Table S1. Significances of epigenetics in carcinogenesis

|  |  |
| --- | --- |
| **Study** | **Related descriptions** |
| Feinberg et al. (1983) [A01] | Substantial hypomethylation was found in genes of cancer cells compared with their normal counterparts. |
| Robertson (2001) [A02] | DNA methylation and chromatin structure are linked at the molecular level and how methylation anomalies play a direct causal role in tumorigenesis and genetic disease. |
| Jones et al. (2002) [A03] | These epigenetic changes — in particular, aberrant promoter hypermethylation that is associated with inappropriate gene silencing — affect virtually every step in tumour progression. |
| Worm et al. (2002) [A04] | While gain, loss, and mutation of genetic information have long been known to contribute to tumorigenesis, it has been increasingly recognized over the past 5 years that 'epigenetic' mechanisms may play an equally important role. |
| Verma et al. (2002) [A05] | The initiation and development of cancer involves several molecular changes, which include epigenetic alterations. |
| Feinberg et al. (2004) [A06] | Since its discovery in 1983, the epigenetics of human cancer has been in the shadows of human cancer genetics. |
| Lund et al. (2004) [A07] | An altered pattern of epigenetic modifications is central to many common human diseases, including cancer. |
| Li et al. (2005) [A08] | The significance of epigenetics in cancer development is clearly evident. |
| Esteller (2007) [A09] | An altered pattern of epigenetic modifications is central to many common human diseases, including cancer. |
| Jones et al. (2007) [A10] | Epigenetic changes can collaborate with genetic changes to cause the evolution of a cancer because they are mitotically heritable. |
| Ellis et al. (2009) [A11] | Aberrant gene expression and altered epigenomic patterns are major features of cancer. |
| Korkola et al. (2010) [A12] | Cancer is now recognized as disease in which abnormalities in the genome and epigenome accumulate as a result of exposure to endogenous and exogenous damaging agents thereby enabling cells to escape normal regulatory controls. |
| Kanwal et al. (2010) [A13] | Traditionally, cancer has been viewed as a genetic disease, and it is now becoming apparent that the onset of cancer is preceded by epigenetic abnormalities.  |
| Dawson et al. (2012) [A14] | The principal tenet in oncology—that cancer is a disease initiated and driven by genetic anomalies—remains uncontested, but it is now clear that epigenetic pathways also play a significant role in oncogenesis.  |
| Virani et al. (2012) [A15] | Cancer is a disease that results from the successive accumulation of genetic and epigenetic alterations. |
| Hassler et al. (2012) [A16] | During the last decade it became clear that cancer is defined by a variety of epigenetic changes, which occur in early stages of disease and parallel genetic mutations. |
| You et al. (2012) [A17] | Epigenetic and genetic alterations have long been thought of as two separate mechanisms participating in carcinogenesis. |
| Verma et al. (2014) [A18] | Cancer is both a genetic and epigenetic disease. |
| Hatzimichael et al. (2014) [A19] | Cancer cells contain multiple genetic and epigenetic changes. |
| Basse et al. (2015) [A20] | The mechanisms governing the occurrence of cancer are thought to be the consequence not only of genetic defects but also of epigenetic modifications. |
| Verma (2016) [A21] | Differences in tumor behavior arise due to genomic and epigenomic changes.  |

REFERENCES

A01. Feinberg AP, Vogelstein B. Hypomethylation distinguishes genes of some human cancers from their normal counterparts. Nature 1983;301(5895):89-92.

A02. Robertson KD. DNA methylation, methyltransferases, and cancer. Oncogene 2001;20(24):3139-3155.

A03. Jones PA, Baylin SB. The fundamental role of epigenetic events in cancer. Nat Rev Genet 2002;3(6):415-428.

A04. Worm J, Guldberg P. DNA methylation: an epigenetic pathway to cancer and a promising target for anticancer therapy. J Oral Pathol Med 2002;31(8):443-449.

A05. Verma M, Srivastava S. Epigenetics in cancer: implications for early detection and prevention. Lancet Oncol 2002;3(12):755-763.

A06. Feinberg AP, Tycko B. The history of cancer epigenetics. Nat Rev Cancer 2004;4(2):143-153.

A07. Lund AH, van Lohuizen M. Epigenetics and cancer. Genes Dev 2004;18(19):2315-2335.

A08. Li HP, Leu YW, Chang YS. Epigenetic changes in virus-associated human cancers. Cell Res 2005;15(4):262-271.

A09. Esteller M. Cancer epigenomics: DNA methylomes and histone-modification maps. Nat Rev Genet 2007;8(4):286-298.

A10. Jones PA, Baylin SB. The epigenomics of cancer. Cell 2007;128(4):683-692.

A11. Ellis L, Atadja PW, Johnstone RW. Epigenetics in cancer: targeting chromatin modifications. Mol Cancer Ther 2009;8(6):1409-1420.

A12. Korkola J, Gray JW. Breast cancer genomes--form and function. Curr Opin Genet Dev 2010;20(1):4-14.

A13. Kanwal R, Gupta S. Epigenetics and cancer. J Appl Physiol (1985) 2010;109(2):598-605.

A14. Dawson MA, Kouzarides T. Cancer epigenetics: from mechanism to therapy. Cell 2012;150(1):12-27.

A15. Virani S, Colacino JA, Kim JH, Rozek LS. Cancer epigenetics: a brief review. ILAR J 2012;53(3-4):359-369.

A16. Hassler MR, Egger G. Epigenomics of cancer - emerging new concepts. Biochimie 2012;94(11):2219-2230.

A17. You JS, Jones PA. Cancer genetics and epigenetics: two sides of the same coin? Cancer Cell 2012;22(1):9-20.

A18. Verma M, Rogers S, Divi RL, Schully SD, Nelson S, Joseph Su L, et al. Epigenetic research in cancer epidemiology: trends, opportunities, and challenges. Cancer Epidemiol Biomarkers Prev 2014;23(2):223-233.

A19. Hatzimichael E, Lagos K, Sim VR, Briasoulis E, Crook T. Epigenetics in diagnosis, prognostic assessment and treatment of cancer: an update. EXCLI J 2014;13:954-976.

A20. Basse C, Arock M. The increasing roles of epigenetics in breast cancer: Implications for pathogenicity, biomarkers, prevention and treatment. Int J Cancer 2015;137(12):2785-2794.

A21. Verma M. Genome-wide association studies and epigenome-wide association studies go together in cancer control. Future Oncol 2016;12(13):1645-1664.