprotein B-100 transgenic mice. *Life Sci.* **84(25-26)**, 935-939. IF: 2.560
36. Oomen, C.A., Farkas, E., Roman, V., van der Beek, E.M., Luiten, P.G.M., Meerlo, P. (2009) Resveratrol preserves cerebrovascular density and cognitive function in aging mice. *Frontiers in Aging Neuroscience*, **1:4**. doi:10.3389/neuro.24.004.2009.
37. Farkas, E., Bari, F., Obrenovitch, T.P. (2010) Multi-modal imaging of anoxic depolarization and hemodynamic changes induced by cardiac arrest in the rat cerebral cortex. *Neuroimage*, **51(2)**, 734-742. IF: 5.739 (JCR 2009)
38. Mracskó, É., Hugyecz, M., Instítóris, Á., Farkas, E., Bari, F. (2010) Changes in prooxidant and antioxidant enzyme levels during cerebral hypoperfusion in rats. *Brain Res.*, **1321**, 13-19. IF: 2.623 (JCR 2010)
39. Farkas, E., Obrenovitch, T.P., Bari, F., (2010) Az agytraumával vagy stroke-kal járó agykérgi kúszó depolarizáció és periinfarctus depolarizáció patofiziológiai jelentősége. *Vasc. Neurol.*, **2(3)**, 62-67.
40. Farkas, E., Obrenovitch, T.P., Instítóris, Á., Bari, F. (2011) Effects of early aging and cerebral hypoperfusion on spreading depression in rats. *Neurobiol. Aging*, **32(9)**, 1707-1715. IF: 6.189
41. Hugyecz, M., Mracskó, E., Hertelendy, P., Farkas, E., Domoki, F., Bari, F. (2011) Hydrogen supplemented air inhalation reduces changes of prooxidant enzyme and gap junction protein levels after transient global cerebral ischemia in the rat hippocampus. *Brain Res.*, **1404**, 31-38. IF: 2.728
42. Mracskó, É., Hugyecz, M., Farkas, E., Domoki, F., Bari, F. (2011) Oxidatív hatások és hatékony antioxidáns terápiás beavatkozások kísérletes agyi ischaemiában. *Vasc. Neurol.* **3(2)**, 25-33.
43. Bere, Z., Bari, F., Obrenovitch, T.P., Farkas, E. (2012) Characterization of multifocal cerebral ischemia-induced microvascular changes with multimodal imaging technique in the cerebral cortex of the rat. *Sci. Med.* **3(1)**, 57-62.

44. Bere, Z., Obrenovitch, T.P., Bari, F., Farkas, E. (2014) Ischemia-induced depolarizations and associated hemodynamic responses in incomplete global forebrain ischemia in rats. *Neurosci*, **260**, 217-226. IF: 3.122
45. Farkas, E., Bari, F. (2014) Spreading depolarization in the ischemic brain: Does aging have an impact? *J. Gerontol. A Biol. Sci. Med. Sci.* **69(11)**, 1363-1370. IF: 4.314
46. Clark, D., Instítóris, Á., Kozák, G., Bere, Z., Tuor, U., Farkas, E., Bari, F. (2014) Impact of aging on spreading depolarizations induced by focal brain ischemia in rats *Neurobiol. Aging*, **35(12)**, 2803-11. IF: 6.166
47. Bere, Z., Obrenovitch, T.P., Kozák, G., Bari, F., Farkas, E. (2014) Imaging reveals the focal area of spreading depolarizations and a variety of hemodynamic responses in a rat microembolic stroke model. *J. Cereb. Blood Flow Metab.*, **34(10)**, 1695-705. IF: 5.398
48. Di Marco, L.Y., Farkas, E., Martin, C., Venneri, A., Frangi, A.F. (2015) Is vasomotion in cerebral arteries impaired in Alzheimer's disease? - A review study. *J. Alzheimer Dis.*, **46**, 35–53. IF: 3.612
49. Tarantini, S., Hertelendy, P., Tucsek, Z., Valcarcel-Ares, M.N., Smith, N., Menyhart, Á., Farkas, E., Hodges, E., Towner, R., Deak, F., Sonntag, W.E., Csiszar, A., Ungvari, Z., Tóth, P. (2015) Pharmacologically-induced neurovascular un-coupling is associated with cognitive impairment in mice. *J. Cereb. Blood Flow Metab.*, doi:10.1038/jcbfm.2015.162, ahead of print. IF: 5.398
50. Toth, P., Tarantini, S., Ashpole, N.M., Tucsek, Z., Milne, G.L., Valcarcel-Ares, N.M., Menyhart, A., Farkas, E., Sonntag, W.E., Csiszar, A., Ungvari, Z. (2015) IGF-1 deficiency impairs neurovascular coupling in mice: implications for cerebrovascular aging. *Aging Cell*, doi: 10.1111/ace1.12372, ahead of print. IF: 6.340
51. Di Marco, L.Y., Venneri, A., Farkas, E., Evans, P.C., Marzo, A., Frangi, A.F. (2015) Vascular dysfunction in the pathogenesis of Alzheimer's disease – A review of endothelium-mediated mechanisms and ensuing vicious circles. *Neurobiol. Dis.* in press. IF: 5.078
52. Menyhart, Á., Makra, P., Szepes, B.É., M. Tóth, O., Hertelendy, P., Bari, F., Farkas, E. (2015) High incidence of adverse cerebral blood flow responses to spreading depolarization in the aged ischemic rat brain. *Neurobiol. Aging*, **36(12)**, 3269-77. IF: 5.013
53. Hertelendy P., Menyhart Á., Makra P., Süle Z., Kiss T., Tóth G., Ivánkovits-Kiss, O., Bari, F., Farkas, E. (2016) Advancing age and ischemia elevate the electric threshold to elicit spreading depolarization in the cerebral cortex of young adult rats. *J. Cereb. Blood Flow Metab.* pii: 0271678X16643735, in press.
54. Dreier, J.P., Fabricius, M., Ayata, C., Sakowitz, O.W., Shuttleworth, W.C., Dohmen, C., Graf, R., Vajkoczy, P., Helbok, R., Suzuki, M., Schiefecker, A.J., Major, S., Winkler, M.K., Kang, E.J., Milakara, D., Oliveira-Ferreira, A.I., Reiffurth, C., Revankar, G.S., Sugimoto, K., Dengler, N.F., Hecht, N., Foreman, B., Feyen, B., Kondziella, D., Friberg, C.K., Piilgaard, H., Rosenthal, E.S., Westover, M.B., Maslarova, A., Santos, E., Hertle, D., Sánchez-Porrás, R., Jewell, S.L., Balança, B., Platz, J., Hinzman, J.M., Lückl, J., Schoknecht, K., Schöll, M., Drenckhahn, C., Feuerstein, D., Eriksen, N., Horst, V., Bretz, J.S., Jahnke, P., Scheel, M., Bohner, G., Rostrup, E., Pakkenberg, B., Heinemann, U., Claassen, J., Carlson, A.P., Kowoll, C.M., Lublinsky, S., Chassidim, Y., Shelef, I., Friedman, A., Brinker, G., Reiner, M., Kirov, S.A., Andrew, R.D., Farkas, E., Güresir, E., Vatter, H., Chung, L.S., Brennan, K.C., Lieutaud, T., Marinesco, S., Maas, A.I., Sahuquillo, J., Dahlem, M.A., Richter, F., Herreras, O., Boutelle, M.G., Okonkwo, D.O., Bullock, M.R., Witte, O.W., Martus, P., van den Maagdenberg, A.M., Ferrari, M.D., Dijkhuizen, R.M., Shutter, L.A., Andaluz, N., Schulte, A.P., MacVicar, B., Watanabe, T., Woitzik, J., Lauritzen, M., Strong, A.J., Hartings, J.A. (2016) Recording, analysis, and interpretation of spreading depolarizations in neurointensive care: Review and recommendations of the COSBID research group. *J. Cereb. Blood Flow Metab.* pii: 0271678X16654496, ahead of print.
55. Hartings, J.A., Shuttleworth, C.W., Kirov, S.A., Ayata, C., Hinzman, J.M., Foreman, B., Andrew, R.D., Boutelle, M.G., Brennan, K.C., Carlson, A.P., Dahlem, M.A., Drenckhahn, C., Dohmen, C., Fabricius, M., Farkas, E., Feuerstein, D., Graf, R., Helbok, R., Lauritzen, M., Major, S., Oliveira-Ferreira, A.I., Richter, F., Rosenthal, E.S., Sakowitz, O.W., Sánchez-Porrás, R., Santos, E., Schöll, M., Strong, A.J., Urbach, A., Westover, M.B., Winkler, M.K., Witte, O.W., Woitzik, J., Dreier, J.P. (2016) The continuum of spreading depolarizations in acute cortical lesion development: Examining Leão's legacy. *J. Cereb. Blood Flow Metab.* pii: 0271678X16654495, ahead of print.
56. Toth, P., Szarka, N., Farkas, E., Ezer, E., Czeiter, E., Amrein, K., Ungvari, Z., Hartings, J.A., Buki, A., Koller, Á. (2016) Autoregulatory dysfunction and spreading depression-related neurovascular un-coupling following traumatic brain injury: pathomechanisms, therapeutic implications, and perspectives. *Am. J. Physiol. Heart. Circ. Physiol.* in press.

*Books / book chapters:*

1. Kedves, M., Tóth, A. and Farkas, E. (1991) High temperature effect on the spores of *Equisetum arvense* L. *Plant Cell Biology and Development* 1, 8-15.
2. Kedves, M., Párdutz, Á., Farkas, E. and Vér, A. (1991) Basic establishments of the biological objects molecular structure containing quasi-crystalloid skeleton. *Plant Cell Biology and Development* 1, 35-38.

3. Kedves, M. and Farkas, E. (1991) Basis of the tertiary rotation and TICOS modeling of the quasi-crystalloid biopolymer skeleton of the plant cell. *Plant Cell Biology And Development* 2, 36-43.
4. Kedves, M., Farkas, E., Mészáros, K., Tóth, A. and Vér, A. (1991) Investigations of the basic biopolymer structure of the ectexine of *Alnus glutinosa* (L.) GAERTN. *Plant Cell Biology And Development* 2, 49-59.
5. Farkas, E., De Jong, G.I., de Vos, R.A.I., Jansen Steur, E.N.H. and Luiten, P.G.M. (1999) Cerebral microvascular breakdown in Alzheimer's disease and in experimental cerebral hypoperfusion. In *Alzheimer's Disease and Related Disorders*, Eds.: Iqbal, K., Swaab, D.F., Winblad, B. and Wisniewski, H.M., Wiley, Chichester (UK), pp.166-170.
6. Farkas, E. Cerebrovascular Risk Factors for Dementia. Ph. D. thesis (2001), van Denderen BV, Groningen, The Netherlands, ISBN 90-367-1370-6.
7. Penke, B., Farkas, E., Bari, F., Zarandi, M. And Janaky, T. (2007) Possible therapeutic use of tocopherols in cardiovascular and neurodegenerative diseases. In *5th Joint Meeting on Medical Chemistry*, Editor: Danijel Kikelj, Medimond S.r.l., Bologna, Italy, pp. 31-35. ISBN: 978-88-7587-359-2.
8. Farkas, E., Obrenovitch, T.P. (2009) Direct, live imaging of stroke-associated cortical spreading depression in experimental models. In *Recent advances and new strategies in stroke research*, Editor: Erdő, F., Transworld Research Network, Kerala, India, pp. 53-71., ISBN: 978-81-7895-385-4.

*Abstracts published in cited journals:*

1. Streefland, C., Farkas, E. and Maes, F. W. (1995) Taste-induced c-fos expression in the rat hindbrain. *Chemical Senses*, **20(1)**, 154-155. IF: 2.222
2. Farkas, E., de Wilde, M.C., Kiliaan, A.J. and Luiten, P.G.M. (2001) Chronic n-3 PUFA effects on receptor densities in a cerebral hypoperfusion model. *Neurobiology (Bp.)*, **9(3-4)**, 302.
3. Instítóris, Á., Farkas, E., Domoki, F., Mihály, A., Bari, F. (2004) Diazoxide prevents microglia activation in experimental cerebral hypoperfusion. *Clin.Neurosci./Idegyógy. Szle.* **57 (Suppl. 1)**, 26-27.
4. Donka, G., de Vos, R.A.I., Luiten, P.G.M., Mihály, A., Farkas, E. (2004) Cerebral hypoperfusion induces white matter injury in the rat brain. *Clin.Neurosci./Idegyógy. Szle.* **57 (Suppl. 1)**,
5. Bari, F., Annaházi, A., Instítóris, Á., Domoki, F., Farkas, E. (2005) Administration of diazoxide, a mitoKATP channel opener decreases hypoperfusion-related memory dysfunction and neuronal damage in rats. *FASEB J.*, **19 (5)**, A1250-A1250 Part 2 Suppl. S. IF: 7.064
6. Annaházi, A., Farkas, E., Mracskó, É., Instítóris, Á., Süle, Z., Karg, E., Mihály, A., Penke, B., Bari, F. (2006) Systemic administration of alpha-tocopherol attenuates cerebral hypoperfusion-induced learning dysfunction in rats. *Clin.Neurosci./Idegyógy. Szle.* **59**, 6-7.
7. Instítóris, Á., Farkas, E., Süle, Z., Annaházi, A., Bari, F. (2006) COX-2 inhibition prevents memory failure and neuronal death in cerebral hypoperfusion in rats. *Clin.Neurosci./Idegyógy. Szle.* **59**, 28.
8. Süle, Z., Tóth-Szúki, V., Antal, P., Mátyás, A., Mihály, A., Bari, F., Farkas, E. (2006) TNF- $\alpha$ -induced microvascular damage is mediated by nitrogen monoxide in the rat brain. *Clin.Neurosci./Idegyógy. Szle.* **59**, 60.
9. Farkas, E., Mracsko, E., Krecsmarik, M., Karg, E., Penke, B., Bari, F. (2007) Oxidative stress contributes to memory impairment and neuronal damage in experimental cerebral hypoperfusion. *J. Cereb. Blood Flow Metab.*, **27 (Suppl. 1)**, BO06-07. IF: 5.147
10. Bari, F., Zimmermann, A., Pardeike, J., Farkas, E., Domoki, F. (2008) Secretory phospholipase A2 is involved in hypoxic cerebrovascular injury in the newborn piglet. *Stroke*, **39**, 547. IF: 6.296
11. Farkas, E., Chen, S., Obrenovitch, T.P. (2008) Simultaneous imaging of changes in cerebral blood flow and tissue pH during K<sup>+</sup>-induced cortical spreading depression. *J. Vasc. Res.*, **45 (Suppl. 2)**, 46. IF: 2.792
12. Süle, Z., Bari, F., Sántha, M., Bereczki, E., Farkas, E. (2008) Capillary injury in the ischemic brain of hyperlipidemic, apolipoprotein b-100 transgenic mice. *J. Vasc. Res.*, **45 (Suppl. 2)**, 122. IF: 2.792
13. Mracskó, É., Hügyecz, M., Farkas, E., Bari, F. (2008) Changes in nitric oxide synthase (NOS), cyclooxygenase-2 (COX-2), superoxide dismutase (SOD) protein levels in the early phase of chronic cerebral hypoperfusion in rats. *J. Vasc. Res.*, **45 (Suppl. 2)**, 122. IF: 2.792
14. Süle, Z., Kovacs, G.G., Mihaly, A., Farkas, E. (2009) Microvascular aberrations in the white matter in Alzheimer's disease. *J. Neurol. Sci.*, **283(1-2, 15)**, 286. IF: 2.986
15. Farkas, E., Pratt, R., Butler, M., Obrenovitch, T.P. (2009) Direct, live imaging of peri-lesion depolarizations in stroke models. *J. Neurol. Sci.*, **283(1-2, 15)**, 253. IF: 2.986
16. Bari, F., Farkas, E. (2009) Mitochondrial ATP-sensitive potassium-channel: A novel target of neuroprotection in cerebral hypoperfusion. *J. Neurol. Sci.*, **283(1-2, 15)**, 246-247. IF: 2.986
17. Farkas, E., Obrenovitch, T.P., Bari, F. (2009) Aging and chronic cerebral hypoperfusion alters the evolution of potassium-induced cortical spreading depression (CSD) in rats. *Acta Physiol. Hun.*, **97(1)**, 100-101. IF: 0.750
18. Mracskó, É., Hügyecz, M., Instítóris, Á., Farkas, E., Bari, F. (2009) Changes in pro-oxidant and antioxidant enzyme levels in chronic cerebral hypoperfusion in rats. *Acta Physiol. Hun.*, **97(1)**, 123-124. IF: 0.750

19. Instítóris, Á., Mracskó, É., Hugyecsz, M., Mátyás, A., Süle, Z., Farkas, E., Bari, F. (2009) Changes in nitric oxide synthase (NOS), cyclooxygenase-2 (COX-2) and superoxide dismutase (SOD) protein levels in chronic cerebral hypoperfusion in rats. *J. Cereb. Blood Flow Metab.* **29(Suppl. 1)**, S464. IF: 5.457
20. Farkas, E., Lenti, L., Kemény, L., Obrenovitch, T.P, Bari, F. (2009) Evolution of cortical spreading depression is altered by aging and chronic cerebral hypoperfusion. . *J. Cereb. Blood Flow Metab.*, **29(Suppl. 1)**, S295. IF: 5.457
21. Farkas, E., Bere, Z., Kozák, G., Bari, F. (2014) Evolution of spreading depolarizations in a rat cerebral microembolic stroke model. *Acta Physiologica*, 211(Suppl. 697), 54.
22. Menyhárt, Á., Szepes, B., M. Tóth, O., Hertelendy, P., Bari, F., Farkas E. (2014) The evolution of K<sup>+</sup>-evoked spreading depolarization shortly after carotid occlusion in young and aged rats. *Acta Physiologica*, 211(Suppl. 697),179.
- 23.

*International conference abstracts / seminar contributions (\*indicates those presented by E. Farkas):*

*Invited lectures:*

1. Farkas, E.\*, Chen, S., Obrenovitch, T.P. Simultaneous imaging of changes in cerebral blood flow and tissue pH during K<sup>+</sup>-induced cortical spreading depression. *25th Conference of the European Society for Microcirculation*, Budapest, Hungary; August 26-29, 2008.
2. Farkas, E.\*, Obrenovitch, T.P., Bari, F. Aging and chronic cerebral hypoperfusion alter the pattern of CSD in the rat. *7th Forum of European Neuroscience*, Amsterdam, The Netherlands; July 3-7, 2010.
3. Bari, F., Farkas, E. Multimodal imaging of neurovascular coupling in the injured brain. *International Conference on Laser Applications in Life Sciences (LALS 2014)*, Ulm, Germany; June 29-July 2, 2014.
4. Farkas, E. Experimental modelling reveals the role cerebrovascular pathophysiology plays in the evolution of cognitive impairment. *VPH-DARE@IT 3rd General Assembly Meeting*, Manchester, United Kingdom, September 25-26, 2014.
5. Farkas, E.\* Spreading depolarization in experimental cerebral ischemia: what can we learn by in vivo multimodal imaging? *The 16th Annual COSBID Meeting*, Boston, MA, U.S.A., October 23-24, 2014.
6. Farkas, E.\* Blood flow and oxygenation during global and focal ischemia. Aarhus CTH Meeting, Aarhus, Denmark, December 15-17, 2014.
7. Farkas, E.\* Does age have an impact on spreading depolarization? *XXVIIth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '15)*, Vancouver, Canada, June 27-30, 2015.
8. Farkas, E.\* Injury-related spreading depolarization in aging: mechanisms and consequences. *XXVIIIth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '17)*, Berlin, Germany, April 1-4, 2017.

*Seminars:*

1. Farkas, E.\*, Obrenovitch, T.P. Direct, live imaging of peri-lesion depolarizations in stroke models. School of Life Sciences, University of Bradford, Bradford, United Kingdom; October 25, 2007.
2. Farkas, E.\*, Chen, S., Obrenovitch, T.P. Multimodal imaging of K<sup>+</sup>-induced cortical spreading depression. School of Biological and Biomedical Sciences, University of Durham, Durham, United Kingdom; April 24, 2008.
3. Farkas, E.\*, Obrenovitch, T.P. Voltage sensitive dye imaging of cortical depolarization early after middle cerebral artery occlusion in rats. Department of Pharmacology, University of Oxford, Oxford, United Kingdom; June 13, 2008.
4. Farkas, E.\* Age alters neurovascular coupling in the ischemic rat brain. Donald W. Reynolds Chair of Aging Research, Reynolds Oklahoma Center on Aging, Department of Geriatric Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, OK, USA; October 27, 2014.

*Talks:*

1. Farkas, E.\*, De Jong, G.I., Plass, J., De Vos, R.I.A. and Luiten, P.G.M. Cerebrovascular deficiencies and cognitive decline: implications in Alzheimer's disease. *Conference of Advances in the Biology of the Cerebral Vasculature and the Blood-Brain Barrier*. Salishan Lodge, Gleneden Beach, OR, U.S.A. ; March 25-28, 1998.
2. De Jong, G.I, Farkas, E.\*, de Vos, R.A.I., de la Torre, J.C. and Luiten, P.G.M. Capillary changes in aging, experimental cerebral hypoperfusion and Alzheimer's disease. *2nd International Meeting of Vascular Factors in Alzheimer's Disease*, Newcastle, England; May 25-28, 1999.
3. Farkas, E.\*, de Wilde, M.C., Kiliaan, A.J. and Luiten, P.G.M. Fish oil fatty acids improve cerebral microvascular and neuronal signaling parameters in experimental cerebral hypoperfusion. *3rd International Meeting Vascular Factors in Alzheimer's Disease*, Kyoto, Japan; April 7-10, 2002.

4. Farkas, E.\*, de Vos, R.A.I., de Wilde, M.C., Kiliaan, A.J., Luiten, P.G.M. Alleviating dementia by improving cerebrovascular condition. *The Human Brain conference*, Fondazione IRCCS Santa Lucia Rome, Italy; October 5-10, 2002.
5. Farkas, E.\*, Farkas, I.G., Tóth-Szűki, V., Mihály, A., Bari, F. Circulating TNF $\alpha$  increases cerebrocortical perfusion and imposes BBB damage. *6<sup>th</sup> Symposium on Signal Transduction in the Blood-Brain Barrier*, Szeged, Hungary; September 18-21, 2003.
6. Bari, F., Annaházi, A., Institoris, Á., Domoki, F., Farkas, E. Administration of diazoxide, a mitoKATP channel opener decreases hypoperfusion-related memory dysfunction and neuronal damage in rats. *XXXV. International Congress of Physiological Sciences*, San Diego, U.S.A. Poster and Talk; March 31-April 5, 2005.
7. Bari, F., Institoris, Á., Annaházi, A., Mracskó, É., Süle, Z., Farkas, E. Novel approaches to reduce the hypoperfusion-induced memory deficit and brain damage in rats. *5<sup>th</sup> International Congress of Pathophysiology*, Beijing, China; June 28–July 1, 2006.
8. Farkas, E.\*, Mracskó, É., Krecsmarik, M., Karg, E., Penke, B., Bari, F. Oxidative stress contributes to memory impairment and neuronal damage in experimental cerebral hypoperfusion. *23<sup>rd</sup> International Symposium on Cerebral Blood Flow, Metabolism and Function*, Osaka, Japan; May 20-24, 2007.
9. Bari, F., Farkas, E. Mitochondrial ATP-sensitive potassium-channel: a novel target of neuroprotection in cerebral hypoperfusion. *The Fifth International Congress on Vascular Dementia*, Budapest, Hungary; November 8-11, 2007.
10. Farkas, E.\*, Pratt, R., Butler, M., Obrenovitch, T.P. Direct, live imaging of peri-lesion depolarizations in stroke models. *The Fifth International Congress on Vascular Dementia*, Budapest, Hungary; November 8-11, 2007.
11. Bari, F., Zimmermann, A., Pardeike, J., Farkas, E., Domoki, F. Secretory phospholipase A2 is involved in hypoxic cerebrovascular injury in the newborn piglet. *International Stroke Conference 2008*, New Orleans, LA, U.S.A.; February 20-22, 2008.
12. Farkas, E.\*, Obrenovitch, T.P. Voltage sensitive dye imaging of cortical depolarization early after middle cerebral artery occlusion in rats. *9<sup>th</sup> Meeting of the Co-operative Study of Brain Injury Depolarisations (COSBID)*, Robinson College, University of Cambridge, United Kingdom; June 26-27, 2008.
13. Obrenovitch, T.P., Chen, S., Farkas, E. Dual imaging of cortical spreading depression and associated cerebral blood flow changes by combining voltage-sensitive dye and laser speckle contrast methods. *11<sup>th</sup> Meeting of the Co-operative Study of Brain Injury Depolarisations (COSBID)*, Heidelberg, Germany, April 22-24, 2009.
14. Farkas, E.\*, Obrenovitch, T.P., Bari, F. Effect of aging, with or without chronic hypoperfusion, on potassium-induced cortical spreading depression (CSD) in rats. *11<sup>th</sup> Meeting of the Co-operative Study of Brain Injury Depolarisations (COSBID)*, Heidelberg, Germany, April 22-24, 2009.
15. Farkas, E.\*, Bari, F., Obrenovitch, T.P. Multi-modal imaging of anoxic depolarization and hemodynamic changes induced by cardiac arrest in the rat cerebral cortex. *12<sup>th</sup> Meeting of the Co-operative Study of Brain Injury Depolarisations (COSBID)*, Barcelona, Spain, May 5-8, 2010.
16. Bari, F., Bere, Z., Kulmány, A., Obrenovitch, T.P., Farkas, E. Characterization of multifocal cerebral ischemia-induced periinfarct-depolarisations with multimodal imaging in rat cerebral cortex. *Joint Meeting of the European Society of Microcirculation and the German Society of Microcirculation and Vascular Biology*, Munich, Germany, October 13-16, 2011.
17. Farkas, E.\*, Bere, Z., Clark, D.L., Bari, F. Multi-modal imaging of spreading depolarizations in rat models of cerebral ischemia. *15<sup>th</sup> Meeting of the Co-operative Study of Brain Injury Depolarisations (COSBID)*, Innsbruck, Austria, September 13-14, 2013.
18. Farkas, E.\*, Bere, Z., Kozák, G., Bari, F. Evolution of spreading depolarizations in a rat cerebral microembolic stroke model. *Joint Meeting of the European Physiological Societies (FEPS) and the Hungarian Physiological Society*, Budapest, Hungary; August 27-30, 2014.
19. Bari, F., Menyhárt, Á., Zölei-Szénási, D., Puskás, T., Farkas, E. Optical imaging of intracellular pH changes with spreading depolarization in the intact and ischemic rat brain. *Joint 28th European Society for Microcirculation and 8th European Vascular Biology Organization Meeting (2015 ESM-EVBO Joint Meeting)*, Pisa, Italy; June 3-6, 2015.
20. Zölei-Szénási, D., Farkas, E., Menyhárt, Á., Puskás, T., Bari, F. Multimodal imaging of cerebrovascular physiology. *13th National Conference of Biophysics (of the Romanian Society of Pure and Applied Biophysics)*, Timișoara, Romania; June 4-6, 2015.
21. Menyhárt, Á., Hertelendy, P., Makra, P., Szepes, B.É., M. Tóth, O., Bari, F., Farkas, E. The impact of age on the evolution of spreading depolarization triggered during global forebrain ischemia in the rat. *17<sup>th</sup> COSBID Meeting*, Elsinore, Denmark; September 9-11, 2015.
22. Farkas, E.\*, Menyhárt, Á., Zölei-Szénási, D., Puskás, T., Tóth, R., Hertelendy, P., Bari, F. Optical imaging of tissue pH changes with spreading depolarization in the intact and ischemic rat brain. *17<sup>th</sup> COSBID Meeting*, Elsinore, Denmark; September 9-11, 2015.

23. Bari, F., Menyhárt, Á., Zölei-Szénási, D., Puskás, T., Farkas, E. Multimodal optical imaging of the injured brain. *ALT16 (International Conference on Advanced Laser Technologies)*, Galway, Ireland; September 12-16, 2016.

*Posters:*

1. Streefland, C., Farkas, E. and Maes, F. W. Taste-induced c-fos expression in the rat hindbrain. *XVI. Conference of AChemS (Association of Chemoreception Sciences)* Sarasota, Florida, U.S.A.; April, 1994.
2. Streefland, C., Farkas, E. and Maes, F. W. C-fos expression in the hindbrain after voluntary sucrose ingestion in the rat. *11th Congress of ECRO (European Chemoreception Research Organization)*, Munich, Germany; August 23-28, 1994.
3. Farkas, E.\*, Jansen, A.S.P. and Loewy, A.D. Periaqueductal gray matter projections to autonomic preganglionic neurons. *26th Annual Meeting of the Society of Neuroscience*, Washington D.C., U.S.A.; November 16-21, 1996.
4. Farkas, E., Jansen, A.S.P. and Loewy, A.D. Periaqueductal gray matter input to raphe magnus region: A major CNS sympathetic pathway. *27th Annual Meeting of the Society of Neuroscience*, New Orleans, LA, U.S.A.; October 25-30, 1997.
5. Farkas, E., De Jong, G.I., Plass, J., De Vos, R.I.A. and Luiten, P.G.M. Cerebrovascular deficiencies and cognitive decline: implications in Alzheimer's disease. *6th International Conference on Alzheimer's Disease and Related Disorders*, Amsterdam RAI, The Netherlands; July 18-23, 1998.
6. Farkas, E.\*, De Jong, G.I., Vos, R.A.I., Jansen Steur, E.N.H. and Luiten, P.G.M. Pathological features of cerebral cortical capillaries are tripled in Alzheimer's and Parkinson's disease. *2nd International Meeting Vascular Factors in Alzheimer's Disease*, Newcastle, England; May 25-28, 1999.
7. de Wilde, M.C., Farkas, E., Kiliaan, A. and Luiten, P.G.M. Improved cognitive and cerebrovascular parameters by fish oil fatty acids in chronic brain hypoperfusion. *5th Dutch Endo-Neuro Meeting*, Doorwerth, The Netherlands; June 5-7, 2001.
8. Farkas, E.\*, Keuker, J.I.H. and Luiten, P.G.M. Prevention of hypertension-related cerebrovascular pathology with calcium channel blockers. *31st Annual Meeting of the Society of Neuroscience*, San Diego., U.S.A.; November 10-15, 2001.
9. Farkas, E.\*, de Wilde, M.C., Kiliaan, A.J. and Luiten, P.G.M. Chronic n-3 PUFA effects on receptor densities in a cerebral hypoperfusion model. *2nd Neurobiology of Aging Conference*, San Diego., U.S.A.; November 8-9, 2001.
10. Farkas, E.\*, de Wilde, M.C., Kiliaan, A.J. and Luiten, P.G.M. Chronic n-3 PUFA effects on receptor densities in a cerebral hypoperfusion model. *IBRO International Workshop*, Debrecen, Hungary; January 24-26, 2002.
11. Farkas, I.G., Farkas, E., Czigner, A., Dobó, E., Endrész, V., Mihály A. Intracarotid injection of TNF $\alpha$  produces swelling of perivascular astrocytic end-feet and enhances T-lymphocyte entry into the brain of the rat. *Joint meeting, Anatomische Gesellschaft – 98. Versammlung, Anatomical Society of Great Britain and Ireland, Nederlandse Anatomen Vereniging, Sociedad Anatómica Espanola*. Dresden, Germany; March 28-31, 2003.
12. Farkas, E.\*, de Vos, R.A.I., Donka, G., Krisztin-Péva, B., Mihály, A., Luiten, P.G.M. Histopathologic changes in the cerebral white matter in aging and dementia. *First Congress of the International Society for Vascular Behavioural and Cognitive Disorders (Vas-Cog)*, Göteborg, Sweden; August 28-31, 2003.
13. de Wilde, M.C., Farkas, E., Luiten, P.G.M., Kiliaan, A.J. Fish oil fatty acids slow degenerative processes in Alzheimer's disease. *166th Annual Meeting of the Dutch Anatomical Society*, Zeist, The Netherlands; 2004.
14. Institóris, Á., Farkas, E., Domoki, F., Mihály, A., Bari, F. Diazoxide prevents microglia activation in experimental cerebral hypoperfusion. *IBRO International Workshop*, Budapest, Hungary; January 29-31, 2004.
15. Donka, G., de Vos, R.A.I., Luiten, P.G.M., Mihály, A., Farkas, E. Cerebral hypoperfusion induces white matter injury in the rat brain. *IBRO International Workshop*, Budapest, Hungary; January 29-31, 2004.
16. Farkas, I.G., Farkas, E., Dobó, E., Krisztin-Péva, B., Mihály A. Wirkung von TNF $\alpha$  und aktivierten T-Lymphozyten auf Mikroglia-Aktivierung im hippocampus der Ratte. *Anatomische Gesellschaft – 99. Versammlung, Anatomical Society of Great Britain and Ireland, Nederlandse Anatomen Vereniging, Sociedad Anatómica Espanola*. Wien, Austria; April 2-5, 2004.
17. Farkas, E.\*, Donka, G., Bari, F., Mihály, A., Luiten, P.G.M. White matter injury and microglial activation develop in the rat optic tract after carotid artery occlusion. *4th Forum of European Neuroscience*, Lisbon, Portugal; July 10-14, 2004.
18. Bari, F., Farkas E., Institóris, Á., Domoki, F., Mihály, A., Luiten P.G.M. Post-traumatic treatment with diazoxide and dimethyl sulphoxide prevents ischemic hippocampal damage in the rat brain. *4th Forum of European Neuroscience*, Lisbon, Portugal; July 10-14, 2004.

19. Farkas, E.\*, Antal, P., Tóth-Szűki, V., Farkas, I.G., Mihály, A., Bari, F. Circulating tumor necrosis factor- $\alpha$  alters cerebral blood flow and microvascular ultrastructure through nitric oxide release in the rat brain. *XXIInd International Symposium on Cerebral Blood Flow, Metabolism, and Function*, Amsterdam, The Netherlands; June 7-11, 2005.
20. B. Tóth, B., Farkas, E., Farkas, G. Retinal changes following acute pancreatitis induction in the rat. *15<sup>th</sup> Congress of the European Society of Ophthalmology*, Berlin, Germany; September 25-29, 2005.
21. Annaházi, A., Farkas, E., Mracskó, É., Institóris, Á., Süle, Z., Karg, E., Mihály, A., Penke, B., Bari, F. Systemic administration of alpha-tocopherol attenuates cerebral hypoperfusion-induced learning dysfunction in rats. *IBRO International Workshop*, Budapest, Hungary; January 26-28, 2006.
22. Institóris, Á., Farkas, E., Süle, Z., Annaházi, A., Bari, F. (2006) COX-2 inhibition prevents memory failure and neuronal death in cerebral hypoperfusion in rats. *IBRO International Workshop*, Budapest, Hungary; January 26-28, 2006.
23. Süle, Z., Tóth-Szűki, V., Antal, P., Mátyás, A., Mihály, A., Bari, F., Farkas, E. (2006) TNF- $\alpha$ -induced microvascular damage is mediated by nitrogen monoxide in the rat brain. *IBRO International Workshop*, Budapest, Hungary; January 26-28, 2006.
24. Farkas, E.\*, Annaházi, A., Karg, E., Penke, B., Bari, F. Alpha-tocopherol pretreatment attenuates cerebral hypoperfusion-induced learning dysfunction and neurodegeneration in rats. *5<sup>th</sup> Forum of European Neuroscience*, Wien, Austria; July 8-12, 2006.
25. Institóris, Á., Farkas, E., Süle, Z., Bari, F. COX-2 inhibition prevents memory failure and neuron loss in cerebral hypoperfusion in rats. *36<sup>th</sup> Annual Meeting of the Society for Neuroscience*, Atlanta, Georgia, U.S.A.; October 14-18, 2006.
26. Bari, F., Annaházi, A., Mracskó, É., Institóris, Á., Süle, Z., Farkas, E. Novel approaches to reduce the hypoperfusion-induced memory deficit and brain damage in rats. *Gordon Research Conference on Brain Energy Metabolism and Blood Flow*, Magdalen College, Oxford, United Kingdom; August 20-25, 2006.
27. Farkas, E.\*, Institóris, Á., Süle, Z., Bari F. Characterization of the effect of selective cyclooxygenase-2 inhibition in experimental cerebral hypoperfusion in rats. *British Neuroscience Association 19<sup>th</sup> National Meeting*, Harrogate, United Kingdom; April 1-4, 2007.
28. Süle, Z., Kovács, G.G., Mihály, A., Farkas, E., Microvascular aberrations in the white matter in Alzheimer's disease. *The Fifth International Congress on Vascular Dementia*, Budapest, Hungary; November 8-11, 2007.
29. Institóris, Á., Mracskó, É., Hügyecz, M., Berczi, S., Farkas, E., Bari, F. Changes in nitric oxide synthase (NOS), cyclooxygenase-2 (COX-2), superoxide dismutase (SOD) protein levels and cerebral autoregulatory capacity in the early and late phase of chronic cerebral hypoperfusion in rats. *IBRO International Workshop*, Debrecen, Hungary; January 24-26, 2008.
30. Süle, Z., Bari, F., Sántha, M., Bereczki, E., Mihály, A., Farkas, E. Ischemia-induced damage of cerebrocortical microvessels in apolipoprotein B-100 overexpressing transgenic mice fed with a cholesterol-enriched diet. *IBRO International Workshop*, Debrecen, Hungary; January 24-26, 2008.
31. Süle, Z., Bari, F., Sántha, M., Bereczki, E., Farkas, E. Capillary injury in the ischemic brain of hyperlipidemic, apolipoprotein b-100 transgenic mice. *25<sup>th</sup> Conference of the European Society for Microcirculation*, Budapest, Hungary; August 26-29, 2008.
32. Mracskó, É., Hügyecz, M., Farkas, E., Bari., F. Changes in nitric oxide synthase (NOS), cyclooxygenase-2 (COX-2), superoxide dismutase (SOD) protein levels in the early phase of chronic cerebral hypoperfusion in rats. *25<sup>th</sup> Conference of the European Society for Microcirculation*, Budapest, Hungary; August 26-29, 2008.
33. Institóris, Á., Hügyecz, M., Mracskó, É., Süle, Z., Berczi, S., Farkas, E., Domoki, F., Busija, D.W., Bari, F. Changes in prooxidant and antioxidant protein levels and autoregulatory capacity in chronic cerebral hypoperfusion in rats. *38<sup>th</sup> Annual Meeting of the Society for Neuroscience*, Washington, D.C., U.S.A.; November 15-19, 2008.
34. Farkas, E.\*, Lenti, L., Kemény, L., Obrenovitch, T.P., Bari, F. Evolution of cortical spreading depression is altered by aging and chronic cerebral hypoperfusion. *XXIVth International Symposium on Cerebral Blood Flow, Metabolism and Function*, Chicago, IL, U.S.A.; June 29-July 3, 2009.
35. Institóris, Á., Mracskó, É., Hügyecz, M., Mátyás, A., Süle, Z., Farkas, E., Bari, F. Changes in nitric oxide synthase (NOS), cyclooxygenase-2 (COX-2) and superoxide dismutase (SOD) protein levels in chronic cerebral hypoperfusion in rats. *XXIVth International Symposium on Cerebral Blood Flow, Metabolism and Function*, Chicago, IL, U.S.A.; June 29-July 3, 2009.
36. Farkas, E.\*, Bari, F., Obrenovitch, T.P. Multi-modal imaging of membrane potential and hemodynamic changes induced by cardiac arrest and subsequent anoxic depolarization in the rat cerebral cortex. *IBRO International Workshop*, Pécs, Hungary; January 21-23, 2010.
37. Farkas, E., Bari, F., Obrenovitch, T.P. multi-modal imaging of anoxic depolarization and hemodynamic variables during forebrain ischemia in rats. *9<sup>th</sup> World Congress for Microcirculation*, Paris, France; September 26-28, 2010.

38. Bere, Z., Kulmány, A., Obrenovitch, TP., Bari, F., Farkas, E. Characterization of global cerebral ischemia-induced peri-infarct depolarization (PID) with multimodal imaging in the rat brain. *XXVth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '11)*, Barcelona, Spain; May 24-28, 2011.
39. Institoris, A., Clark, D., Bere, Z., Farkas, E., Tuor, U.I., Bari, F. The impact of aging on peri-infarct depolarizations induced by focal cerebral ischemia in the rat brain. *XXVIth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '13)*, Shanghai, China; May 20-23, 2013.
40. Institoris, Á., Clark, D., Kozák, G., Farkas, E., Bari, F. Aging and peri-infarct depolarizations during and after ischemia in rat. *The 37th Congress of the International Union of Physiological Sciences*, Birmingham, United Kingdom, July 21-26, 2013.
41. Menyhárt, Á., Szepes, B., Bari, F., Farkas, E., The evolution of K<sup>+</sup>-evoked spreading depolarization shortly after carotid occlusion in the rat. *9<sup>th</sup> FENS Forum of Neuroscience*, Milan, Italy; July 5-9, 2014.
42. Menyhárt, Á., Szepes, B., M Tóth, O., Hertelendy, P., Bari, F., Farkas, E. The evolution of K<sup>+</sup>-evoked spreading depolarization shortly after carotid occlusion in young and aged rats. *Joint Meeting of the European Physiological Societies (FEPS) and the Hungarian Physiological Society*, Budapest, Hungary; August 27-30, 2014.
43. Puskás, T., Zölei-Szénási, D., Menyhárt, Á., Bari, F., Farkas, E. Digital optical signal processing of cerebral pH and hemodynamic variables in a rat cerebral ischemia model. *Romanian-Hungarian Medical Education Days*, Timisoara, Romania, April 15-17, 2015.
44. Menyhárt, Á., Zölei-Szénási, D., Puskás, T., M. Tóth, O., Szepes, B., Hertelendy, P., Bari, F., Farkas, E. Optical imaging of intracellular pH changes with spreading depolarization in the intact and ischemic rat brain. *XXVIIth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '15)*, Vancouver, Canada, June 27-30, 2015.
45. Hertelendy, P., Menyhárt, Á., Kiss, T., Tóth, G., Ungvári, Z., Bari, F., Farkas, E. Elicitation threshold of cortical spreading depolarization increases with brain maturation and ischemia. *XXVIIth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '15)*, Vancouver, Canada, June 27-30, 2015.
46. Tarantini, S., Tucsek, Z., Valcarcel-Ares, M., Nataliya, S., Farkas, E., Hodges, E., Towner, R., Deak, F., Sonntag, W., Csiszar, A., Toth, P., Ungvari, Z. Experimental neurovascular uncoupling promotes cognitive impairment in mice: implications for brain and cerebrovascular aging. *XXVIIIth International Symposium on Cerebral Blood Flow, Metabolism and Function (Brain '15)*, Vancouver, Canada, June 27-30, 2015.
47. Hertelendy, P., Valcarcel-Ares, M.N., Tarantini, S., Tucsek, Z., Gautam, T., Farkas, E., Ungvari, Z., Csiszar, A. High-fat diet induced neurovascular uncoupling is exacerbated by Nrf2 deficiency in mice, mimicking the aging phenotype. *IBRO International Workshop*, Budapest, Hungary, January 21-22, 2016.
48. Kiss, T., Hertelendy, P., Menyhárt, Á., Süle, Z., Ivánkovits-Kiss, O., Tóth, G., Bari, F., Farkas, E. Advancing age and ischemia elevate the electric threshold to elicit spreading depolarization in the cerebral cortex of young adult rats. *IBRO International Workshop*, Budapest, Hungary, January 21-22, 2016.
49. Menyhárt, Á., Zölei-Szénási, D., Puskás, T., M. Tóth, O., Szepes, B., Tóth, R., Bari, F., Farkas, E. Optical imaging of intracellular pH changes with spreading depolarization in the intact and ischemic rat brain. *IBRO International Workshop*, Budapest, Hungary, January 21-22, 2016.
50. Makra, P., Menyhárt, Á., Hertelendy, P., Bari, F., Farkas, E. Time-dependent spectral profiles of the electrocorticogram during cortical spreading depolarization. *IBRO International Workshop*, Budapest, Hungary, January 21-22, 2016.
51. Puskás, T., Tóth, R., Menyhárt, Á., Ivánkovits-Kiss, O., Bari, F., Farkas, E. In vitro examination of spreading depolarizations: establishing a new experimental setup and protocol. *IBRO International Workshop*, Budapest, Hungary, January 21-22, 2016.
52. Varga, D., Menyhárt, Á., Farkas, E., Bari, F., Kis, Z., Toldi, J., Gellért, L. Monitoring the impact of a high-dose L-Kynurenine sulphate treatment on resting cerebral blood flow in adult C57Bl/6 mice. *IBRO International Workshop*, Budapest, Hungary, January 21-22, 2016.
53. Menyhárt, Á., Zölei-Szénási, D., Puskás, T., Makra, P., M. Tóth, O., Szepes, B., Tóth, R., Ivánkovits-Kiss, O., Bari, F., Farkas, E. Ischemia and aging alter spreading depolarization-related tissue acidosis in the rat cerebral cortex. *10<sup>th</sup> FENS Forum of Neuroscience*, Copenhagen, Denmark; July 2-6, 2016.
54. Varga D.P., Puskás, T., Menyhárt, Á., Zölei-Szénási, D., M. Tóth, O., Szepes, B., Tóth, R., Bari, F., Farkas, E. Cyclooxygenase-2 contributes to the evolution of hyperemia in response to spreading depolarization in the intact and ischemic rat brain. *10<sup>th</sup> FENS Forum of Neuroscience*, Copenhagen, Denmark; July 2-6, 2016.
55. Hertelendy, P., Menyhárt, Á., Makra P., Süle Z., Kiss T., Tóth G., Ivánkovits-Kiss, O., Bari, F., Farkas, E. Advancing age and ischemia elevate the electric threshold to elicit spreading depolarization in the

cerebral cortex of young adult rats. *10<sup>th</sup> FENS Forum of Neuroscience*, Copenhagen, Denmark; July 2-6, 2016.

56. Bari, F., Varga, D.P., Menyhárt, Á., Puskás, T., Zölei-Szénási, D., Farkas, E. Cyclooxygenase-2 mediates the hyperemic response to spreading depolarization in the rat brain. *Joint Meeting of the European Physiological Societies (FEPS) and the French Physiological Society*, Paris, Hungary; June 29- July 1, 2016.

*National (Hungarian) conference abstracts:*

*Invited speaker:*

1. Farkas, E.\* The TNF $\alpha$ -induced increase in cerebral blood flow and blood-brain barrier damage are nitric oxide-dependent in the rat brain. *10<sup>th</sup> Hungarian Conference on Alzheimer's Disease and Related Disorders*, Szeged, Hungary; September 20-22, 2006.
2. Farkas, E.\* Neuroprotective strategies in experimental, chronic, cerebral hypoperfusion. *The 11<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Szeged, Hungary; January 25-27, 2007.
3. Farkas, E.\*, Bari, F. Agyérbetegségek és gyógyszeres terápia. Az állatkísérletek indokoltsága. *A Magyar Orvosok és Gyógyszerészek VII. Világtalálkozója*, Budapest, Hungary; August 22-25, 2010.
4. Farkas, E.\* Imaging of spreading depolarizations in the rat cerebral cortex. *II. Pécs-Oklahoma Symposium (II. POS)*, Pécs, Hungary; December 19, 2013.
5. Farkas, E.\*, Menyhárt, Á., Zölei-Szénási, D., Puskás, T., Bari, F. Az agykérgi kúszó depolarizációval járó pH változások vizsgálata az ischemiás patkányban. *The LXXIX<sup>th</sup> Annual Meeting of the Hungarian Physiological Society (MÉT)*, Szeged, Hungary, May 27-30. 2015.
6. Farkas, E.\*, Kúszó depolarizációk kórélettani jelentősége ischemiás agysérülésben. a Magyar Stroke Társaság XII. Konferenciája és a Magyar Neurosonológiai Társaság IX. Konferenciája, Sopron, Hungary; September 17-19, 2015.
7. Farkas, E.\*, Varga, D.P., Menyhárt, Á., Puskás, T., Hertelendy, P., Zölei-Szénási, D., Tóth, R., Ivánkovits-Kiss, O., Bari, F. Do cyclooxygenase enzyme products regulate functional hyperemia associated with spreading depolarization? *A Magyar Farmakológiai, Anatómus, Mikrocirkulációs és Élettani Társaságok Közös Tudományos Konferenciája (FAMÉ 2016)*, Pécs, Hungary; June 1-4, 2016.

*Talks:*

1. Farkas, E.\*, de Vos, R.A.I. and Luiten, P.G.M Cerebral microvascular pathology in Alzheimer's disease – What are the potential risk factors? *5<sup>th</sup> Hungarian Conference on Alzheimer's Disease and Related Disorders*, Pécs, Hungary; October 26-28, 2000.
2. Farkas, E.\*, de Wilde, M.C. and Luiten, P.G.M. The prevention of age-related cerebrovascular changes with calcium antagonists and dietary supplements. Satellite Symposium coupled to the *The 8<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Szeged, Hungary; January 24-27, 2001.
3. Farkas, E.\*, Donka, G., Krisztin-Péva, B., de Vos, R.A.I., Mihály, A., Luiten, P.G.M. Az agyi fehérállomány öregedéssel és demenciával járó hisztopathológiai elváltozásai. *XII. Anatómus Kongresszus*, Budapest, Hungary; June 19-21, 2003.
4. Farkas, I.G., Farkas, E., Czigner, A., Dobó, E., Endrész, V., Mihály, A. A vér-agy gát funkcionális és strukturális változásai tumor necrosis factor alpha hatására *XII. Anatómus Kongresszus*, Budapest, Hungary; June 19-21, 2003.
5. Farkas, E.\*, Hőgyes, E., de Wilde M.C., Kiliaan, A.J., Farkas, T., Luiten, P.G.M. N-3 zsírsavakban gazdag diéták hatása hipertenzív patkányok tanulására. *A Magyar Élettani Társaság LXVIII. Vándorgyűlése*, Pécs, Hungary; June 2-4, 2003.
6. Farkas, E.\*, Instítóris, Á., Domoki, F., Mihály, A., Bari, F. A diazoxid elő- és utókezelés hatása krónikus agyi ischemia korai és késői szakaszában, patkányban. *XIII. Anatómus Kongresszus*, Pécs, Hungary; June 17-18, 2005.
7. Annaházi, A., Instítóris, Á., Mihály, A., Bari, F., Farkas, E. A diazoxid hatása a tanulási zavarra és gliareakciókra krónikus agyi hipoperfúzióban. *A Magyar Élettani Társaság LXIX. Vándorgyűlése*, Budapest, Hungary; June 2-4, 2005.
8. B.Tóth, B., Farkas, E., Farkas, G. Morfológiai változások a retinában akut pancreatitis indukciót követően állatmodellben. *A Magyar Szemorvos Társaság Kongresszusa*, Szeged, Hungary; June 9-11, 2005.
9. Farkas, E.\*, Antal, P., Tóth-Szúki, V., Bari, F. Patkányban a tumor nekrosis faktor- $\alpha$  nitrogén-monoxid felszabadulásán keresztül növeli az agykérgi véráramlást. Pécsi Angiológiai Napok - A Magyar Angiológiai és Érsebészeti Társaság és a Magyar Cardiovascularis és Intervenciós Radiológiai Társaság közös kongresszusa, Pécs, Hungary; October 12-14, 2005.
10. Instítóris, Á., Farkas, E., Berczi, S., Bari, F. Patkányban a ciklooxygenáz (COX)-2 gátlása kivédi az agyi hipoperfúzió által okozott memóriakárosodást és neuron pusztulást. *A Magyar Élettani Társaság LXX. Vándorgyűlése*, Szeged, Hungary; June 7-9, 2006.

11. Mracskó, É., Farkas, E., Süle, Z., Penke, B., Karg, E., Bari, F. Az alfa-tocopherol kezelés csökkenti a krónikus agyi hipoperfúzió okozta idegi károsodást patkányban. *A Magyar Élettani Társaság LXX. Vándorgyűlése*, Szeged, Hungary; June 7-9, 2006.
12. Institoris, Á., Farkas, E., Berczi, S., Süle, Z., Bari, F. A ciklooxygenáz (COX) – gátlás memória-károsodásra és neurodegenerációra gyakorolt hatása agyi hipoperfúzióban. *A Magyar Élettani Társaság LXXI. Vándorgyűlése*, Pécs, Hungary; June 6-8, 2007.
13. Farkas, E.\*, Obrenovitch, T.P., Bari, F. Az öregedés hatása a kísérletesen kiváltott tovaterjedő agykérgi depolarizáció (CSD) kinetikájára. *A Magyar Élettani Társaság LXXIII. Vándorgyűlése*, Budapest, Hungary. August 27-29, 2009.
14. Farkas, E.\*, Obrenovitch, T.P., Bari, F. Simultaneous, live imaging of cortical spreading depression and associated hemodynamic changes, by combining voltage-sensitive dye and laser speckle contrast methods. *Neuroimaging Workshop*, Szeged, Hungary. March 19-20, 2010.
15. Farkas, E.\*, Bari, F. Az öregedő agy mikrokeringése – kísérletes állatmodellek. *A Magyar Élettani Társaság LXXIV. Vándorgyűlése*, Szeged, Hungary. June 16-18, 2010.
16. Bere, Z., Kulmány, A., Obrenovitch, T.P., Bari, F., Farkas, E. Peri-infarktus depolarizáció vizsgálata többkomponensű képkötő eljárással patkányban. *A Magyar Élettani Társaság LXXIV. Vándorgyűlése*, Szeged, Hungary. June 16-18, 2010.
17. Hügycz, M., Mracskó, É., Hertelendy, P., Farkas, E., Bari F. A hidrogén protektív hatása tranzienst globális iszkémiát (tgi) követően patkány hippocampusban. *A Magyar Élettani Társaság LXXIV. Vándorgyűlése*, Szeged, Hungary. June 16-18, 2010.
18. Bere, Z., Kulmány, A., Obrenovitch, T. P., Bari, F., Farkas, E. Characterisation of multifocal ischemia induced cortical spreading depressions with multimodal imaging method in rat. *75th Conference of Hungarian Physiology Society and 2th Conference of Hungarian Experimental and Clinical Pharmacology Society*, Pécs, Hungary, June 9-11, 2011.
19. Bari, F., Bere, Z., Kulmány, A., Obrenovitch, T.P., Farkas, E. Multifokális iszkémia által kiváltott agykérgi periinfarktus depolarizációk jellemzése többkomponensű képkötő eljárással patkányban. *Magyar Stroke Társaság X. Konferenciája*, Miskolc, Hungary, September 29-October 1, 2011.
20. Bari, F., Farkas, E., Busija, D.W., Domoki, F. Neurovascular coupling in the injured brain. *75th Anniversary of Albert Szent-Györgyi's Nobel Prize Award*, Szeged, Hungary, 22-25 March, 2012.
21. Bere, Z., Kozák, G., Obrenovitch, T.P., Bari, F., Farkas, E. Multifokális iszkémia során megjelenő periinfarktus depolarizációk jellemzése többkomponensű képkötő eljárással patkányban. *A Magyar Élettani Társaság Vándorgyűlése*, Debrecen, Hungary. June 10-13, 2012.
22. Institoris, Á., Clark, D., Bere, Z., Kozák, G., Farkas, E., Bari, F. Az öregedés hatása a fokális iszkémiát kísérő agykérgi potenciál- és hemodinamikai változásokra. *A Magyar Élettani, Farmakológiai és Mikrocirkulációs Társaságok közös Tudományos Kongresszusa, A Magyar Élettani Társaság 77. Vándorgyűlése*, Budapest, Hungary, June 5-8, 2013.
23. Menyhárt, Á., Makra, P., Szepes, B., M. Tóth, O., Hertelendy, P., Bari, F. Farkas, E. Káliummal kiváltott agykérgi kúszó depolarizációk jellemzése fiatal és idős patkányban, globális előagyi iszkémiában. *The LXXIXth Annual Meeting of the Hungarian Physiological Society (MÉT)*, Szeged, Hungary, May 27-30. 2015.
24. Csiszar, A., Toth, P., Tarantini, S., Ashpole, N.M., Tucsek, Z., Milne, G.L., Valcarcel-Ares, M.N., Menyhárt, Á., Farkas, E., Sonntag, W.E., Ungvari, Z. IGF-1 deficiency impairs neurovascular coupling in mice: implications for cerebrovascular aging. *The LXXIXth Annual Meeting of the Hungarian Physiological Society (MÉT)*, Szeged, Hungary, May 27-30. 2015.
25. Menyhárt, Á., Zölei-Szénási, D., Puskás, T., M. Tóth, O., Szepes, B., Hertelendy, P., Bari, F., Farkas, E. Spontaneous spreading depolarization augments tissue acidosis in the ischemic rat brain. *A Magyar Farmakológiai, Anatómus, Mikrocirkulációs és Élettani Társaságok Közös Tudományos Konferenciája (FAMÉ 2016)*, Pécs, Hungary; June 1-4, 2016.

#### Posters:

1. Farkas, E.\*, Donka, G., de Vos, R.A.I., Mihály, A., Luiten, P.G.M. Ultrastructural changes of the cerebral periventricular white matter in aging and dementia. *The 9th Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Balatonfüred, Hungary; January 23-25, 2003.
2. Högyes, E., de Wilde, M.C., Kiliaan, A.J., Farkas, T., Luiten, P.G.M., Farkas, E. Dietary N-3 PUFAs alter blood pressure and brain fatty acid content of SHR rats. *The 9th Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Balatonfüred, Hungary; January 23-25, 2003.
3. Annaházi, A., Mihály, A., Bari, F., Farkas, E. Diazoxide and dimethyl sulphoxide reduces chronic cerebral hypoperfusion induced glial reaction in the rat white matter. *The 10th Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Pécs, Hungary; January 26-29, 2005.
4. Institoris, Á., Farkas, E., Domoki, F., Mihály, A., Bari, F. The effect of diazoxide on the early phase of chronic cerebral hypoperfusion in rats. *The 10th Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Pécs, Hungary; January 26-29, 2005.

5. Timmer, N.M., Farkas, E.\*, Luiten, P.G.M., Mihály, A., Bari, F. Post-ischemic administration of diazoxide does not prevent chronic ischemia-related memory impairment, but attenuates microglial activation in the rat brain. *The 10<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Pécs, Hungary; January 26-29, 2005.
6. Süle, Z., Kovács, G.G., Mihály, A., Farkas, E. Fehérállományi mikroér elváltozások Alzheimer-kórban. *The 11<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Szeged, Hungary; January 25-27, 2007.
7. Instítóris, Á., Farkas, E., Berczi, S., Süle, Z., Bari, F. Ciklooxigenáz (COX) gátlók hatása agyi hipoperfúziós modellben patkányban. *The 11<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Szeged, Hungary; January 25-27, 2007.
8. Süle, Z., Kovács, G.G., Mihály, A., Farkas, E. Fehérállományi mikroér elváltozások Alzheimer-kórban. A Magyar Élettani Társaság LXXI. Vándorgyűlése, Pécs, Hungary; June 6-8, 2007.
9. Mracskó, É., Farkas, E., Annahazi, A., Vatai, B., Krecsmarik, M., Hugyecz, M., Karg, E., Penke, B., Bari, F. Az alfa-tocopherol kezelés csökkenti az agyi hipoperfúzió idegkárosító hatását patkányban. *Magyar Szabadgyök Kutató Társaság IV. Konferenciája*, Pécs, Hungary; October 11-13, 2007.
10. Farkas, E.\*, Obrenovitch, T.P. Dual imaging of cerebral blood flow and intracellular pH changes associated with cortical spreading depression. *The 12<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Budapest, Hungary; January 22-24, 2009.
11. Mracskó, É., Hugyecz, M., Instítóris, Á., Farkas, E., Bari, F. Changes in Nitric Oxide Synthase (NOS), Cyclooxygenase-2 (COX-2) and Superoxide Dismutase (SOD) Protein Levels in Chronic Cerebral Hypoperfusion in Rats. *The 12<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Budapest, Hungary; January 22-24, 2009.
12. Mracskó, É., Hugyecz, M., Instítóris, Á., Farkas, E., Bari, F. Krónikus agyi hipoperfúzió hatása prooxidáns és antioxidáns enzimek expressziójára patkányban. *A Magyar Élettani Társaság LXXIII. Vándorgyűlése*, Budapest, Hungary. August 27-29, 2009.
13. Bere, Z., Kulmány, A., Obrenovitch, T.P., Bari, F., Farkas, E. Characterization of periinfarct depolarisation (PID) with multimodal imaging method during global forebrain ischemia in rat cerebrcortex. *The 13<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Budapest, Hungary; January 20-22, 2011.
14. László, A., Kozák, G., Instítóris, Á., Farkas, E., Bari, F. Az agykérgi mikrocirkulációs sebességprofilok változása multifokális kísérletes iszkémiában. *A Magyar Stroke Társaság XI. Kongresszusa*, Nyíregyháza, Hungary; September 5-7, 2013.
15. Hertelendy, P., Menyhárt, Á., Kiss, T., Tóth, G., Bari, F., Farkas, E. The electrical threshold to trigger cortical spreading depolarization is altered by brain maturation and ischemia. *The 15<sup>th</sup> Annual Meeting of the Hungarian Neuroscience Society (MITT)*, Budapest, Hungary; January 22-23, 2015.
16. Puskás, T., Zölei-Szénási, D., Menyhárt, Á., Bari, F., Farkas, E. Kísérletes képpalkotó eljárással rögzített optikai jelek feldolgozása. *The LXXIX<sup>th</sup> Annual Meeting of the Hungarian Physiological Society (MÉT)*, Szeged, Hungary, May 27-30. 2015.

*Popularizing science:*

*Talks:*

1. A stroke betegség - kutatói pálya, friss eredmények. Szegedi Közéleti Kávéház, Szeged, Hungary, May 19, 2016.
2. Tudáspresszó, Nyíregyháza, Hungary, May 24, 2016.

*Written press:*

1. Interjú Farkas Eszterrel - Kúszó depolarizáció az agykéregben. *Élet és Tudomány: A hét kutatója* rovat. LXX. évfolyam, 43. szám, 1358-1359, 2015. október 23.  
online: [http://www.eletestudomany.hu/kuszo\\_depolarizacio\\_az\\_agykeregben](http://www.eletestudomany.hu/kuszo_depolarizacio_az_agykeregben)
2. A stroke nem válogat. *Délmagyarország*. 2016. május 10., 9. oldal