

Pavel Zelenin - LIST OF PUBLICATIONS

Original papers in international refereed journals

1. Panchin Y. V., Popova L. B., Pavlova G. A., **Zelenin P. V.**, Arshavsky Y. I. Formation of connections between cultured neurons from pleural ganglion of the pteropod mollusc *Clione limacina*, *Brain Res.*, 669: 315-319, 1995.
2. Panchin Y. V., **Zelenin P. V.**, Popova L. B. Regeneration of central and peripheral synaptic connections in the locomotor system of the pteropod mollusc *Clione limacina*. *Invert. Neurosci.*, 3: 27-40, 1997.
3. **Zelenin P. V.**, Panchin Y.V. Selective regeneration of the neuromuscular connections in the pteropod mollusc *Clione limacina*. *Eur. J. Neurosci.*, 11: 1800-1808, 1999.
4. Popova L. B., **Zelenin P. V.**, Panchin Y. V. Axotomized neurons of the pteropod mollusk *Clione limacina* develop novel sites of transmitter release in the absence of their normal muscle target. *Comp. Biochem. Physiol. C: Pharmacol Toxicol Endocrinol.*, 123: 185-191, 1999.
5. **Zelenin P. V.**, Panchin Y. V. Projection pattern and target selection of *Clione limacina* motoneurons sprouting within an intact environment. *J. Comp. Neurol.*, 423: 220-226, 2000.
6. Deliagina T. G., **Zelenin P. V.**, Fagerstedt P., Grillner S., Orlovsky G. N. Activity of reticulospinal neurons during locomotion in the freely behaving lamprey. *J. Neurophysiol.*, 83: 853-863, 2000.
7. Kozlov A. K., Aurell E., Orlovsky G. N., Deliagina T. G., **Zelenin P. V.**, Hellgren-Kotaleski J., Grillner S. Modelling control of roll-plane body orientation in lamprey. *Neurocomputing*, 32: 871-877, 2000.
8. Fagerstedt P., **Zelenin P. V.**, Deliagina T. G., Orlovsky G. N., Grillner S. Crossed reciprocal inhibition evoked by electrical stimulation of the lamprey spinal cord. *Exp. Brain Res.*, 134: 147-154, 2000.
9. **Zelenin P. V.**, Deliagina T. G., Grillner S., Orlovsky G. N. Postural control in the lamprey – a study with a neuro-mechanical model. *J. Neurophysiol.*, 84: 2880-2887, 2000.
10. Kozlov A. K., Aurell E., Orlovsky G. N., Deliagina T. G., **Zelenin P. V.**, Hellgren-Kotaleski J., Grillner S. Modeling postural control in the lamprey. *Biol. Cybern.*, 84: 323-330, 2001.
11. **Zelenin P. V.**, Grillner S., Orlovsky G. N., Deliagina T. G. Heterogeneity of the population of command neurons in the lamprey. *J. Neurosci.*, 21: 7793-7803, 2001.
12. **Zelenin P. V.**, Grillner S., Orlovsky G. N., Deliagina T. G. The pattern of motor coordination underlying the roll in the lamprey. *J. Exp. Biol.*, 206: 2557-2566, 2003.
13. **Zelenin P. V.**, Pavlova E. L., Grillner S., Orlovsky G. N., Deliagina T. G. Comparison of the motor effects of individual vestibulo- and reticulospinal neurons on dorsal and ventral myotomes in lamprey. *J. Neurophysiol.*, 90: 3161-3167, 2003.
14. Beloozerova I. N., **Zelenin P. V.**, Popova L. B., Orlovsky G. N., Grillner S., Deliagina T. G. Postural control in the rabbit maintaining balance on the tilting platform. *J. Neurophysiol.*, 90: 3783-3793, 2003.
15. **Zelenin P. V.** Activity of individual reticulospinal neurons during different forms of locomotion in the lamprey. *Eur. J. Neurosci.*, 22: 2271-2282, 2005.
16. Lyalka V. F., **Zelenin P. V.**, Karayannidou A., Orlovsky G. N., Grillner S., Deliagina T. G. Impairment and recovery of postural control in rabbits with spinal cord lesions. *J. Neurophysiol.*, 94: 3677-3690, 2005.
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18. Islam S. S., **Zelenin P. V.**, Orlovsky G. N., Grillner S., Deliagina T. G. The pattern of motor coordination underlying backward swimming in the lamprey. *J. Neurophysiol.*, 96: 451-460, 2006.
19. Karayannidou A., Orlovsky G. N., **Zelenin P. V.**, Deliagina T. G. Responses of reticulospinal neurons in the lamprey to lateral turns. *J. Neurophysiol.*, 97: 512-521, 2007.
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21. Islam S. S., **Zelenin P. V.** Modifications of locomotor pattern underlying escape behavior in the lamprey. *J. Neurophysiol.*, 99: 297-307, 2008.
22. Karayannidou A., Deliagina T. G., Tamarova Z. A., Sirota M. G., **Zelenin P. V.**, Orlovsky G. N., Beloozerova I. N. Influences of sensory input from the limbs on feline corticospinal neurons during postural responses. *J. Physiol.*, 586: 247-263, 2008.
23. Musienko P. E., **Zelenin P. V.**, Lyalka V. F., Orlovsky G. N., Deliagina T. G. Postural performance in decerebrated rabbit. *Behav. Brain Res.*, 190: 124-134, 2008.
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26. Musienko P. E., **Zelenin P. V.**, Orlovsky G. N., Deliagina T. G. Facilitation of postural limb reflexes with epidural stimulation in spinal rabbits. *J. Neurophysiol.*, 103: 1080-1092, 2010.
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28. **Zelenin P. V.** Reticulospinal neurons controlling forward and backward swimming in the lamprey. *J. Neurophysiol.*, 105: 1361-1371, 2011.
29. **Zelenin P. V.**, Deliagina T. G., Orlovsky G. N., Karayannidou A., Dasgupta N. M., Sirota M. G., Beloozerova I. N. Contribution of different limb controllers to modulation of motor cortex neurons during locomotion. *J. Neurosci.*, 31: 4636-4649, 2011.
30. **Zelenin P. V.**, Deliagina T. G., Orlovsky G. N., Karayannidou A., Stout E. E., Sirota M. G., Beloozerova I. N. Activity of motor cortex neurons during backward locomotion. *J. Neurophysiol.*, 105: 2698-2714, 2011.
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36. Hsu L.-J., **Zelenin P. V.**, Grillner S., Orlovsky G. N., Deliagina T. G. Intraspinal stretch receptor neurons mediate different motor responses along the body in lamprey. *J. Comp. Neurol.*, 521: 3847-3862, 2013.
37. **Zelenin P. V.**, Lyalka V. F., Hsu L.-J., Orlovsky G. N., Deliagina T. G. Effects of reversible spinalization on individual spinal neurons. *J. Neurosci.*, 33: 18987-18998, 2013.
38. Hsu L.-J., Orlovsky G. N., **Zelenin P. V.** Different forms of locomotion in the spinal lamprey. *Eur. J. Neurosci.*, 39: 2037-2049, 2014.
39. Musienko P. E., Deliagina T. G., Gerasimenko Y. P., Orlovsky G. N., **Zelenin P. V.** Limb and trunk mechanisms for balance control during locomotion in quadrupeds. *J. Neurosci.*, 34: 5704-5716, 2014.
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44. Hsu L.-J., **Zelenin P. V.**, Lyalka V. F., Vemula M. G., Orlovsky G. N., Deliagina T. G. Neural mechanisms of single corrective steps evoked in the standing rabbit. *Neuroscience*, 347: 85-102, 2017.
45. Pirkmajer S., Kirchner H., Lundell L., **Zelenin P. V.**, Zierath J., Makarova K. S., Wolf Y. I., Chibalin A. V. Early vertebrate origin and diversification of small transmembrane regulators of cellular ion transport. *J. Physiol.*, 595: 4611-4630, 2017.
46. Merkulyeva N., Veshchitskii A., Gorsky O., Pavlova N., **Zelenin P. V.**, Gerasimenko Y., Deliagina T. G., Musienko P. Distribution of spinal neuronal networks controlling forward and backward locomotion. *J. Neurosci.*, 38: 4695-4707, 2018.
47. **Zelenin P. V.**, Lyalka V. F., Orlovsky G. N., Deliagina T. G. Changes in activity of spinal postural networks at different time points after spinalization. *Front. Cell. Neurosci.*, 13: 387, 2019. <https://doi.org/10.3389/fncel.2019.00387>
48. Hadjab S., Lallemand F., Wang Y., Wu H., **Zelenin P.**, Fontanet P., Wanderoy S., Petitpre C., Comai G., Huettl R.-E., Huber Brosamle A., Bellartida C., Xue-Franzen Y., Tajbakhsh S., Kiehn O., Ernfors P., Deliagina T. Muscle-selective RUNX3 dependence of sensorimotor circuit development. *Development*, 146: dev181750, 2019. doi: 10.1242/dev.181750
49. Vemula M. G., Deliagina T. G., **Zelenin P. V.** Kinematics of forward and backward locomotion performed in different environmental conditions. *J. Neurophysiol.*, 122 2142-2155, 2019.

50. Musienko P. E., Lyalka V. F., Gorskii O. V., Merkulyeva N., Gerasimenko Y. P., Deliagina T. G., **Zelenin P. V.** Comparison of operation of spinal locomotor networks activated by supraspinal commands and by epidural stimulation of the spinal cord in cats. *J. Physiol.*, 598: 3459-3483, 2020.
51. **Zelenin P. V.**, Vemula M. G., Lyalka V. F., Kiehn O., Talpalar A., Deliagina T.G. Differential contribution of V0 interneurons to execution of rhythmic and non-rhythmic motor behaviors. *J. Neurosci.* 2021 (in press; DOI: <https://doi.org/10.1523/JNEUROSCI.1979-20.2021>).

Reviews

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2. Deliagina T. G., Orlovsky G. N., **Zelenin P. V.**, Beloozerova I. N. Neural bases of postural control. *Physiology*, 21: 216-225, 2006.
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5. Deliagina T. G., **Zelenin P. V.**, Orlovsky G. N. The Lamprey Postural Circuit. Chapter 38 in: *Handbook of Brain Microcircuits* (eds. G. Shepherd and S. Grillner), Oxford University Press, 2010.
6. Deliagina T. G., **Zelenin P. V.**, Orlovsky G. N. Physiological and circuit mechanisms of postural control. *Curr. Opin. Neurobiol.*, 22: 646-652, 2012.
7. Deliagina T. G., Beloozerova I. N., Orlovsky G. N., **Zelenin P. V.** Contribution of supraspinal systems to generation of automatic postural responses. *Front. Integr. Neurosci.*, 8, 1-20, 2014.
8. Deliagina T. G., Musienko P. E., **Zelenin P. V.** Nervous mechanisms of locomotion in different directions. *Curr. Opin. Physiol.*, 8: 7-13, 2019.

Abstracts

1. **Zelenin P. V.**, Arshavsky Y. I., Panchin Y. V., Pavlova G. A., Popova L.B. Control of formation of connections between identified neurons of *Clione limacina* in culture. *Abstracts of regional meeting of the International Society for Invertebrate Neurobiology*, p.53, Puschino (Russia). 1994.
2. Popova L. B., Panchin Y. V., Pavlova G. A., **Zelenin P. V.**, Sadreev R. I. Formation of synaptic connections in the pteropodal mollusc *Clione limacina*: regeneration and cell culture studies. *Abstracts of International Symposium on Intercellular Communications*, Puschino (Russia). 1994.
3. Panchin Y. V., Popova L. B., **Zelenin P. V.**, Sadreev R. I. Formation of synaptic connections in the pteropodal mollusc *Clione limacina*: regeneration and cell culture studies. *Society for Neuroscience Abstracts*. Vol.21, part 3, p.1799. 707.17. 1995.
4. Panchin Y. V., **Zelenin P. V.**, Popova L. B. Regeneration of the neuromuscular connections in the locomotory system of the pteropod mollusc *Clione limacina*. *Society for Neuroscience Abstracts*. Vol.22, part 1, p.654. 259.3. 1996.
5. Panchin Y. V., Popova L. B., **Zelenin P. V.**, Kelmanson I. V., Korshunova T. A. and Sadreyev R. I. White Sea mollusc *Clione limacina* as a model object for studying formation of neural connections in simple nervous system of adult animal. *Materials of international conference "Ecological studies of the White Sea organisms"*. 59-60. 1997.
6. **Zelenin P. V.**, Panchin Y. V., Popova L. B. Regeneration and synapse formation of the neuromuscular connections in marine mollusc *Clione limacina*. *Abstracts of the 5th East European conference of the International Society for Invertebrate Neurobiology*, p.98, Moscow (Russia). 1997.
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8. **Zelenin P. V.**, Ullen F., Fagerstedt P., Deliagina T. G., Orlovsky G. N., Grillner S. Control of lateral turns in lamprey. *Society for Neuroscience Abstracts*, Vol.23, part 1, p.765. 299.15. 1997.
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16. **Zelenin P. V.**, Orlovsky G. N., Deliagina T. G. Activity of reticulospinal neurons during undulatory and non-undulatory locomotion in lamprey. *Soc. Neurosci. Abstr.*, Vol. 29, 499.2, 2003.
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22. Karayannidou A., Orlovsky G. N., **Zelenin P. V.**, Deliagina T. G. Responses of descending neurons in the lamprey to lateral turns. *Soc. Neurosci. Abstr.*, Vol. 31, 168.4, 2005.
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28. **Zelenin P. V.**, Orlovsky G. N., Deliagina T. G. Activity of reticulospinal neurons during forward and backward locomotion in lamprey. *Soc. Neurosci. Abstr.*, Vol. 35, 662.1, 2009.
29. Lyalka V. F., Karayannidou A., **Zelenin P. V.**, Orlovsky G. N., Deliagina T. G. Facilitation of postural limb reflexes in spinal rabbits. *Soc. Neurosci. Abstr.*, Vol. 35, 766.13, 2009.
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31. **Zelenin P. V.**, Orlovsky G. N., Deliagina T. G. Activity of reticulospinal neurons during forward and backward locomotion in lamprey. *FENS satellite symposium on Motor Control*. 2010.
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