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## Biological pathways identification of breast cancer cell lines transcriptome by Pathvisio software

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**Abstract:** There are many breast cancer cell lines with different characteristics that served as systems model in vitro studies. MCF-7 cell line is a positive estrogen receptor cell line that the formation of tumor cells is dependent upon the presence of estrogen, but there are no estrogen receptors in MCF-7/ADR cells, so in the absence of estrogen tumors will form [1]. The aim of present study is to identify biological processes involved in extension of Breast cancer by using transcriptome profile. We have used Transcriptomics data from Wang et al (E-GEOD-76540) in our study [2], the quality of data have been evaluated by using ArrayAnalysis [3]. Pathway analysis was performed with a new tool, PathVisio [4]. It is a free open-source pathway analysis tool with plugins (1) to visualize microarray data on pathway and (2) to perform statistical analysis to select importance pathway. Pathway analysis showed 17 pathways in which the genes were overrepresented (z-score > 1.96). Eight of these pathways are involved in cellular functions such as cell viability, cell cycle progression, apoptosis, and cellular transformation but an important process in MCF-7 and MCF-7/ADR has integrated Breast Cancer Pathway that have used the most important proteins for Breast Cancer.

**Keywords:** Transcriptomics, Breast cancer, Pathvisio, Pathway Analysis

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