

BioNanoScience 2017 vol.7 N2, pages 284-287

Immunohistochemical Analysis of Epigenetic Markers in Cervical Pathologies Associated with Human Papillomavirus Infection

Kogan E., Unanyan A., Kadyrova A., Demura T., Sidorova I., Faizullin R., Ischenko A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, Springer Science+Business Media New York. In this work, we studied molecular-biological factors leading to cervical cancer. The clinicopathologic characteristics and immunohistochemical features of 185 patients with cervical pathologies associated with human papillomavirus infection were examined. Immunohistochemical features analyzed included histone deacetylases (HDAC1, HDAC2) and DNA methyltransferases (DNMT1, DNMT2). Strong correlations of these factors with cervical pathologies including malignancies were identified.

<http://dx.doi.org/10.1007/s12668-016-0339-1>

Keywords

Cervical cancer, Cervical intraepithelial neoplasia, DNMT, HDAC, Human papillomavirus, Predictive markers

References

- [1] Minkina, G. N. (2013). The prevalence of different types of human papillomavirus in women with cervical intraepithelial neoplasia severe (Rus. ed). *Quest gynecol obstetrics perinatol*, 3(12), 32-37.
- [2] Jin, J., Li, L., Zhang, F. (2015). Meta-analysis of high risk factors of residue or relapse of cervical intraepithelial neoplasia after conization. *Journal of Biological Regulators and Homeostatic Agents*, 29(2), 451-458.
- [3] Rogovskaya, S.I. & Lipova, E.V. (2016) Cervix uteri, vagina, vulva. Guidelines for doctors, 2, 584-670 (Rus. ed).
- [4] Barrow, T. M., & Michels, K. B. (2014). Epigenetic epidemiology of cancer. *Biochemical and Biophysical Research Communications*, 455(1-2), 70-83.
- [5] Danam, R. P., Howell, S. R., Brent, T. P., Harris, L. C. (2005). Epigenetic regulation of O6-methylguanine DNA methyltransferase gene expression by histone acetylation and methyl-CpG binding proteins. *Molecular Cancer Therapeutics*, 4(1), 61-69.
- [6] Colvin, R. B., Bhan, A. K., Cluskey, R. T. (1995). *Diagnostic immunopathology* (2nd ed., Vol. 2, pp. 599-616). New York: Raven.
- [7] Lakshmaiah, K. C., Jacob, L. A., Aparna, S., Lokanatha, D., Saldanha, S. C. (2014). Epigenetic therapy of cancer with histone deacetylase inhibitors. *Journal of Cancer Research and Therapeutics*, 10(3), 469-478.
- [8] Bishop, K. S., & Ferguson, L. R. (2015). The interaction between epigenetics, nutrition and the development of cancer. *Nutrients*, 7(2), 922-947.
- [9] Saleem, M., Abbas, K., Manan, M., Ijaz, H. (2015). Epigenetic therapy for cancer. *Pakistan Journal of Pharmaceutical Sciences*, 28(3), 1023-1032.
- [10] Micelli, C., & Rastelli, G. (2015). Histone deacetylases: structural determinants of inhibitor selectivity. *Drug Discovery Today*, 20(6), 718-735.

- [11] Gloss, B. S., & Samimi, G. (2014). Epigenetic biomarkers in epithelial ovarian cancer. *Cancer Letters*, 342(2), 257-263.
- [12] Siegel, E. M., Riggs, B. M., Delmas, A. L., Koch, A., Hakam, A., Brown, K. D. (2015). Quantitative DNA methylation analysis of candidate genes in cervical cancer. *PLoS One*, 10(3), e0122495.