

**Errata do rozprawy doktorskiej pt.  
“Rola białka ATRX w organizacji chromatyny neuronów hipokampa  
mózgu szczura” autorstwa Dagmary Holm-Kaczmarek  
w odpowiedzi na recenzję dr Agnieszki Girstun**

## **8. Bibliografia**

- Abidi, F. E., Cardoso, C., Lossi, A. M., Lowry, R. B., Depetris, D., Mattéi, M. G., Lubs, H. A., Stevenson, R. E., Fontes, M., Chudley, A. E., & Schwartz, C. E. (2005). Mutation in the 5' alternatively spliced region of the XNP/ATR-X gene causes Chudley-Lowry syndrome. *European Journal of Human Genetics*, *13*(2), 176–183. <https://doi.org/10.1038/sj.ejhg.5201303>
- Aguilera, P. & López-Contreras, A. J. ATRX, a guardian of chromatin. (2023). *Trends Genet.* *39*(6):505-519. doi: 10.1016/j.tig.2023.02.009. Epub 2023 Mar 7. PMID: 36894374.
- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., & Walter, P. (2008). *Molecular Biology of the Cell* (5th ed.). New York: *Garland Science*.
- Alcamí, P. & Pereda, A. E. (2019). Beyond plasticity: the dynamic impact of electrical synapses on neural circuits. *Nature Reviews Neuroscience*, *20*(5), 253–271. <https://doi.org/10.1038/s41583-019-0133-5>
- Allen, K. D., Gourov, A. V., Harte, C., Gao, P., Lee, C., Sylvain, D., Splett, J. M., Oxberry, W. C., van de Nes, P. S., Troy-Regier, M. J., Wolk, J., Alarcon, J. M., & Hernández, A. I. (2014). Nucleolar Integrity Is Required for the Maintenance of Long-Term Synaptic Plasticity. *PLoS ONE*, *9*(8), e104364. <https://doi.org/10.1371/journal.pone.0104364>
- Argilli, E., Sibley, D.R., Malenka, R.C., England, P.M., Bonci, A. (2008). Mechanism and time course of cocaine-induced long-term potentiation in the ventral tegmental area. *J Neurosci.* 2008 Sep 10;28(37):9092-100. doi: 10.1523/JNEUROSCI.1001-08.2008. PMID: 18784289; PMCID: PMC2586328.
- Banker, G.A. & Cowan, W.M. (1977) Rat hippocampal neurons in dispersed cell culture. *Brain Res.* 1977 May 13;126(3):397-42. doi: 10.1016/0006-8993(77)90594-7. PMID: 861729.
- Barr, M. & Bertram, E. A Morphological Distinction between Neurones of the Male and Female, and the Behaviour of the Nucleolar Satellite during Accelerated Nucleoprotein Synthesis. (1949). *Nature* 163, 676–677. <https://doi.org/10.1038/163676a0>
- Baumann, C., & De La Fuente, R. (2009). ATRX marks the inactive X chromosome (Xi) in somatic cells and during imprinted X chromosome inactivation in trophoblast stem cells. *Chromosoma*, *118*(2), 209–222. <https://doi.org/10.1007/s00412-008-0189-x>
- Beaudoin, G. M. 3rd, Seung-Hye L., Dipika, S., Yang, Y., Yu-Gie, N., Louis, F. R., Jyothi, A. (2012) Culturing pyramidal neurons from the early postnatal mouse hippocampus and cortex. *Nat Protoc.* 2012 Sep;7(9):1741-54. doi: 10.1038/nprot.2012.099. Epub 2012 Aug 30. PMID: 22936216.
- Benito, E., & Barco, A. (2015). The neuronal activity-driven transcriptome. *Molecular neurobiology*, *51*(3), 1071–1088. <https://doi.org/10.1007/S12035-014-8772-Z>

- Bérubé, N. G., Mangelsdorf, M., Jagla, M., Vanderluit, J., Garrick, D., Gibbons, R. J., Higgs, D. R., Slack, R. S., & Picketts, D. J. (2005). The chromatin-remodeling protein ATRX is critical for neuronal survival during corticogenesis. *Journal of Clinical Investigation*, *115*(2), 258–267. <https://doi.org/10.1172/JCI200522329>
- Bérubé, N. G., Smeenk, C. A., & Picketts, D. J. (2000). Cell cycle-dependent phosphorylation of the ATRX protein correlates with changes in nuclear matrix and chromatin association. *Human Molecular Genetics*, *9*(4), 539–547. <https://doi.org/10.1093/hmg/9.4.539>
- Biała, G. (2007). Pamięć a uzależnienia lekowe : rola kalcyneuryny i hipokampa. *Postepy Hig Med Dosw (online)*, *61*, 199–203. [http://www.phmd.pl/pub/phmd/vol\\_61/10358.pdf](http://www.phmd.pl/pub/phmd/vol_61/10358.pdf)
- Billia, F., Baskys, A., Carlen, P.L., De Boni, U. (1992). Rearrangement of centromeric satellite DNA in hippocampal neurons exhibiting long-term potentiation. *Molecular Brain Research*. Volume 14, Issues 1-2. [https://doi.org/10.1016/0169-328X\(92\)90016-5](https://doi.org/10.1016/0169-328X(92)90016-5).
- Birnstiel, M. L. & Hyde, B. B. (1963). Protein synthesis by isolated pea nucleoli. *The Journal of cell biology*, *18*(18), 41–50. <https://doi.org/10.1083/jcb.18.1.41>
- Bliss, T.V. & Lomo, T. (1973). Long-lasting potentiation of synaptic transmission in the dentate area of the anaesthetized rabbit following stimulation of the perforant path. *J Physiol*. Jul;232(2):331-56. doi: 10.1113/jphysiol.1973.sp010273.
- Bokota, G., Sroka, J., Basu, S., Das, N., Trzaskoma, P., Yushkevich, Y., Grabowska, A., Magalska, A., & Plewczynski, D. (2021). PartSeg: a tool for quantitative feature extraction from 3D microscopy images for dummies. *BMC Bioinformatics*, *22*(1), 1–19. <https://doi.org/10.1186/s12859-021-03984-1>
- Botchkarev, V. A., Gdula, M. R., Mardaryev, A. N., Sharov, A. A., & Fessing, M. Y. (2012). Epigenetic regulation of gene expression in keratinocytes. *Journal of Investigative Dermatology*, *132*(11), 2505–2521. <https://doi.org/10.1038/jid.2012.182>
- Boulon, S., Westman, B. J., Hutten, S., Boisvert, F. M., & Lamond, A. I. (2010). The Nucleolus under Stress. *Molecular Cell* (T. 40, Numer 2, ss. 216–227). *Mol Cell*. <https://doi.org/10.1016/j.molcel.2010.09.024>
- Bramham, C. R. (2010). LTP ≠ learning: Lessons from short-term plasticity. *Frontiers in Behavioral Neuroscience*, *4*(FEB), 3–4. <https://doi.org/10.3389/neuro.08.003.2010>
- Brangwynne, C. P., Mitchison, T. J., & Hyman, A. A. (2011). Active liquid-like behavior of nucleoli determines their size and shape in *Xenopus laevis* oocytes. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(11), 4334–4339. <https://doi.org/10.1073/pnas.1017150108>
- Bunina, D., Abazova, N., Diaz, N., Noh, K. M., Krijgsveld, J., & Zaugg, J. B. (2020). Genomic Rewiring of SOX2 Chromatin Interaction Network during Differentiation of ESCs to Postmitotic Neurons. *Cell Systems*, *10*(6), 480-494.e8. <https://doi.org/10.1016/j.cels.2020.05.003>
- Burke, B., & Stewart, C. L. (2013). The nuclear lamins: Flexibility in function. *Nature Reviews Molecular Cell Biology*, *14*(1), 13–24. <https://doi.org/10.1038/nrm3488>
- Byrne, M.J., Putkey, J.A., Neal Waxham, M. et al. (2009). Dissecting cooperative calmodulin binding to CaM kinase II: a detailed stochastic model. *J Comput Neurosci* *27*, 621–638. <https://doi.org/10.1007/s10827-009-0173-3>
- Cabral JM, Oh HS, Knipe DM. ATRX promotes maintenance of herpes simplex virus heterochromatin during chromatin stress. (2018). *Elife*. 2018 Nov 22;7:e40228. doi: 10.7554/eLife.40228. PMID:

30465651; PMID: PMC6307862.

- Chaurasia, A., Park, S.H., Seo, J.W., Park, C.K. (2016). Immunohistochemical Analysis of ATRX, IDH1 and p53 in Glioblastoma and Their Correlations with Patient Survival. *J Korean Med Sci.* 2016 Aug;31(8):1208-14. doi: 10.3346/jkms.2016.31.8.1208. Epub 2016 May 30. PMID: 27478330; PMID: PMC4951549.
- Cheung, T. H. C., & Cardinal, R. N. (2005). Hippocampal lesions facilitate instrumental learning with delayed reinforcement but induce impulsive choice in rats. *BMC Neuroscience*, 6, 1–24. <https://doi.org/10.1186/1471-2202-6-36>
- Clynes, D., Higgs, D. R., & Gibbons, R. J. (2013). The chromatin remodeller ATRX: A repeat offender in human disease. *Trends in Biochemical Sciences*, 38(9), 461–466. <https://doi.org/10.1016/j.tibs.2013.06.011>
- Clynes, D., Jelinska, C., Xella, B., Ayyub, H., Taylor, S., Mitson, M., Bachrati, CZ., Higgs, D. R., Gibbons, R. J. (2014). ATRX dysfunction induces replication defects in primary mouse cells. *PLoS One*. 2014 Mar 20;9(3):e92915. doi: 10.1371/journal.pone.0092915. PMID: 24651726; PMID: PMC3961441.
- Cremer, T., Cremer, M., Hübner, B., Strickfaden, H., Smeets, D., Popken, J., Sterr, M., Markaki, Y., Rippe, K., Cremer, C. (2015). The 4D nucleome: Evidence for a dynamic nuclear landscape based on co-aligned active and inactive nuclear compartments. *FEBS Lett.* 7;589(20 Pt A):2931-43. doi: 10.1016/j.febslet.2015.05.037. Epub 2015 May 28. PMID: 26028501.
- Dai, M.-S., Zeng, S. X., Jin, Y., Sun, X.-X., David, L., & Lu, H. (2004). Ribosomal Protein L23 Activates p53 by Inhibiting MDM2 Function in Response to Ribosomal Perturbation but Not to Translation Inhibition. *Molecular and Cellular Biology*, 24(17), 7654–7668. <https://doi.org/10.1128/mcb.24.17.7654-7668.2004>
- De Carlos, J. A., & Borrell, J. (2007). A historical reflection of the contributions of Cajal and Golgi to the foundations of neuroscience. *Brain Research Reviews*, 55(1), 8–16. <https://doi.org/10.1016/j.brainresrev.2007.03.010>
- De Castro, F., López-Mascaraque, L., & De Carlos, J. A. (2007). Cajal: Lessons on brain development. *Brain Research Reviews*, 55(2 SPEC. ISS.), 481–489. <https://doi.org/10.1016/j.brainresrev.2007.01.011>
- Dekker, J., Rippe, K., Dekker, M., Kleckner, N.. Capturing chromosome conformation. (2002). *Science*. Feb 15;295(5558):1306-11. doi: 10.1126/science.1067799. PMID: 11847345.
- Desnoyers, S., Kaufmann, S. H., & Poirier, G. G. (1996). Alteration of the nucleolar localization of poly(ADP-ribose) polymerase upon treatment with transcription inhibitors. *Experimental Cell Research*, 227(1), 146–153. <https://doi.org/10.1006/excr.1996.0259>
- Duvernoy, H. M. (2005). The Human Hippocampus: Functional Anatomy, Vascularization and Serial Sections. *Springer*. ISBN: 978-3540209817.
- Dyer, M. A., Qadeer, Z. A., Valle-Garcia, D., & Bernstein, E. (2017). ATRX and DAXX: Mechanisms and mutations. *Cold Spring Harbor Perspectives in Medicine*, 7(3), 1–16. <https://doi.org/10.1101/cshperspect.a026567>
- Eiland, L., Ramroop, J., Hill, M. N., Manley, J., McEwen, B. S. (2012). Chronic juvenile stress produces corticolimbic dendritic architectural remodeling and modulates emotional behavior in male and female rats. *Psychoneuroendocrinology*. Jan;37(1):39-47. doi: 10.1016/j.psyneuen.2011.04.015.

- Elsaesser, S. J., Goldberg, A. D., & Allis, C. D. (2011). *Elsaesser S J (2010) New functions for an old variant no substitute for histone H3.3*. 20(2), 110–117. <https://doi.org/10.1016/j.gde.2010.01.003>
- Felsenfeld, G. & Groudine, M.. Controlling the double helix. (2003). *Nature*. Jan 23;421(6921):448-53. doi: 10.1038/nature01411. PMID: 12540921.
- Feric, M., Vaidya, N., Harmon, T. S., Mitrea, D. M., Zhu, L., Richardson, T. M., Kriwacki, R. W., Pappu, R. V., & Brangwynne, C. P. (2016). Coexisting Liquid Phases Underlie Nucleolar Subcompartments. *Cell*, 165(7), 1686–1697. <https://doi.org/10.1016/j.cell.2016.04.047>
- Fussner, E., Strauss, M., Djuric, U., Li, R., Ahmed, K., Hart, M., Ellis, J., & Bazett-Jones, D. P. (2012). Open and closed domains in the mouse genome are configured as 10-nm chromatin fibres. *EMBO Reports*, 13(11), 992–996. <https://doi.org/10.1038/embor.2012.139>
- Freed, E.F., Bleichert, F., Dutca, L.M., Baserga, S.J. (2010). When ribosomes go bad: diseases of ribosome biogenesis. *Mol Biosyst*. 2010 Mar;6(3):481-93. doi: 10.1039/b919670f. Epub 2010 Jan 11. PMID: 20174677; PMCID: PMC2965583.
- Galganski, L., Urbanek, M. O., & Krzyzosiak, W. J. (2017). Nuclear speckles: Molecular organization, biological function and role in disease. *Nucleic Acids Research*, 45(18), 10350–10368. <https://doi.org/10.1093/nar/gkx759>
- Gapp, K., Jawaid, A., Sarkies, P., Bohacek, J., Pelczar, P., Farinelli, L., Miska, E., & Mansuy, I. M. (2014). Feeding the Next Generation of Corn Ethanol Byproducts To. *Nature Neuroscience*, 17(5), 667–669. <https://doi.org/10.1038/nn.3695.Implication>
- Garrick, D., Samara, V., McDowell, T. L., Smith, A. J. H., Dobbie, L., Higgs, D. R., & Gibbons, R. J. (2004). A conserved truncated isoform of the ATR-X syndrome protein lacking the SWI/SNF-homology domain. *Gene*, 326(1–2), 23–34. <https://doi.org/10.1016/j.gene.2003.10.026>
- Gibbons, R. J., & Higgs, D. R. (2000). *Molecular – Clinical Spectrum of the ATR-X Syndrome*. 212, 204–212.
- Gibbons, R. J., Wilkie, A. O. M., Weatherall, D. J., & Higgs, D. R. (1991). A newly defined X linked mental retardation syndrome associated with  $\alpha$  thalassaemia. *Journal of Medical Genetics*, 28(11), 729–733. <https://doi.org/10.1136/jmg.28.11.729>
- Gluck, M. A., & Myers, C. E. (1997). Psychobiological models of hippocampal function in learning and memory. *Annual Review of Psychology*, 48, 481–514. <https://doi.org/10.1146/annurev.psych.48.1.481>
- Goldberg, A. D., Banaszynski, L. A., Noh, K., Lewis, P. W., Elsaesser, J., Stadler, S., Dewell, S., Law, M., Guo, X., Li, X., Wen, D., Chappier, A., Dekelver, R. C., Miller, J. C., Boydston, E. A., Holmes, M. C., Gregory, P. D., John, M., Rafii, S., Urnov, F. D., Zheng D., Allis C. D. (2011). Distinct Factors Control Histone Variant H3.3 Localization at Specific Genomic Regions. *Cell*. 140(5), 678–691. <https://doi.org/10.1016/j.cell.2010.01.003>.
- Gorlewicz, A., Krawczyk, K., Szczepankiewicz, A. A., Trzaskoma, P., Mülle, C., & Wilczynski, G. M. (2020). Colocalization Colormap -an ImageJ Plugin for the Quantification and Visualization of Colocalized Signals. *Neuroinformatics*, 18(4), 661–664. <https://doi.org/10.1007/s12021-020-09465-9>
- Grabowska, A., Sas-Nowosielska, H., Wojtas, B., Holm-Kaczmarek, D., Januszewicz, E., Yushkevich, Y., Czaban, I., Trzaskoma, P., Krawczyk, K., Gielniewski, B., Martin-Gonzalez, A., Filipkowski, R. K., Olszynski, K. H., Bernas, T., Szczepankiewicz, A. A., Sliwinska, M. A., Kanhema, T., Bramham, C. R., Bokota, G., Plewczynski, D., Wilczynski, G. M., Magalska, A. (2022).

- Activation-induced chromatin reorganization in neurons depends on HDAC1 activity. *Cell Rep.* 2022 Feb 15;38(7):110352. doi: 10.1016/j.celrep.2022.110352.
- Grummt, I., & Ladurner, A. G. (2008). A Metabolic Throttle Regulates the Epigenetic State of rDNA. *W Cell.* <https://doi.org/10.1016/j.cell.2008.04.026>
- Gugustea, R., Tamming, R. J., Martin-Kenny, N., Bérubé, N. G., & Leung, L. S. (2020). Inactivation of ATRX in forebrain excitatory neurons affects hippocampal synaptic plasticity. *Hippocampus*, 30(6), 565–581. <https://doi.org/10.1002/hipo.23174>
- Hashimoto, H., Vertino, P. M., & Cheng, X. (2010). Molecular coupling of DNA methylation and histone methylation. *Epigenomics*, 2(5), 657–669. <https://doi.org/10.2217/epi.10.44>
- Hergeth, S. P., Schneider, R. (2015). The H1 linker histones: multifunctional proteins beyond the nucleosomal core particle. *EMBO Rep.* 2015 Nov;16(11):1439-53. doi: 10.15252/embr.201540749. Epub 2015 Oct 15. PMID: 26474902; PMCID: PMC4641498.
- Herre, M., & Korb, E. (2019). The chromatin landscape of neuronal plasticity. *Current Opinion in Neurobiology*, 59, 79–86. <https://doi.org/10.1016/j.conb.2019.04.006>
- Hetman, M., & Pietrzak, M. (2012). Emerging roles of the neuronal nucleolus. *Trends in Neurosciences*, 35(5), 305–314. <https://doi.org/10.1016/j.tins.2012.01.002>
- Hetman, M., & Slomnicki, L. P. (2019). Ribosomal biogenesis as an emerging target of neurodevelopmental pathologies. *Journal of Neurochemistry*, 148(3), 325–347. <https://doi.org/10.1111/jnc.14576>
- Higgs, D. R., Garrick, D., Anguita, E., De Gobbi, M., Hughes, J., Muers, M., Vernimmen, D., Lower, K., Law, M., Argentaro, A., Deville, M. A., Gibbons, R. (2005). Understanding alpha-globin gene regulation: Aiming to improve the management of thalassemia. *Ann N Y Acad Sci.* 2005;1054:92-102. doi: 10.1196/annals.1345.012. PMID: 16339655.
- Horch, H. W., & Katz, L. C. (2002). BDNF release from single cells elicits local dendritic growth in nearby neurons. *Nature Neuroscience*, 5(11), 1177–1184. <https://doi.org/10.1038/nn927>
- Ishov, A. M., Sotnikov, A. G., Negorev, D., Vladimirova, O. V., Neff, N., Kamitani, T., Yeh, E. T. H., Strauss, J. F., & Maul, G. G. (1999). PML is critical for ND10 formation and recruits the PML-interacting protein Daxx to this nuclear structure when modified by SUMO-1. *Journal of Cell Biology*, 147(2), 221–233. <https://doi.org/10.1083/jcb.147.2.221>
- James, A., Wang, Y., Raje, H., Rosby, R., & DiMario, P. (2014). Nucleolar stress with and without p53. *Nucleus*, 5(5), 402–426. <https://doi.org/10.4161/nucl.32235>
- Janiszewski, L., Barbacka-Surowiak, G., Surowiak, J. (1993). Neurofizjologia porównawcza. Warszawa: *Wydawnictwo Naukowe PWN*.
- Jaworski, J., Kalita, K., Knapska, E. (2018) c-Fos and neuronal plasticity: the aftermath of Kaczmarek's theory. *Acta Neurobiol Exp (Wars)*. 2018;78(4):287-296. PMID: 30624427.
- Jin, B., & Robertson, K. D. (2013). DNA methyltransferases, DNA damage repair, and cancer. *Advances in Experimental Medicine and Biology*, 754, 3–29. [https://doi.org/10.1007/978-1-4419-9967-2\\_1](https://doi.org/10.1007/978-1-4419-9967-2_1)
- Kaczmarek, L. (1992). Expression of c-fos and other genes encoding transcription factors in long-term potentiation. *Behavioral and Neural Biology*, 57(3), 263–266. [https://doi.org/10.1016/0163-1047\(92\)90276-A](https://doi.org/10.1016/0163-1047(92)90276-A)

- Kaczmarek, L. & Chaudhuri, A. (1997). Sensory regulation of immediate-early gene expression in mammalian visual cortex: implications for functional mapping and neural plasticity. *Brain Res Brain Res Rev.* 1997 Apr;23(3):237-56. doi: 10.1016/s0165-0173(97)00005-2. PMID: 9164673.
- Kalita, K., Makonchuk, D., Gomes, C., Zheng, J. J., & Hetman, M. (2008). Inhibition of nucleolar transcription as a trigger for neuronal apoptosis. *Journal of Neurochemistry*, 105(6), 2286–2299. <https://doi.org/10.1111/j.1471-4159.2008.05316.x>
- Kaufmann, W. E., & Moser, H. W. (2000). Dendritic anomalies in disorders associated with mental retardation. *Cerebral Cortex*, 10(10), 981–991. <https://doi.org/10.1093/cercor/10.10.981>
- Kernohan, K. D., Vernimmen, D., Gloor, G. B., & Bérubé, N. G. (2014). Analysis of neonatal brain lacking ATRX or MeCP2 reveals changes in nucleosome density, CTCF binding and chromatin looping. *Nucleic Acids Research*, 42(13), 8356–8368. <https://doi.org/10.1093/nar/gku564>
- Khatau, S. B., Hale, C. M., Stewart-Hutchinson, P. J., Patel, M. S., Stewart, C. L., Searson, P. C., Hodzic, D., & Wirtz, D. (2009). A perinuclear actin cap regulates nuclear shape. *Proceedings of the National Academy of Sciences of the United States of America*, 106(45), 19017–19022. <https://doi.org/10.1073/pnas.0908686106>
- Kim, S., Yu, N. K., & Kaang, B. K. (2015). CTCF as a multifunctional protein in genome regulation and gene expression. *Experimental and Molecular Medicine*, 47(6). <https://doi.org/10.1038/EMM.2015.33>
- Kobayashi, T. (2008). A new role of the rDNA and nucleolus in the nucleus - RDNA instability maintains genome integrity. *BioEssays*, 30(3), 267–272. <https://doi.org/10.1002/bies.20723>
- Konturek, S. (1993). Fizjologia człowieka. Tom IV - Neurofizjologia. *Wydawnictwo Lekarskie PZWL*. Warszawa.
- Konorski, J. (1948). Conditioned reflexes and neuron organization. *Cambridge University Press*.
- Kornberg, R. (1974). Chromatin Structure : A Repeating Unit of Histones and DNA Chromatin structure is based on a repeating unit of eight. *Science*, 184, 868–871.
- Kossut, M. (2019). Basic mechanism of neuroplasticity. *Neuropsychiatria i Neuropsychologia*. 14(1), 1-8. <https://doi.org/10.5114/nan.2019.87727>
- Kouzarides, T. (2007). Chromatin Modifications and Their Function. *Cell*, 128(4), 693–705. <https://doi.org/10.1016/j.cell.2007.02.005>
- Lafontaine, D. L. J., Riback, J. A., Bascetin, R., & Brangwynne, C. P. (2020). The nucleolus as a multiphase liquid condensate. *W Nature Reviews Molecular Cell Biology* (T. 22, Numer 3, ss. 165–182). Nature Research. <https://doi.org/10.1038/s41580-020-0272-6>
- Lewis, P. W., Elsaesser, S. J., Noh, K. M., Stadler, S. C., & Allis, C. D. (2010). Daxx is an H3.3-specific histone chaperone and cooperates with ATRX in replication-independent chromatin assembly at telomeres. *Proceedings of the National Academy of Sciences of the United States of America*, 107(32), 14075–14080. <https://doi.org/10.1073/pnas.1008850107>
- Lindström, M. S., Jurada, D., Bursac, S., Orsolich, I., Bartek, J., & Volarevic, S. (2018). Nucleolus as an emerging hub in maintenance of genome stability and cancer pathogenesis. *Oncogene*, 37(18), 2351–2366. <https://doi.org/10.1038/s41388-017-0121-z>
- Liu, Y., Liang, S., & Tartakoff, A. M. (1996). Heat shock disassembles the nucleolus and inhibits nuclear protein import and poly(A)+ RNA export. *EMBO Journal*, 15(23), 6750–6757. <https://doi.org/10.1002/j.1460-2075.1996.tb01064.>

- Longstaff A. (2011) Krótkie wykłady. Neurobiologia. Warszawa: *Wydawnictwo Naukowe PWN*.
- Luger, K., Mäder, A. W., Richmond, R. K., Sargent, D. F., & Richmond, T. J. (1997). Crystal structure of the nucleosome core particle at 2.8 Å resolution. *Nature*, 389(6648), 251–260. <https://doi.org/10.1038/38444>
- Maggi, L. B., Kuchenruether, M., Dadey, D. Y. A., Schwoppe, R. M., Grisendi, S., Townsend, R. R., Pandolfi, P. P., & Weber, J. D. (2008). Nucleophosmin Serves as a Rate-Limiting Nuclear Export Chaperone for the Mammalian Ribosome. *Molecular and Cellular Biology*, 28(23), 7050–7065. <https://doi.org/10.1128/mcb.01548-07>
- Majewski, L., Nowak, J., Sobczak, M., Karatsai, O., Havrylov, S., Lenartowski, R., Suszek, M., Lenartowska, M., & Redowicz, M. J. (2018). Myosin VI in the nucleus of neurosecretory PC12 cells: Stimulation-dependent nuclear translocation and interaction with nuclear proteins. *Nucleus*, 9(1), 125–141. <https://doi.org/10.1080/19491034.2017.1421881>
- Malgulwar, P. B., Danussi, C., Dharmiah, S., Johnson, W., Singh, A., Rai, K., Rao, A., Huse, J. T. (2024). Sirtuin 2 inhibition modulates chromatin landscapes genome-wide to induce senescence in ATRX-deficient malignant glioma. *Neuro Oncol.* Jan 5;26(1):55-67. doi: 10.1093/neuonc/noad155. PMID: 37625115; PMCID: PMC10769000.
- Marano, D., Fioriniello, S., Fiorillo, F., Gibbons, R. J., D'esposito, M., & Ragione, F. Della. (2019). ATRX contributes to MECP2-mediated pericentric heterochromatin organization during neural differentiation. *International Journal of Molecular Sciences*, 20(21), 1–28. <https://doi.org/10.3390/ijms20215371>
- Marquez-Lona, E. M., Tan, Z., & Schreiber, S. S. (2012). Nucleolar stress characterized by downregulation of nucleophosmin: A novel cause of neuronal degeneration. *Biochemical and Biophysical Research Communications*, 417(1), 514–520. <https://doi.org/10.1016/j.bbrc.2011.11.152>
- Matthews, D. A. (2001). Adenovirus Protein V Induces Redistribution of Nucleolin and B23 from Nucleolus to Cytoplasm. *Journal of Virology*, 75(2), 1031–1038. <https://doi.org/10.1128/jvi.75.2.1031-1038.2001>
- Maze, I., Wenderski, W., Noh, K. M., Bagot, R. C., Tzavaras, N., Purushothaman, I., Elsässer, S. J., Guo, Y., Ionete, C., Hurd, Y. L., Tamminga, C. A., Halene, T., Farrelly, L., Soshnev, A. A., Wen, D., Rafii, S., Birtwistle, M. R., Akbarian, S., Buchholz, B. A., Allis, C. D. (2015). Critical Role of Histone Turnover in Neuronal Transcription and Plasticity. *Neuron*, 87(1), 77–94. <https://doi.org/10.1016/j.neuron.2015.06.014>
- McDowell, T. L., Gibbons, R. J., Sutherland, H., O'Rourke, D. M., Bickmore, W. A., Pombo, A., Turley, H., Gatter, K., Picketts, D. J., Buckle, V. J., Chapman, L., Rhodes, D., & Higgs, D. R. (1999). Localization of a putative transcriptional regulator (ATRX) at pericentromeric heterochromatin and the short arms of acrocentric chromosomes. *Proceedings of the National Academy of Sciences of the United States of America*, 96(24), 13983–13988. <https://doi.org/10.1073/pnas.96.24.13983>
- McStay, B., & Grummt, I. (2008). The epigenetics of rRNA genes: From molecular to chromosome biology. *Annual Review of Cell and Developmental Biology*, 24, 131–157. <https://doi.org/10.1146/annurev.cellbio.24.110707.175259>
- Medrano-Fernández, A., & Barco, A. (2016). Nuclear organization and 3D chromatin architecture in cognition and neuropsychiatric disorders. *Molecular Brain*, 9(1), 1–12. <https://doi.org/10.1186/s13041-016-0263-x>

- Mélèse, T., & Xue, Z. (1995). The nucleolus: an organelle formed by the act of building a ribosome. *Current Opinion in Cell Biology*, 7(3), 319–324. [https://doi.org/10.1016/0955-0674\(95\)80085-9](https://doi.org/10.1016/0955-0674(95)80085-9)
- Michaluk, P., Wawrzyniak, M., A lot, P., Szczot, M., Wyrembek, P., Mercik, K., Medvedev, N., Wilczek, E., De Roo, M., Zuschratter, W., Muller, D., Wilczynski, G.M., Mozrzymas, J.W., Stewart, M.G., Kaczmarek, L., Włodarczyk, J. (2011). Influence of matrix metalloproteinase MMP-9 on dendritic spine morphology. *J Cell Sci*. 2011 Oct 1;124(Pt 19):3369-80. doi: 10.1242/jcs.090852. Epub 2011 Sep 6. PMID: 21896646.
- Mierzejewski, P., & Kostowski, W. (2002). Rola hipokampa w patogenezie uzależnień i działaniu pozytywnie wzmacniającym substancji psychoaktywnych. *Alkoholizm i Narkomania*, 15(2), 207-219.
- Mifsud, B., Tavares-Cadete, F., Young, A. N., Sugar, R., Schoenfelder, S., Ferreira, L., Wingett, S. W., Andrews, S., Grey, W., Ewels, P. A., Herman, B., Happe, S., Higgs, A., Leproust, E., Follows, G. A., Fraser, P., Luscombe, N. M., & Osborne, C. S. (2015). Mapping long-range promoter contacts in human cells with high-resolution capture Hi-C. *Nature Genetics*, 47(6), 598–606. <https://doi.org/10.1038/ng.3286>
- Miller, O. L., & Beatty, B. R. (1969). Visualization of nucleolar genes. *Science*, 164(3882), 955–957. <https://doi.org/10.1126/science.164.3882.955>
- Misteli, T. (2020) The Self-Organizing Genome: Principles of Genome Architecture and Function. *Cell*. 2020 Oct 1;183(1):28-45. doi: 10.1016/j.cell.2020.09.014. Epub 2020 Sep 24. PMID: 32976797; PMCID: PMC7541718.
- Monneron, A., Bernhard, W. (1969). Fine structural organization of the interphase nucleus in some mammalian cells. *J Ultrastruct Res*. May;27(3):266-88. doi: 10.1016/s0022-5320(69)80017-1. PMID: 5813971.
- Montgomery, T. H. (1898). Comparative cytological studies, with especial regard to the morphology of the nucleolus. *Journal of Morphology*.
- Morgan, A., Gandin, I., Belcaro, C., Palumbo, P., Palumbo, O., Biamino, E., Dal Col, V., Laurini, E., Pricl, S., Bosco, P., Carella, M., Ferrero, G. B., Romano, C., d’Adamo, A. P., Faletta, F., & Vozi, D. (2015). Target sequencing approach intended to discover new mutations in non-syndromic intellectual disability. *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis*, 781, 32–36. <https://doi.org/10.1016/j.mrfmmm.2015.09.002>
- Nazer, E. (2022). To be or not be (in the LAD): emerging roles of lamin proteins in transcriptional regulation. *Biochemical Society Transactions*, 50(2), 1035–1044. <https://doi.org/10.1042/BST20210858>
- Noh, K. M., Maze, I., Zhao, D., Xiang, B., Wenderski, W., Lewis, P. W., Shen, L., Li, H., & Allis, C. D. (2015). ATRX tolerates activity-dependent histone H3 methyl/phos switching to maintain repetitive element silencing in neurons. *Proceedings of the National Academy of Sciences of the United States of America*, 112(22), 6820–6827. <https://doi.org/10.1073/pnas.1411258112>
- Núñez Villacís, L., Wong, M. S., Ferguson, L. L., Hein, N., George, A. J., & Hannan, K. M. (2018). New Roles for the Nucleolus in Health and Disease. *BioEssays*, 40(5), 8–10. <https://doi.org/10.1002/bies.201700233>
- Olausson, K. H., Nistér, M., & Lindström, M. S. (2012). P53 -Dependent and -Independent Nucleolar Stress Responses. *Cells*, 1(4), 774–798. <https://doi.org/10.3390/cells1040774>
- Otmakhov, N., Khibnik, L., Otmakhova, N., Carpenter, S., Riahi, S., Asrican, B., & Lisman, J. (2004).



- Forskolin-Induced LTP in the CA1 Hippocampal Region Is NMDA Receptor Dependent. *Journal of Neurophysiology*, 91(5), 1955–1962. <https://doi.org/10.1152/jn.00941.2003>
- Pang, Y., Chen, X., Ji, T., Cheng, M., Wang, R., Zhang, C., Liu, M., Zhang, J., & Zhong, C. (2023). The Chromatin Remodeler ATRX: Role and Mechanism in Biology and Cancer. *Cancers*, 15(8). <https://doi.org/10.3390/cancers15082228>
- Percy, A. K., Neul, J. L., Benke, T. A., Marsh, E. D., & Glaze, D. G. (2023). A review of the Rett Syndrome Behaviour Questionnaire and its utilization in the assessment of symptoms associated with Rett syndrome. *Frontiers in Pediatrics*, 11(July), 1–9. <https://doi.org/10.3389/fped.2023.1229553>
- Perry, R. P. (1967). The Nucleolus and the Synthesis of Ribosomes. *Progress in Nucleic Acid Research and Molecular Biology*, 6(C), 219–257. [https://doi.org/10.1016/S0079-6603\(08\)60528-0](https://doi.org/10.1016/S0079-6603(08)60528-0)
- Picketts, D. J., Higgs, D. R., Bachoo, S., Blake, D. J., Quarrell, O. W. J., & Gibbons, R. J. (1996). ATRX encodes a novel member of the SNF2 family of proteins: Mutations point to a common mechanism underlying the ATR-X syndrome. *Human Molecular Genetics*, 5(12), 1899–1907. <https://doi.org/10.1093/hmg/5.12.1899>
- Picketts, D. J., Tastan, A. O., Higgs, D. R., & Gibbons, R. J. (1998). Comparison of the human and murine ATRX gene identifies highly conserved, functionally important domains. *Mammalian Genome*, 9(5), 400–403. <https://doi.org/10.1007/s003359900781>
- Placek, B. J., & Gloss, L. M. (2002). The N-terminal tails of the H2A-H2B histones affect dimer structure and stability. *Biochemistry*, 41(50), 14960–14968. <https://doi.org/10.1021/bi026283k>
- Ratnakumar, K., & Bernstein, E. (2013). ATRX: The case of a peculiar chromatin remodeler. *Epigenetics*, 8(1), 3–9. <https://doi.org/10.4161/epi.23271>
- Renner, J. & Rasia-Filho, A. A. (2023). Morphological Features of Human Dendritic Spines. *Adv Neurobiol.* 2023;34:367-496. doi: 10.1007/978-3-031-36159-3\_9. PMID: 37962801.
- Reymann, K. G., & Frey, J. U. (2007). The late maintenance of hippocampal LTP: Requirements, phases, „synaptic tagging”, „late-associativity” and implications. *Neuropharmacology*, 52(1), 24–40. <https://doi.org/10.1016/j.neuropharm.2006.07.026>
- Richter, J. D., & Klann, E. (2009). Making synaptic plasticity and memory last: Mechanisms of translational regulation. *Genes and Development*, 23(1), 1–11. <https://doi.org/10.1101/gad.1735809>
- Rodrigues, S. M., Schafe, G. E., & Ledoux, J. E. (2004). Molecular mechanisms underlying emotional learning and memory in the lateral amygdala. *Neuron*, 44(1), 75–91. <https://doi.org/10.1016/j.neuron.2004.09.014>
- Rorbach-Dolata, A., Kubis, A., & Piwowar, A. (2017). Epigenetic modifications: An important mechanism in diabetic disturbances. *Postępy Higieny i Medycyny Doświadczalnej*, 71(0), 0–0. <https://doi.org/10.5604/01.3001.0010.6156>
- Roszkowska, M., Skupien, A., Wójtowicz, T., Konopka, A., Gorlewicz, A., Kisiel, M., Bekisz, M., Ruszczycki, B., Dolezyczek, H., Rejmak, E., Knapska, E., Mozrzymas, J. W., Włodarczyk, J., Wilczynski, G. M., & Dzwonek, J. (2016). CD44: A novel synaptic cell adhesion molecule regulating structural and functional plasticity of dendritic spines. *Molecular Biology of the Cell*, 27(25), 4055–4066. <https://doi.org/10.1091/mbc.E16-06-0423>
- Rubbi, C. P., & Milner, J. (2003). Disruption of the nucleolus mediates stabilization of p53 in response

- to DNA damage and other stresses. *The EMBO Journal*, 22(22), 6068–6077.
- Ryan, D. P., & Owen-hughes, T. (2014). *Europe PMC Funders Group Snf2-family proteins : chromatin remodellers for any occasion*. 15(5), 649–656. <https://doi.org/10.1016/j.cbpa.2011.07.022>.Snf2-family
- Sacharowski, S. P. & Sarnowski, T. J. (2019). Mechanizmy kontrolujące strukturę chromatyny. *Postepy Biochem.* Mar 22;65(1):9-20. doi: 10.18388/pb.2019\_252.
- Seah, C., Levy, M. A., Jiang, Y., Mokhtarzada, S., Higgs, D. R., Gibbons, R. J., & Bérubé, N. G. (2008). Neuronal death resulting from targeted disruption of the Snf2 protein ATRX is mediated by p53. *Journal of Neuroscience*, 28(47), 12570–12580. <https://doi.org/10.1523/JNEUROSCI.4048-08.2008>
- Selakovic, D., Joksimovic, J., Jovicic, N., Mitrovic, S., Mihailovic, V., Katanic, J., Milovanovic, D., Pantovic, S., Mijailovic, N., & Rosic, G. (2019). The impact of hippocampal sex hormones receptors in modulation of depressive-like behavior following chronic anabolic androgenic steroids and exercise protocols in rats. *Frontiers in Behavioral Neuroscience*, 13(February), 1–15. <https://doi.org/10.3389/fnbeh.2019.00019>
- Sharifi, S. & Bierhoff H. (2018). Regulation of RNA Polymerase I Transcription in Development, Disease, and Aging. *Annu Rev Biochem.* 2018 Jun 20;87:51-73. doi: 10.1146/annurev-biochem-062917-012612. Epub 2018 Mar 28. PMID: 29589958.
- Shioda, N., Yabuki, Y., Yamaguchi, K., Onozato, M., Li, Y., Kurosawa, K., Tanabe, H., Okamoto, N., Era, T., Sugiyama, H., Wada, T., Fukunaga K. (2018). Targeting G-quadruplex DNA as cognitive function therapy for ATR-X syndrome. *Nat Med.* 2018 Jun;24(6):802-813. doi: 10.1038/s41591-018-0018-6.
- Sirri, V., Urcuqui-Inchima, S., Roussel, P., Hernandez-Verdun, D. Nucleolus: the fascinating nuclear body. (2208). *Histochem Cell Biol.* 2008 Jan;129(1):13-31. doi: 10.1007/s00418-007-0359-6. Epub 2007 Nov 29. PMID: 18046571; PMCID: PMC2137947.
- Skupien, A., Konopka, A., Trzaskoma, P., Labus, J., Gorlewicz, A., Swiech, L., Babraj, M., Dolezyczek, H., Figiel, I., Ponimaskin, E., Wlodarczyk, J., Jaworski, J., Wilczynski, G. M., Dzwonek, J. (2014). CD44 regulates dendrite morphogenesis through Src tyrosine kinase-dependent positioning of the Golgi. *J Cell Sci.* 2014 Dec 1;127(Pt 23):5038-51. doi: 10.1242/jcs.154542. Epub 2014 Oct 9. PMID: 25300795.
- Skupien-Jaroszek, A., Walczak, A., Czaban, I., Pels, K. K., Szczepankiewicz, A. A., Krawczyk, K., Ruszczycki, B., Wilczynski, G. M., Dzwonek, J., Magalska, A. (2021). The interplay of seizures-induced axonal sprouting and transcription-dependent Bdnf repositioning in the model of temporal lobe epilepsy. *PLoS One.* 2021 Jun 4;16(6):e0239111. doi: 10.1371/journal.pone.0239111. PMID: 34086671; PMCID: PMC8177504.
- Spector, D. L. Nuclear domains. (2001) *J Cell Sci.* Aug;114(Pt 16):2891-3. doi:10.1242/jcs.114.16.2891.
- Stoppini, L., Buchs, P. A., & Muller, D. (1991). A simple method for organotypic cultures of nervous tissue. *Journal of Neuroscience Methods*, 37(2), 173–182. [https://doi.org/10.1016/0165-0270\(91\)90128-M](https://doi.org/10.1016/0165-0270(91)90128-M)
- Talbert, P. B., & Henikoff, S. (2010). Histone variants ancient wrap artists of the epigenome. *Nature Reviews Molecular Cell Biology*, 11(4), 264–275. <https://doi.org/10.1038/nrm2861>
- Tao-Cheng, J. H.(2019) Stimulation induces gradual increases in the thickness and curvature of

- postsynaptic density of hippocampal CA1 neurons in slice cultures. *Mol Brain*. 12, 44. <https://doi.org/10.1186/s13041-019-0468-x>
- Thielmann, H. W., Popanda, O., & Staab, H. J. (1999). Subnuclear distribution of DNA topoisomerase I and Bax protein in normal and xeroderma pigmentosum fibroblasts after irradiation with UV light and  $\gamma$  rays or treatment with topotecan. *Journal of Cancer Research and Clinical Oncology*, 125(3–4), 193–208. <https://doi.org/10.1007/s004320050263>
- Trovato, M., Patil, V., Gehre, M., & Noh, K. M. (2020). Histone Variant H3.3 Mutations in Defining the Chromatin Function in Mammals. *Cells*, 9(12). <https://doi.org/10.3390/cells9122716>
- Truch, J., Downes, D. J., Scott, C., Gür, E. R., Telenius, J. M., Repapi, E., Schwessinger, R., Gosden, M., Brown, J. M., Taylor, S., Cheong, P. L., Hughes, J. R., Higgs, D. R., & Gibbons, R. J. (2022). The chromatin remodeller ATRX facilitates diverse nuclear processes, in a stochastic manner, in both heterochromatin and euchromatin. *Nature Communications*, 13(1), 1–16. <https://doi.org/10.1038/s41467-022-31194-7>
- Tsekrekou, M., Stratigi, K., & Chatzinikolaou, G. (2017). The nucleolus: In genome maintenance and repair. *International Journal of Molecular Sciences*, 18(7). <https://doi.org/10.3390/ijms18071411>
- Udugama, M., Sanij, E., Voon, H. P. J., Son, J., Hii, L., Henson, J. D., Chan, F. L., Chang, F. T. M., Liu, Y., Pearson, R. B., Kalitsis, P., Mann, J. R., Collas, P., Hannan, R. D., Wong, L. H. (2018). Ribosomal DNA copy loss and repeat instability in ATRX-mutated cancers. *Proc Natl Acad Sci U S A*. 2018 May 1;115(18):4737-4742. doi: 10.1073/pnas.1720391115. Epub 2018 Apr 18. PMID: 29669917; PMCID: PMC5939086.
- Urbanska, M., Blazejczyk, M., Jaworski, J. (2008). Molecular basis of dendritic arborization. *Acta Neurobiol Exp (Wars)*. 2008;68(2):264-88. doi: 10.55782/ane-2008-1695. PMID: 18511961.
- Urbanska, M., Swiech, L., Jaworski, J. (2012). Developmental plasticity of the dendritic compartment: focus on the cytoskeleton. *Adv Exp Med Biol*. 2012;970:265-84. doi: 10.1007/978-3-7091-0932-8\_12. PMID: 22351060.
- Vargas, J. P., Rodríguez, F., López, J. C., Arias, J. L., & Salas, C. (2000). Spatial learning-induced increase in the argyrophilic nucleolar organizer region of dorsolateral telencephalic neurons in goldfish. *Brain Research*, 865(1), 77–84. [https://doi.org/10.1016/S0006-8993\(00\)02220-4](https://doi.org/10.1016/S0006-8993(00)02220-4)
- Villard, L., Lossi, A. M., Cardoso, C., Proud, V., Chiaroni, P., Colleaux, L., Schwartz, C., & Fontés, M. (1997). Determination of the genomic structure of the XNP/ATRX gene encoding a potential zinc finger helicase. *Genomics*, 43(2), 149–155. <https://doi.org/10.1006/geno.1997.4793>
- Vincent, J. A., Kwong, T. J., & Tsukiyama, T. (2008). ATP-dependent chromatin remodeling shapes the DNA replication landscape. *Nature Structural and Molecular Biology*, 15(5), 477–484. <https://doi.org/10.1038/nsmb.1419>
- Wada, T., Ban, H., Matsufuji, M., Okamoto, N., Enomoto, K., Kurosawa, K., Aida, N. (2013). Neuroradiologic features in X-linked  $\alpha$ -thalassemia/mental retardation syndrome. *AJNR Am J Neuroradiol*. 2013 Oct;34(10):2034-8. doi: 10.3174/ajnr.A3560.
- Walczak, A., Szczepankiewicz, A. A., Ruszczycki, B., Magalska, A., Zamlynska, K., Dzwonek, J., Wilczek, E., Zybura-Broda, K., Rylski, M., Malinowska, M., Dabrowski, M., Szczepinska, T., Pawlowski, K., Pyskaty, M., Włodarczyk, J., Szczerbal, I., Switonski, M., Cremer, M., & Wilczynski, G. M. (2013). Novel higher-order epigenetic regulation of the Bdnf gene upon seizures. *Journal of Neuroscience*, 33(6), 2507–2511. <https://doi.org/10.1523/JNEUROSCI.1085-12.2013>

- Warmerdam, D. O., & Wolthuis, R. M. F. (2019). Keeping ribosomal DNA intact: a repeating challenge. *Chromosome Research*, 27(1–2), 57–72. <https://doi.org/10.1007/s10577-018-9594-z>
- Wenderski, W. & Maze, I. (2016). Histone turnover and chromatin accessibility: Critical mediators of neurological development, plasticity, and disease. *Bioessays*. 2016 May;38(5):410-9. doi: 10.1002/bies.201500171. Epub 2016 Mar 15. PMID: 26990528; PMCID: PMC4968875.
- Wilczynski, G. M. (2014). Significance of higher-order chromatin architecture for neuronal function and dysfunction. *Neuropharmacology*, 80, 28–33. <https://doi.org/10.1016/J.NEUROPHARM.2014.01.016>
- Wong, L. H., McGhie, J. D., Sim, M., Anderson, M. A., Ahn, S., Hannan, R. D., George, A. J., Morgan, K. A., Mann, J. R., & Choo, K. H. A. (2010). ATRX interacts with H3.3 in maintaining telomere structural integrity in pluripotent embryonic stem cells. *Genome Research*, 20(3), 351–360. <https://doi.org/10.1101/gr.101477.109>
- Wu, H., & Zhang, Y. (2014). Reversing DNA methylation: Mechanisms, genomics, and biological functions. *Cell*, 156(1–2), 45–68. <https://doi.org/10.1016/j.cell.2013.12.019>
- Xue, Y., Gibbons, R., Yan, Z., Yang, D., McDowell, T. L., Sechi, S., Qin, J., Zhou, S., Higgs, D., & Wang, W. (2003). The ATRX syndrome protein forms a chromatin-remodeling complex with Daxx and localizes in promyelocytic leukemia nuclear bodies. *Proceedings of the National Academy of Sciences of the United States of America*, 100(19), 10635–10640. <https://doi.org/10.1073/pnas.1937626100>
- Yamada, S. & Nelson, W. J. (2007). Synapses: sites of cell recognition, adhesion, and functional specification. *Annu Rev Biochem*. 2007;76:267-94. doi: 10.1146/annurev.biochem.75.103004.142811. PMID: 17506641; PMCID: PMC3368613.
- Yang, K., Wang, M., Zhao, Y., Sun, X., Yang, Y., Li, X., Zhou, A., Chu, H., Zhou, H., Xu, J., Wu, M., Yang, J., & Yi, J. (2016). A redox mechanism underlying nucleolar stress sensing by nucleophosmin. *Nature Communications*, 7, 1–16. <https://doi.org/10.1038/ncomms13599>
- Yang, X., Khosravi-Far, R., Chang, H. Y., Baltimore, D. (1997). Daxx, a novel Fas-binding protein that activates JNK and apoptosis. *Cell*. Jun 27;89(7):1067-76. doi: 10.1016/s0092-8674(00)80294-9. PMID: 9215629; PMCID: PMC2989411.
- Yap, E. L., & Greenberg, M. E. (2018). Activity-regulated transcription: Bridging the gap between neural activity and behavior. *Neuron*, 100(2), 330. <https://doi.org/10.1016/J.NEURON.2018.10.013>
- Yasuzumi, G., Sawada, T., Sugihara, R., Kiriya, M., & Sugioka, M. (1958). Electron microscope researches on the ultrastructure of nucleoli in animal tissues. *Zeitschrift für Zellforschung und Mikroskopische Anatomie*, 48(1), 10–23. <https://doi.org/10.1007/BF00496710>
- Yogev, O., Saadon, K., Anzi, S., Inoue, K., & Shaulian, E. (2008). DNA damage-dependent translocation of B23 and p19ARF is regulated by the Jun N-terminal kinase pathway. *Cancer Research*, 68(5), 1398–1406. <https://doi.org/10.1158/0008-5472.CAN-07-2865>
- Yung, B. Y. M., Busch, H., & Chan, P. K. (1985). Translocation of nucleolar phosphoprotein B23 (37kDa pI 5.1) induced by selective inhibitors of ribosome synthesis. *BBA - Gene Structure and Expression*, 826(4), 167–173. [https://doi.org/10.1016/0167-4781\(85\)90002-8](https://doi.org/10.1016/0167-4781(85)90002-8)