

References

- Absalom, N. L., Schofield, P. R., & Lewis, T. M. (2009). Pore structure of the Cys-loop ligand-gated ion channels. *Neurochemical Research*, *34*(10), 1805–1815.
- Ahmadi, S., Muth-Selbach, U., Lauterbach, A., Lipfert, P., Neuhuber, W. L., & Zeilhofer, H. U. (2003). Facilitation of spinal NMDA receptor currents by spillover of synaptically released glycine. *Science*, *300*(5628), 2094–2097.
- Andermann, F., Keene, D. L., Andermann, E., & Quesney, L. F. (1980). Startle disease or hyperekplexia: Further delineation of the syndrome. *Brain*, *103*(4), 985–997.
- Aprison, M. H., & Werman, R. (1965). The distribution of glycine in cat spinal cord and roots. *Life Sciences*, *4*(21), 2075–2083.
- Baer, K., Waldvogel, H. J., Faull, R. L., & Rees, M. I. (2009). Localization of glycine receptors in the human forebrain, brainstem, and cervical spinal cord: An immunohistochemical review. *Frontiers in Molecular Neuroscience*, *2*, 25.
- Chung, S. K., Vanbellinghen, J. F., Mullins, J. G., Robinson, A., Hantke, J., & Hammond, C. L., et al. (2010). Pathophysiological mechanisms of dominant and recessive GLRA1 mutations in hyperekplexia. *Journal of Neuroscience*, *30*(28), 9612–9620.
- Darstein, M., Landwehrmeyer, G. B., Kling, C., Becker, C. M., & Feuerstein, T. J. (2000). Strychnine-sensitive glycine receptors in rat caudatoputamen are expressed by cholinergic interneurons. *Neuroscience*, *96*(1), 33–39.
- Davidoff, R. A., Shank, R. P., Graham, L. T., Jr, Aprison, M. H., & Werman, R. (1967). Association of glycine with spinal interneurons. *Nature*, *214*(5089), 680–681.
- Davies, J. S., Chung, S. K., Thomas, R. H., Robinson, A., Hammond, C. L., & Mullins, J. G., et al. (2010). The glycinergic system in human startle disease: A genetic screening

- approach. *Frontiers in Molecular Neuroscience*, 3, 8.
- Dresbach, T., Nawrotzki, R., Kremer, T., Schumacher, S., Quinones, D., & Kluska, M., et al. (2008). Molecular architecture of glycinergic synapses. *Histochemistry and Cell Biology*, 130(4), 617–633.
- Eichler, S. A., Förstera, B., Smolinsky, B., Jüttner, R., Lehmann, T. N., & Fähling, M., et al. (2009). Splice-specific roles of glycine receptor alpha3 in the hippocampus. *European Journal of Neuroscience*, 30(6), 1077–1091.
- Eulenburg, V., & Gomeza, J. (2010). Neurotransmitter transporters expressed in glial cells as regulators of synapse function. *Brain Research Reviews*, 63(1-2), 103–112.
- Fritschy, J. M., Harvey, R. J., & Schwarz, G. (2008). Gephyrin: Where do we stand, where do we go?. *Trends in Neurosciences*, 31(5), 257–264.
- Grudzinska, J., Schemm, R., Haeger, S., Nicke, A., Schmalzing, G., & Betz, H., et al. (2005). The beta subunit determines the ligand binding properties of synaptic glycine receptors. *Neuron*, 45(5), 727–739.
- Harvey, R. J., Carta, E., Pearce, B. R., Chung, S. K., Supplisson, S., & Rees, M. I., et al. (2008). A critical role for glycine transporters in hyperexcitability disorders. *Frontiers in Molecular Neuroscience*, 1, 1.
- Harvey, R. J., Depner, U. B., Wässle, H., Ahmadi, S., Heindl, C., & Reinold, H., et al. (2004). GlyR alpha3: An essential target for spinal PGE2-mediated inflammatory pain sensitization. *Science*, 304(5672), 884–887.
- Heasman, S. J., & Ridley, A. J. (2008). Mammalian Rho GTPases: New insights into their functions from in vivo studies. *Nature Reviews Molecular Cell Biology*, 9(9), 690–701.
- Jedlicka, P., Hoon, M., Papadopoulos, T., Vlachos, A., Winkels, R., & Pouloupoulos, A., et al.

- (2011). Increased dentate gyrus excitability in neuroligin-2-deficient mice in vivo. *Cerebral Cortex*, 21(2), 357–367.
- Jedlicka, P., Papadopoulos, T., Deller, T., Betz, H., & Schwarzacher, S. W. (2009). Increased network excitability and impaired induction of long-term potentiation in the dentate gyrus of collybistin-deficient mice in vivo. *Molecular and Cellular Neuroscience*, 41(1), 94–100.
- Jonas, P., Bischofberger, J., & Sandkühler, J. (1998). Corelease of two fast neurotransmitters at a central synapse. *Science*, 281(5375), 419–424.
- Kalscheuer, V. M., Musante, L., Fang, C., Hoffmann, K., Fuchs, C., & Carta, E., et al. (2009). A balanced chromosomal translocation disrupting ARHGEF9 is associated with epilepsy, anxiety, aggression, and mental retardation. *Human Mutation*, 30(1), 61–68.
- Kins, S., Betz, H., & Collybistin, Kirsch J. (2000). a newly identified brain-specific GEF, induces submembrane clustering of gephyrin. *Nature Neuroscience*, 3(1), 22–29.
- Kneussel, M., & Loebrich, S. (2007). Trafficking and synaptic anchoring of ionotropic inhibitory neurotransmitter receptors. *Biology of the Cell*, 99(6), 297–309.
- Kubota, H., Alle, H., Betz, H., & Geiger, J. R. (2010). Presynaptic glycine receptors on hippocampal mossy fibers. *Biochemical and Biophysical Research Communications*, 393(4), 587–591.
- Levinson, J. N., Li, R., Kang, R., Moukhles, H., El-Husseini, A., & Bamji, S. X. (2010). Postsynaptic scaffolding molecules modulate the localization of neuroligins. *Neuroscience*, 165(3), 782–793.
- Lynch, J. W. (2009). Native glycine receptor subtypes and their physiological roles. *Neuropharmacology*, 56(1), 303–309.

- Nishimaru, H., & Kakizaki, M. (2009). The role of inhibitory neurotransmission in locomotor circuits of the developing mammalian spinal cord. *Acta Physiologica (Oxford)*, *197*(2), 83–97.
- Poulopoulos, A., Aramuni, G., Meyer, G., Soykan, T., Hoon, M., & Papadopoulous, T., et al. (2009). Neuroligin 2 drives postsynaptic assembly at perisomatic inhibitory synapses through gephyrin and collybistin. *Neuron*, *63*(5), 628–642.
- Rees, M. I., Harvey, K., Ward, H., White, J. H., Evans, L., & Duguid, I. C., et al. (2003). Isoform heterogeneity of the human gephyrin gene (GPHN), binding domains to the glycine receptor, and mutation analysis in hyperekplexia. *Journal of Biological Chemistry*, *278*(27), 24688–24696.
- Rees, M. I., Lewis, T. M., Kwok, J. B., Mortier, G. R., Govaert, P., & Snell, R. G., et al. (2002). Hyperekplexia associated with compound heterozygote mutations in the beta-subunit of the human inhibitory glycine receptor (GLRB). *Human Molecular Genetics*, *11*(7), 853–860.
- Sinha, S., & Yang, W. (2008). Cellular signaling for activation of Rho GTPase Cdc42. *Cell Signal*, *20*(11), 1927–1934.
- Thompson, A. J., Lester, H. A., & Lummis, S. C. (2010). The structural basis of function in Cys-loop receptors. *Quarterly Reviews of Biophysics*, *43*(4), 449–499.
- Triller, A., Cluzaud, F., & Korn, H. (1987). gamma-Aminobutyric acid-containing terminals can be apposed to glycine receptors at central synapses. *Journal of Cell Biology*, *104*(4), 947–956.
- Villmann, C., Oertel, J., Melzer, N., & Becker, C. M. (2009). Recessive hyperekplexia mutations of the glycine receptor alpha1 subunit affect cell surface integration and stability. *Journal of Neurochemistry*, *111*(3), 837–847.

- Xiang, S., Kim, E. Y., Connelly, J. J., Nassar, N., Kirsch, J., & Winking, J., et al. (2006). The crystal structure of Cdc42 in complex with collybistin II, a gephyrin-interacting guanine nucleotide exchange factor. *Journal of Molecular Biology*, *359*(1), 35–46.
- Xu, T. L., & Gong, N. (2010). Glycine and glycine receptor signaling in hippocampal neurons: Diversity, function and regulation. *Progress in Neurobiology*, *91*(4), 349–361.
- Yadid, G., Pacak, K., Golomb, E., Harvey-White, J. D., Lieberman, D. M., & Kopin, I. J., et al. (1993). Glycine stimulates striatal dopamine release in conscious rats. *British Journal of Pharmacology*, *110*(1), 50–53.