

Regulatory Network in MKN-45 Cell Line in Response to Ibuprofen

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Abstract: Cancer treatment has improved over last decade. Instead of surgery and radiation therapy as the only option, targeted therapies are now available for different classes of cancer [1]. Recent studies have found potential use of nonsteroidal anti-inflammatory drugs (NSAIDs) for treatment of cancer, despite the fact that these drugs are widely used to relief pain, inflammation, fever [2]. Ibuprofen is one of the common NSAIDs that have been used to inhibit tumorigenesis in different cancer cell lines. For example, it has been shown that ibuprofen changes the gene expression pattern in several pathways in gastric cancer-derived MKN-45 cell line. Cells were treated with ibuprofen for 24, 48 or 72 h and the changes in the gene expression profiles were studied over time after ibuprofen treatment. Surprisingly, ibuprofen was found to be involved in regulation of gene expression in cell-cycle and induces apoptosis pathways [3]. In this study, we have obtained all of gene names in several pathways by David tool. In next step, we got transcription factors (TFs) and miRNAs for genes by using Enricher, then we draw individual networks using Cytoscape software for genes at difference times. Our finding showed that, there are difference between TFs and mirRNAs involved in these pathways at each time points.

Keywords: Cytoscape software; Ibuprofen; Nonsteroidal anti-inflammatory drugs(NSAIDs); MKN-45 cell line.

References

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