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Analysis of chromosomal aberrations in North-Indian medulloblastoma

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re present first report on novel and previously reported chromosomal mosaicism and genetic copy number variation in histopathologically characterized medulloblastoma (MB) in North Indian cases using array based comparative genomic hybridization (CNV-targeted; CytoScan 750K Array). In first case, the results revealed gain mosaic (CN state=2.91)/gains (CN=3.00) at Ch: 1q and Loss Mosaic (CN=1.22) at Ch: 1p, Ch: 2 q37.1-37.3 (CN=1.50), Ch: 4 q28.1-35.2 (CN=1.18) and Ch: 8 q22.3-24.13 (CN=1.73). Importantly, Loss of HHIP gene at 4q31.21, suggests it to be SHH Type of MB. In second case, gain mosaic of 17 q (CN=3.00), 16p (CN=2.23) 12 (CN=2.48; Gain at 3 regions) 2p (CN=2.91)7 (CN=3.00) and 1q (CN=2.91) and loss mosaic of 17 p (CN=1.61), 16q (CN=1.27) 13 (CN=1.61) 11 (CN=1.56), 10 (CN=1.27 and Loss at 10q), 8 (CN=1.67), 2q (CN=1.62) was observed. Additionally, amplification at MYCN at 2p24.3, CDK6 at 7q21.2, GLI1 at 12q13.3, Loss of MYC at 8q24.2, IRS2 at 13q34, Tp53 in 17p31.1, SUFU at 10q24.32, PAX6 at 11p13, SFRP1 at 8p11.21 classify this case into SHH group of MB. Gain of 17q, 7 and 1q and Loss of 17p, 16q, 11p, 10q and 8 have been previously reported, however gains in Ch: 16p, 12, 7, 2p, 1q and X, as well as losses of Ch: 20, 13q, 11, 10, 8, 4q and 2q were the novelty. The results validate the previously reported as well as novel alterations in onco- and tumor-suppressor genes and classify both the samples as SHH type of MB.

Biography

Neetu Singh has been selected to join more than 350 cancer researchers from prominent research institutions in 31 countries in a project called "The Halifax Project" that hopes to tackle cancer's complexity. During her Post-Doctoral training from CSIR-CDRI, Lucknow, she was actively involved in Molecular Cancer Research with projects ranging from the clinical study of association of gene-polymorphisms in Breast-Cancer, to meta-analysis and investigation of the synergistic therapeutic effect of polyphenols in combination with current drugs in Breast Cancer Cells/Explants. She also availed fellowships like Young- and Women-Scientist. During her PhD program, she received training in Endocrinology from CSIR-CDRI.

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