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Bioinformatic analysis of aberrant glycosylation in Triple negative breast cancer

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Breast cancer is the most common cancer in women worldwide, and resistance to the current therapeutics, often concurrently, is an increasing clinical challenge. Glycosylation of proteins is one of the most important post translational modifications. It is widely known that aberrant glycosylation has been implicated in many different diseases due to changes associated with biological function and protein folding. Alterations in cell surface glycosylation, can promote invasive behavior of tumor cells that ultimately lead to the progression of cancer. In breast cancer, there is increasing evidence pertaining to the role of glycosylation in tumor formation and metastasis. In the present study an attempt has been made to study the disease associated sialoglycoproteins in breast cancer by using bioinformatics tools. The sequence will be retrieved from uniprot database. A database in the form of a word document was made by collection of FASTA sequences of breast cancer gene sequence. Glycosylation was studied using yinOyang tool on expasy, followed by involvement of differentially expressed genes in important molecular and signaling casades using KEGG, DAVID and Ingenuity databases. The number of residues predicted O-glc NAc threshold -2 or more was detected and recorded for individual sequence. We found that there is a significant change in the expression profiling of glycosylation patterns of various proteins associated with Triple negative breast cancer. Differential aberrant glycosylated proteins in breast cancer cells with respect to non-neoplastic cells are an important factor for the overall progression and development of cancer.

Biography

Navkiran Kaur has completed her PhD in 2007 from Postgraduate Institute of Medical Education and Research, Chandigarh and worked as Senior Research fellow in the same institute. Presently, she is working as Assistant Professor in Amity Institute of Biotechnology, Amity University, and NOIDA. She is working in the area of protein glycosylation and breast cancer and has published papers in reputed journals. She has been sanctioned with a government funded project from UP CST in the field of Breast cancer as Co-investigator

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