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Role of epigenetic modulation in cancer stem cell fate

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Abstract

A sub-population of the tumor micro-environment consists of cancer stem cells (CSCs), which are responsible for the initiation and recurrence of cancer. Recently, epigenetic processes such as DNA methylation, histone modification, and chromatin remodelling have been found to be involved in inducing epigenetic factors in CSCs. Most of these processes, such as DNA methylation, generally occur in the genome that is rich in Cytosine-Guanine repeat sequences, also known as CpG islands, which are distributed throughout the human genome. The Polycomb gene (PcG) complex is a chromatin modifier facilitating the maintenance of embryonic and adult stem cells. Recent evidence suggests that the PcG is also involved in maintaining CSC stemness. We have presented various aspects and examples of how