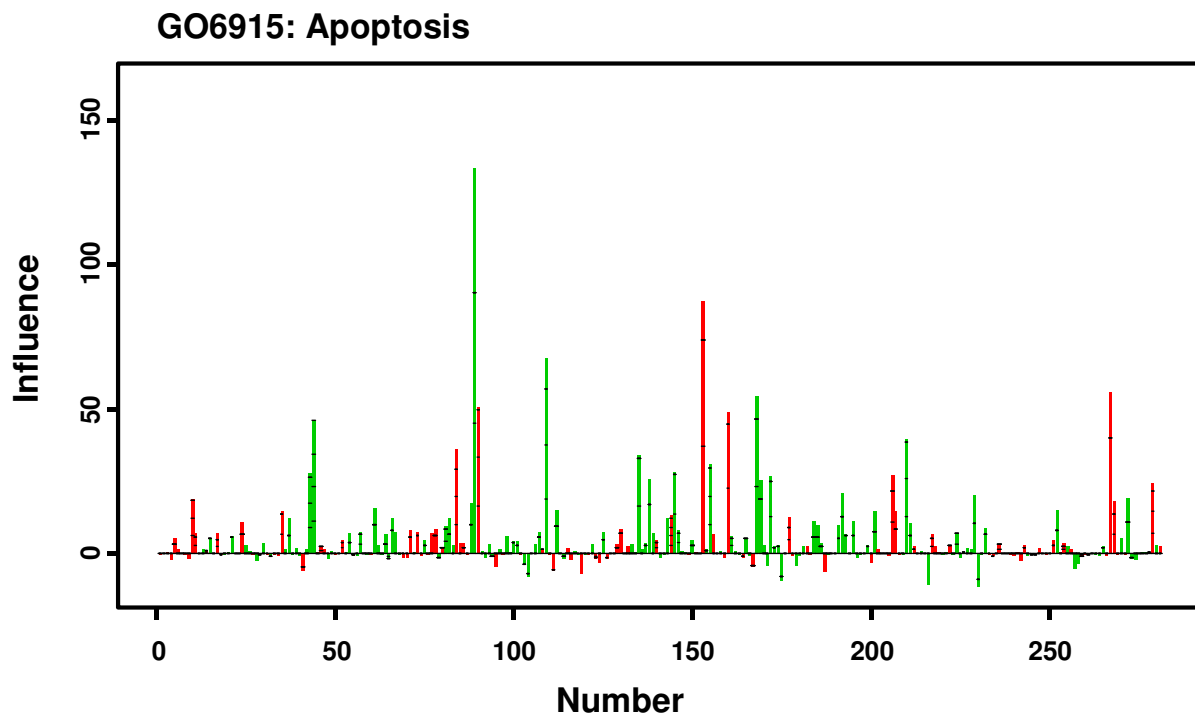


Additional file 1: Top 20 prognostic pathways in ER-positive tumors

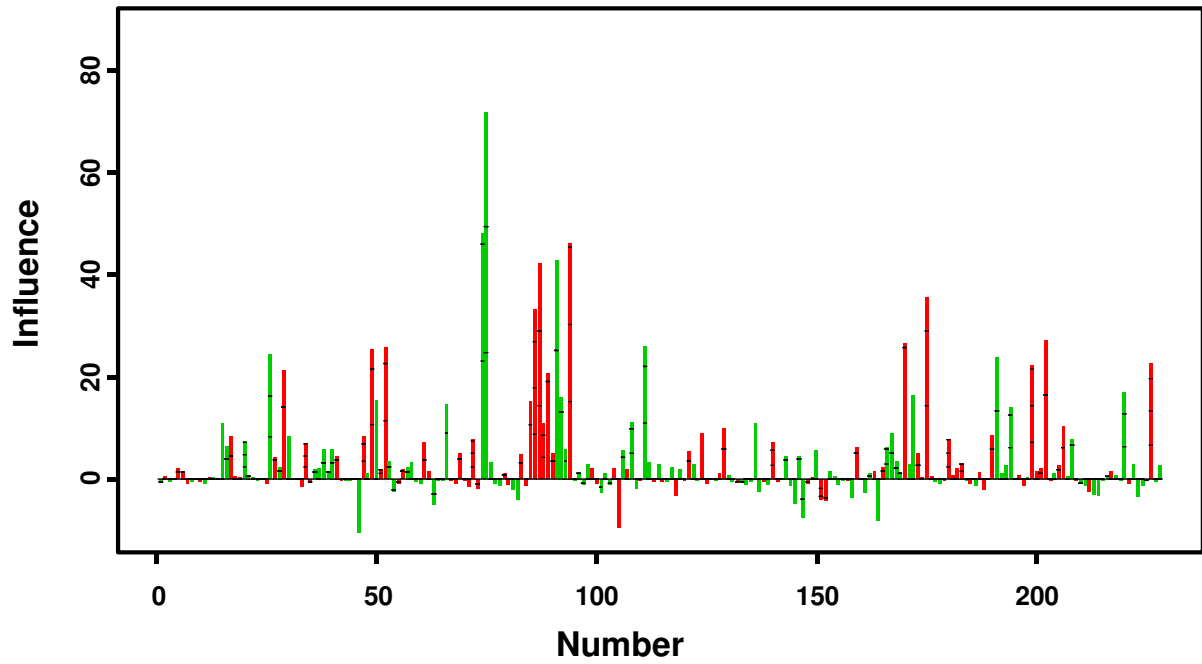
Association of the expression of individual genes with DMFS time for selected over-represented pathways. Geneplot function in the Global Test program [1, 2] was applied and the contribution of the individual genes in each selected pathway is plotted. The numbers at the X-axis represent the number of genes in the respective pathway in ER-positive tumors. The values at the Y-axis, represent the contribution (influence) of each individual gene in the selected pathway with DMFS. Negative values indicate there is no association between the gene expression and DMFS. Each thin horizontal line in a bar (influence) indicates one standard deviation away from the reference point, two or more horizontal lines in a bar indicates that the association of the corresponding gene with DMFS is statistically significant. The green bars reflect genes that are positively associated with DMFS, indicating a higher expression in tumors without metastatic capability. The red bars reflect genes that are negatively associated with DMFS, indicative of higher expression in tumors with metastatic capability. The individual positive and or negative contribution of the significant genes are presented in Additional file 2.

References

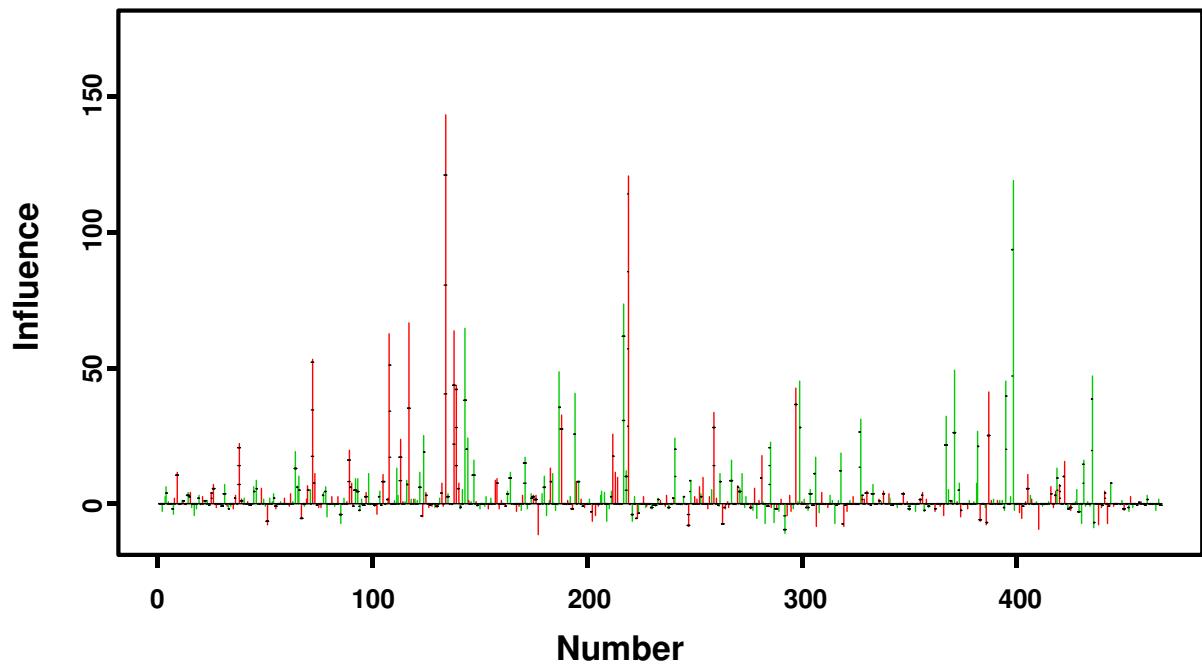
1. Goeman JJ, van de Geer SA, de Kort F, van Houwelingen HC: **A global test for groups of genes: testing association with a clinical outcome.** *Bioinformatics* 2004, **20**:93-99.
2. Goeman JJ, Oosting J, Cleton-Jansen AM, Anninga JK, van Houwelingen HC: **Testing association of a pathway with survival using gene expression data.** *Bioinformatics* 2005, **21**:1950-1957.



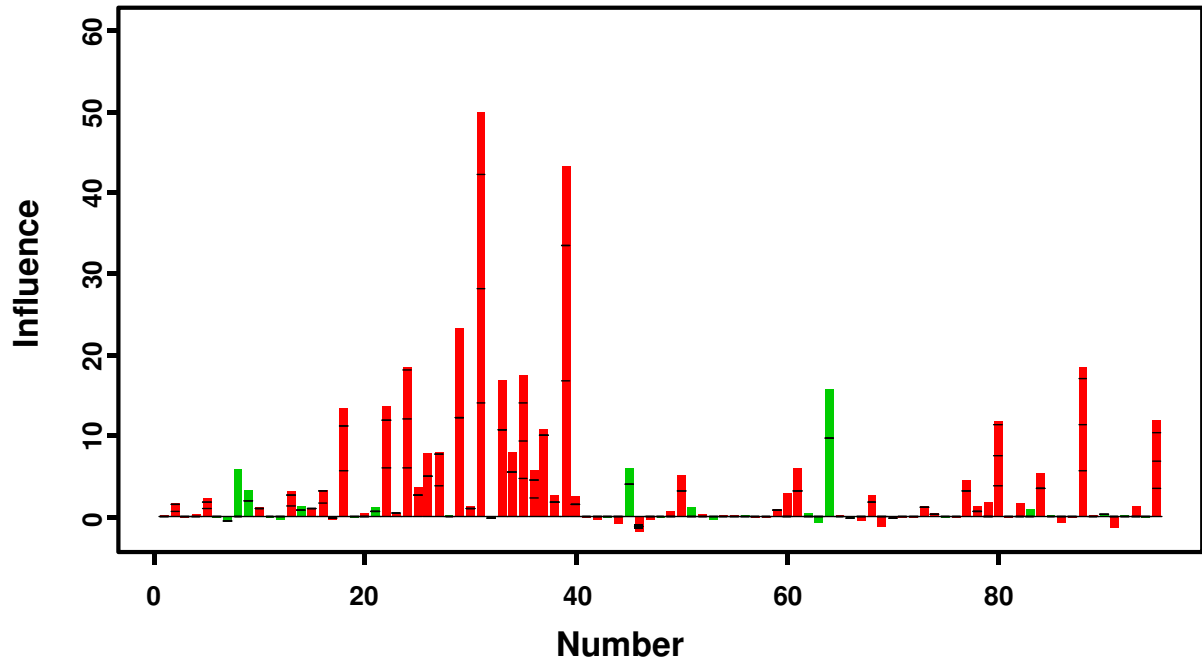
GO74: Regulation of cell cycle



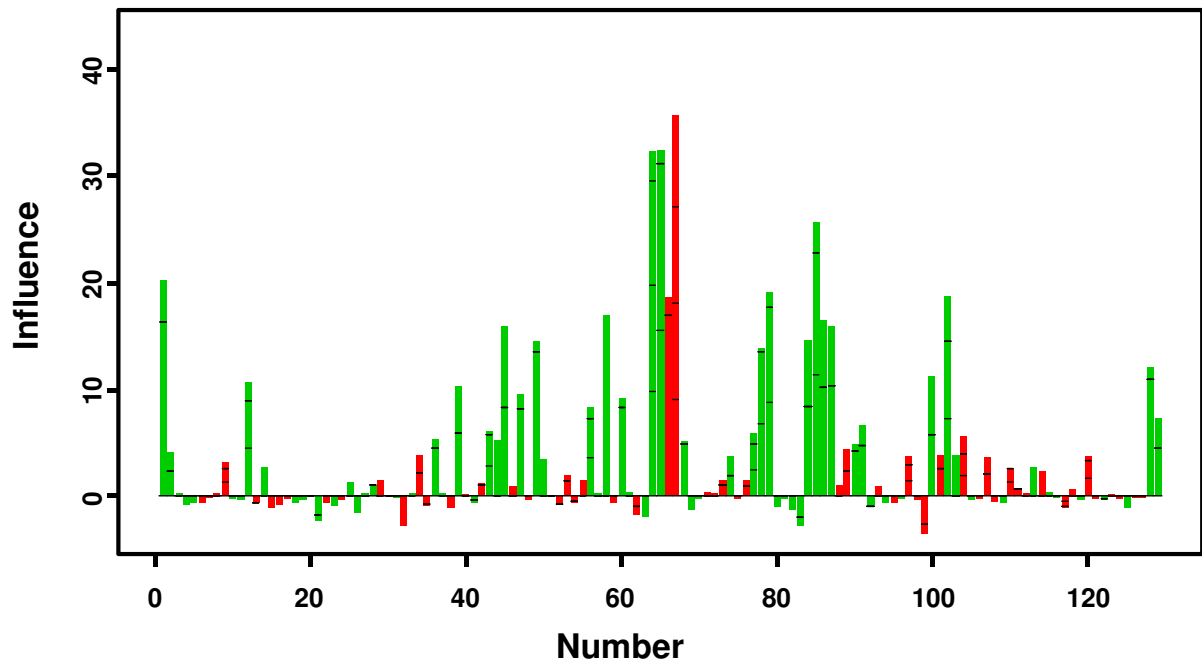
GO6468: Protein amino acid phosphorylation



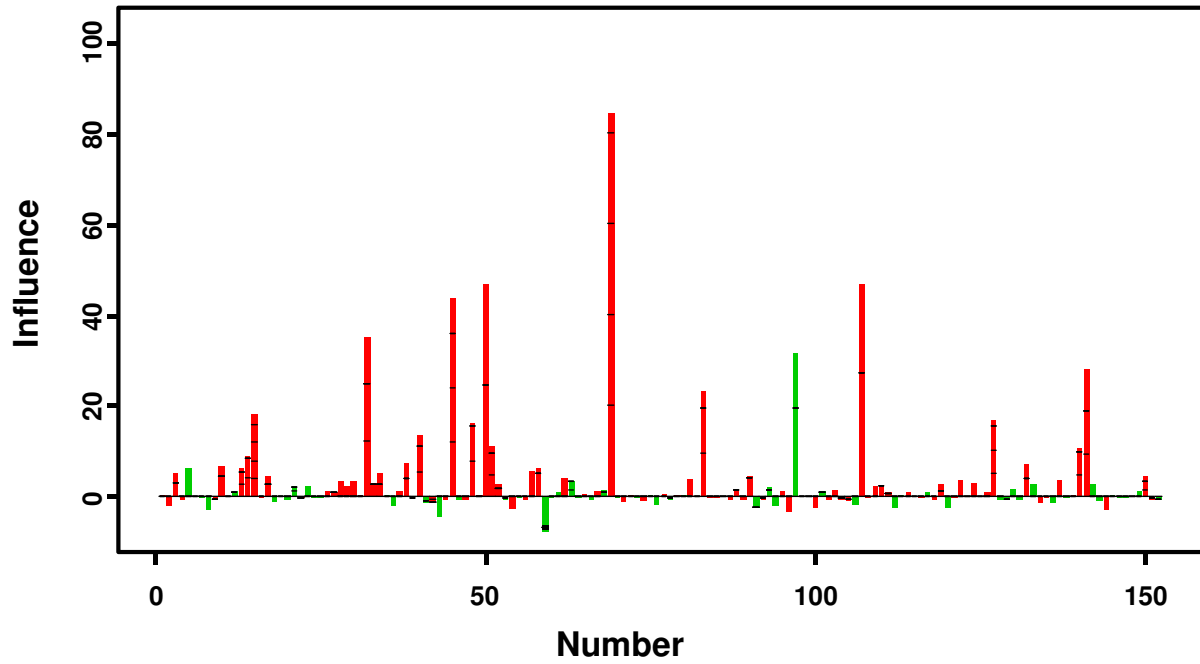
GO910: Cytokinesis



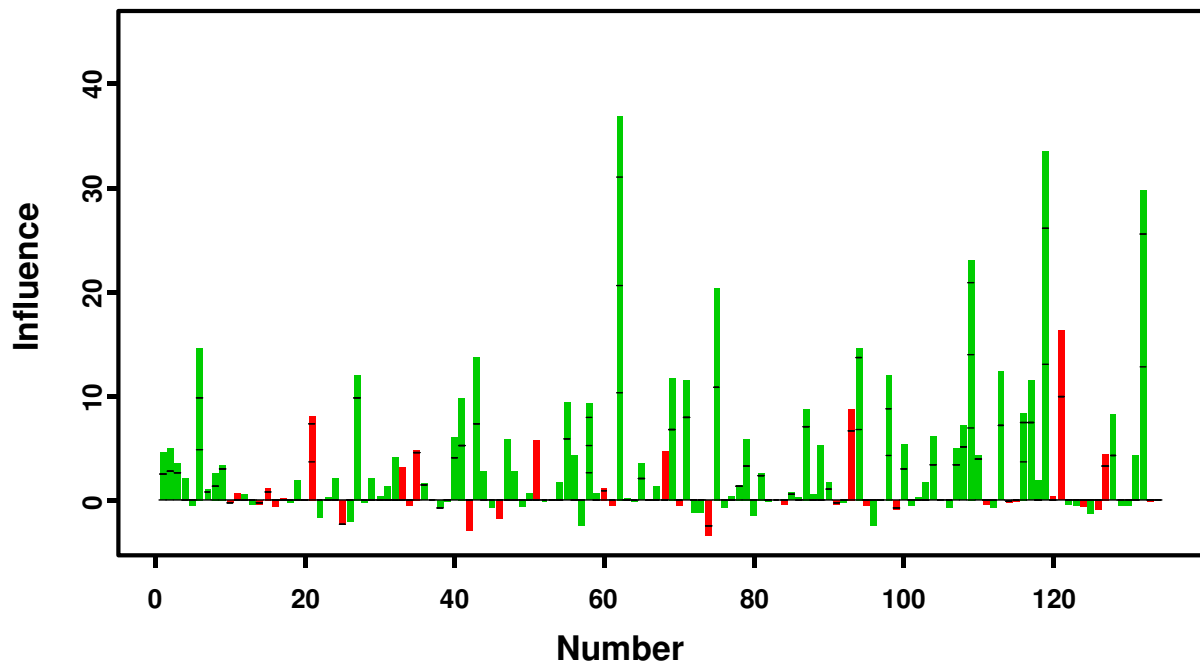
GO6928: Cell motility



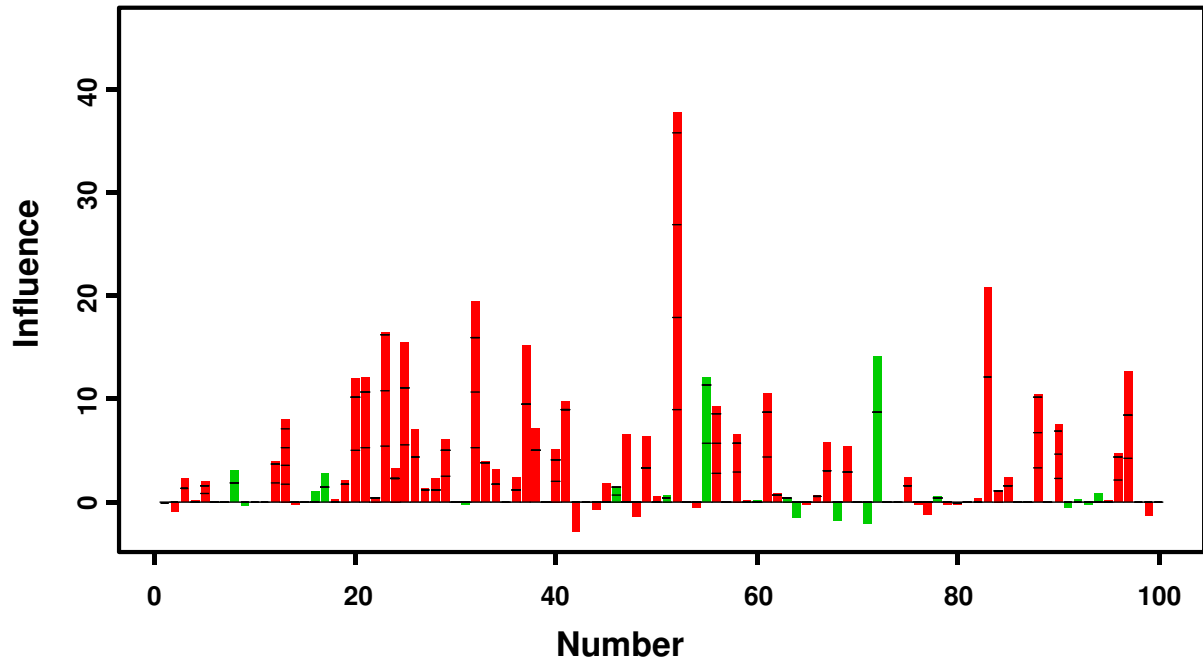
GO7049: Cell cycle



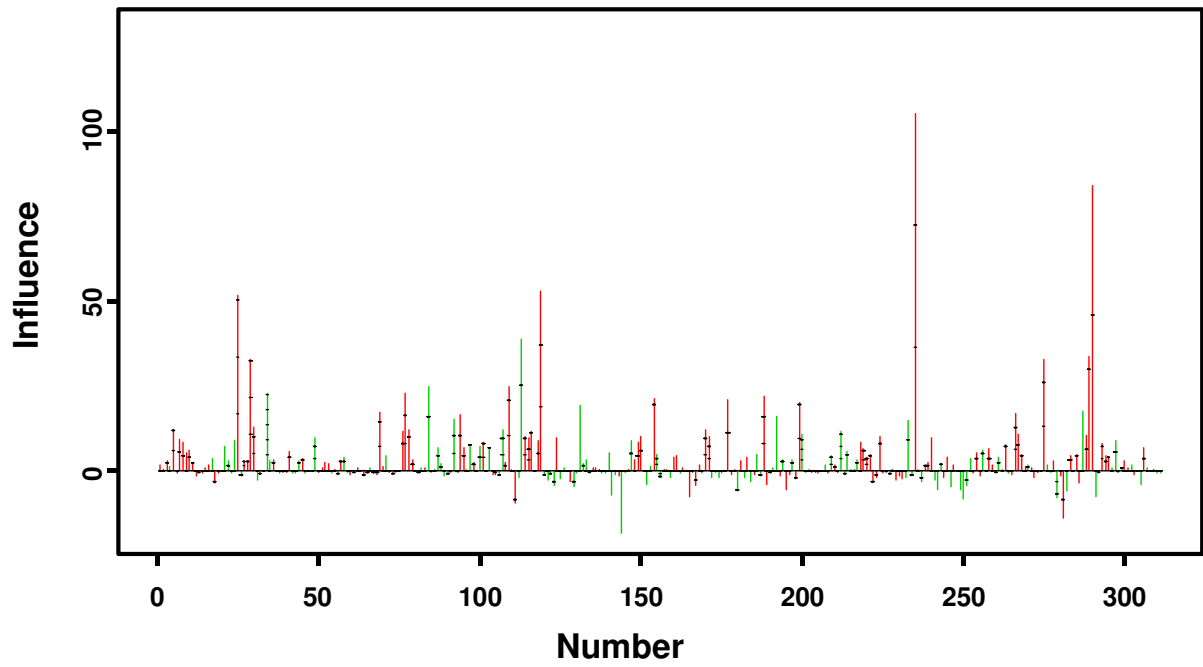
GO7166: Cell surface receptor linked signal transduction



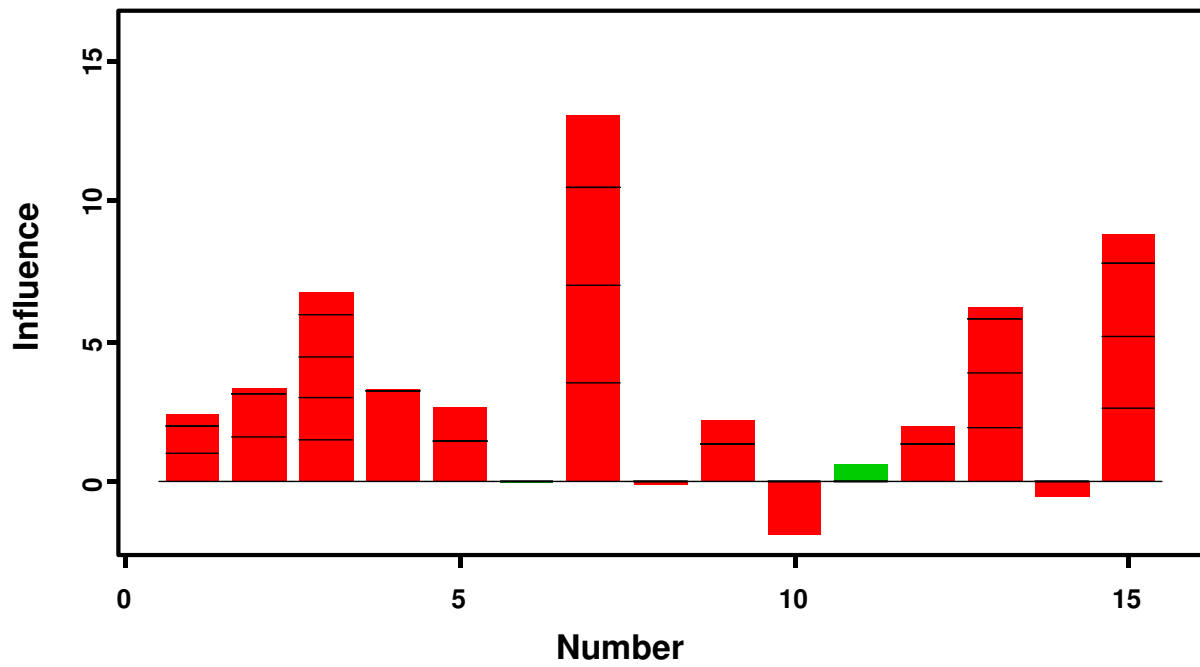
GO7067: Mitosis



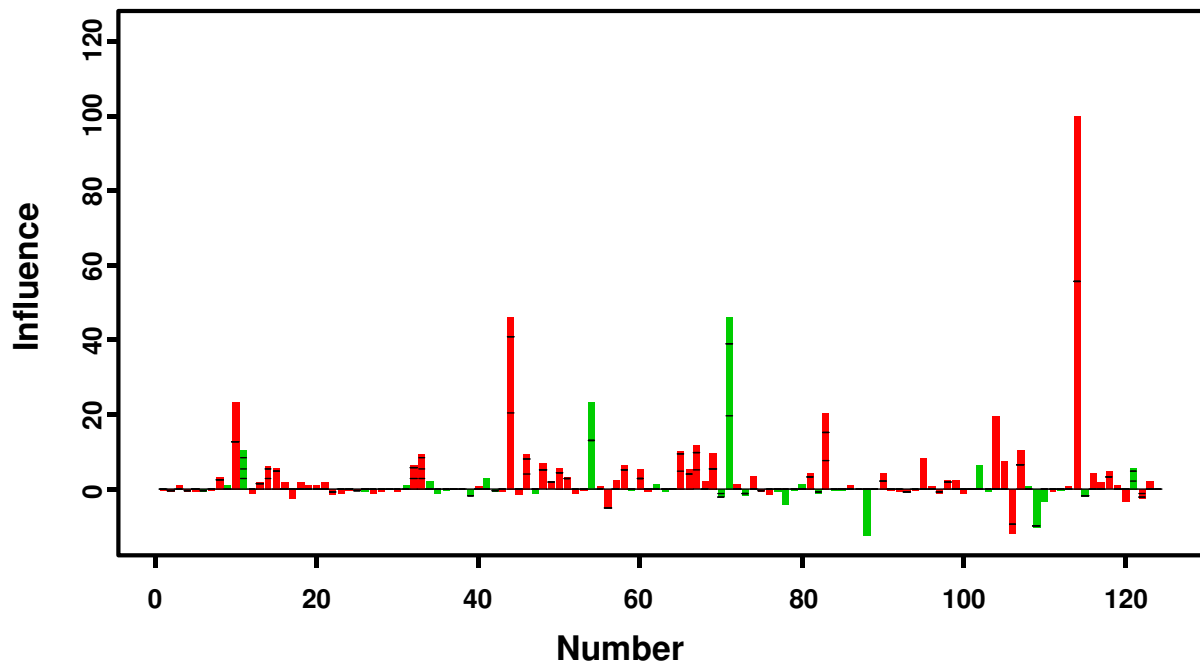
GO6886: Intracellular protein transport



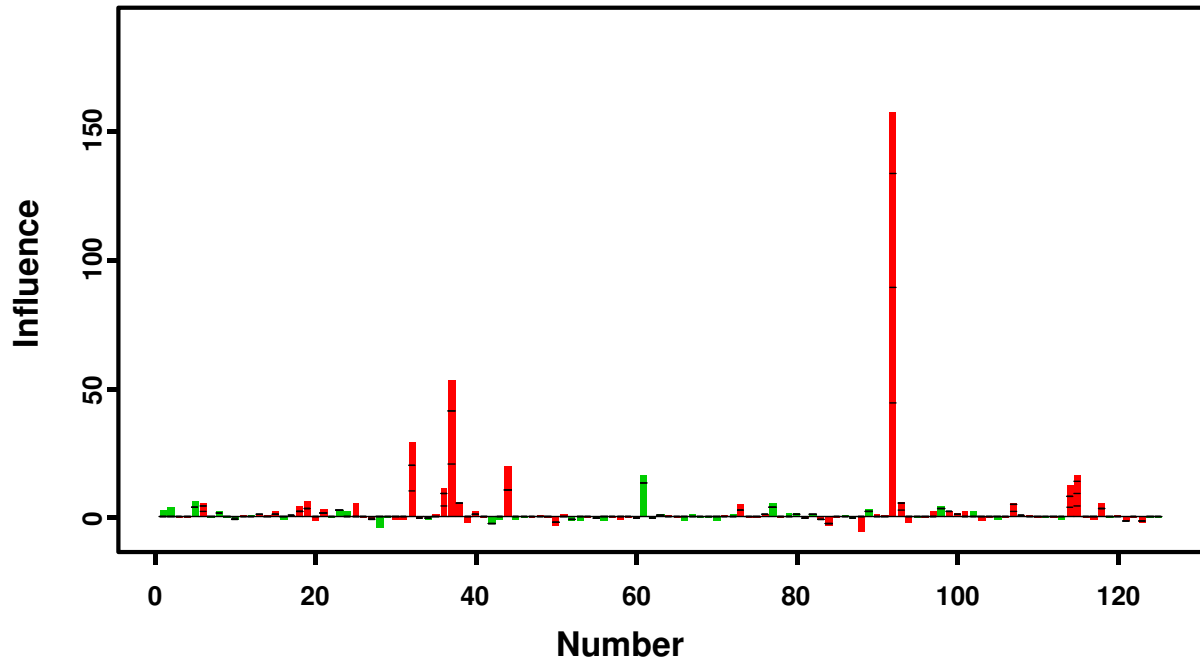
GO70: Mitotic chromosome segregation



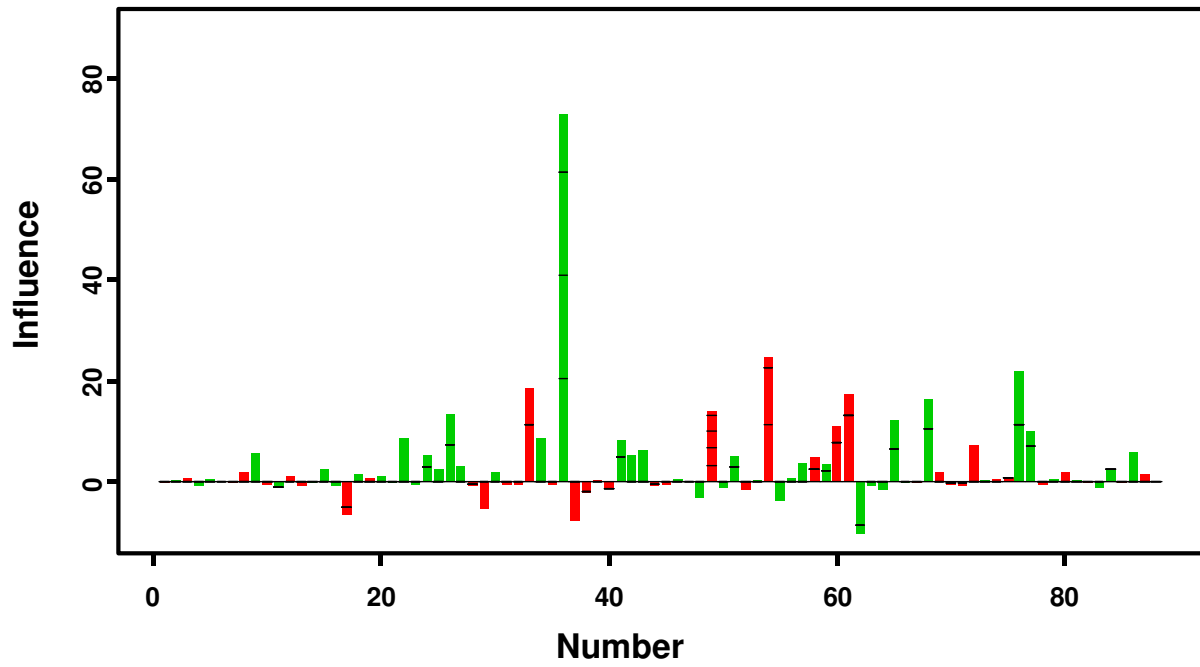
GO6511: Ubiquitin-dependent protein catabolism



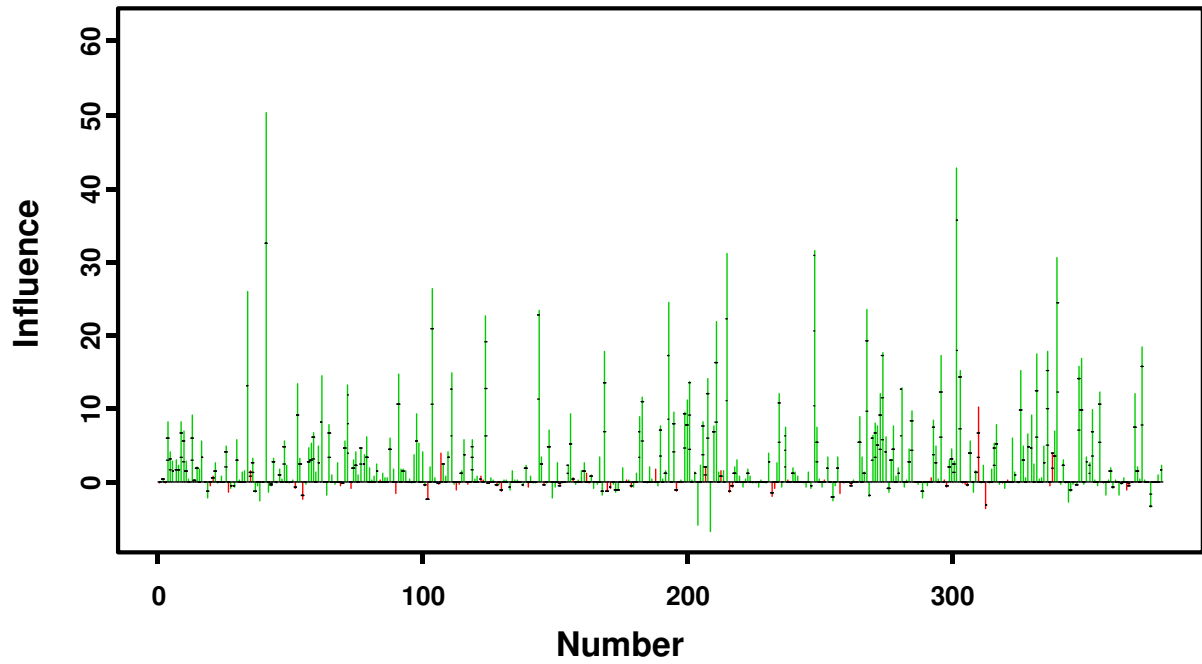
GO6281: DNA repair



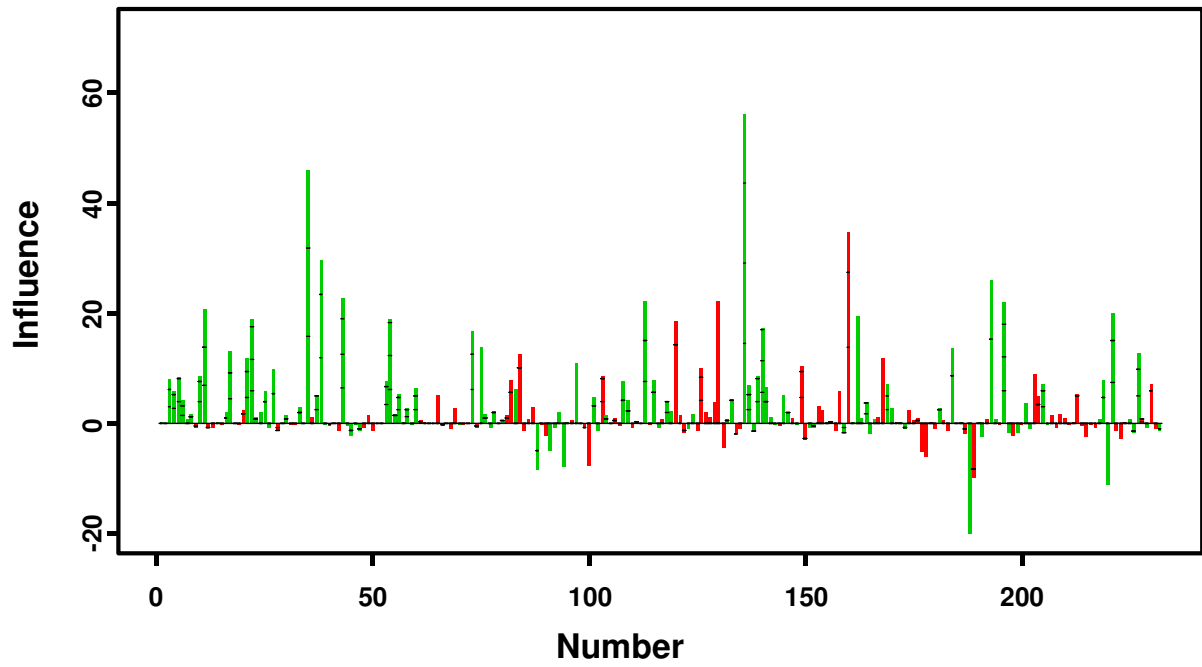
GO6917: Induction of apoptosis



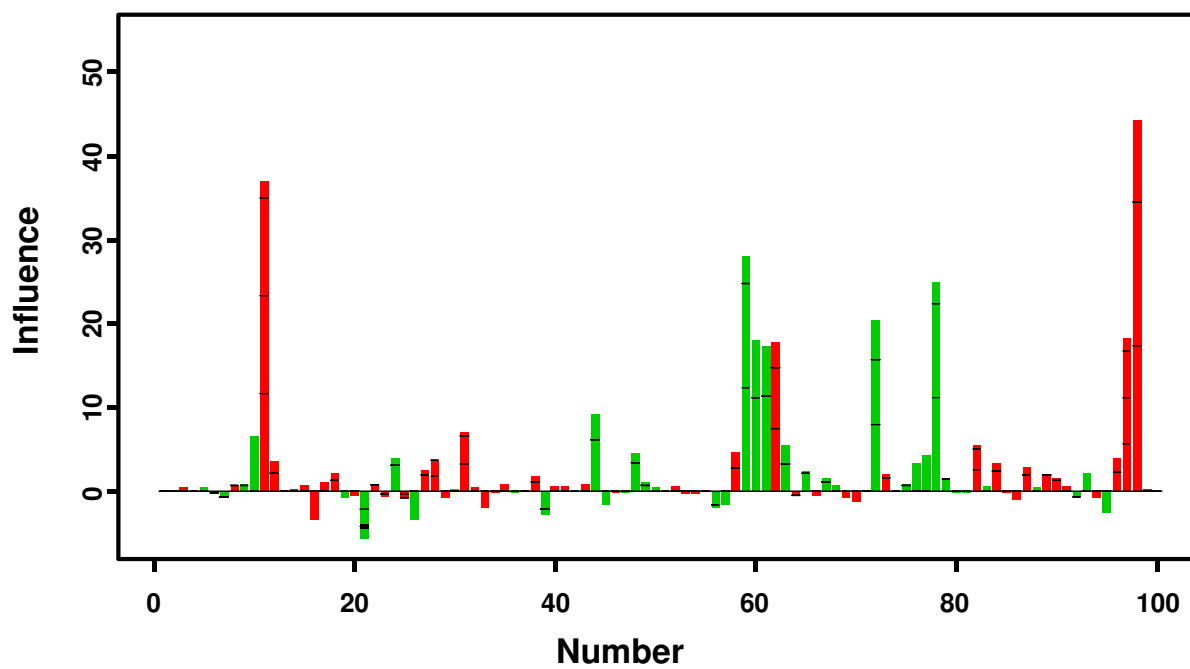
GO6955: Immune response



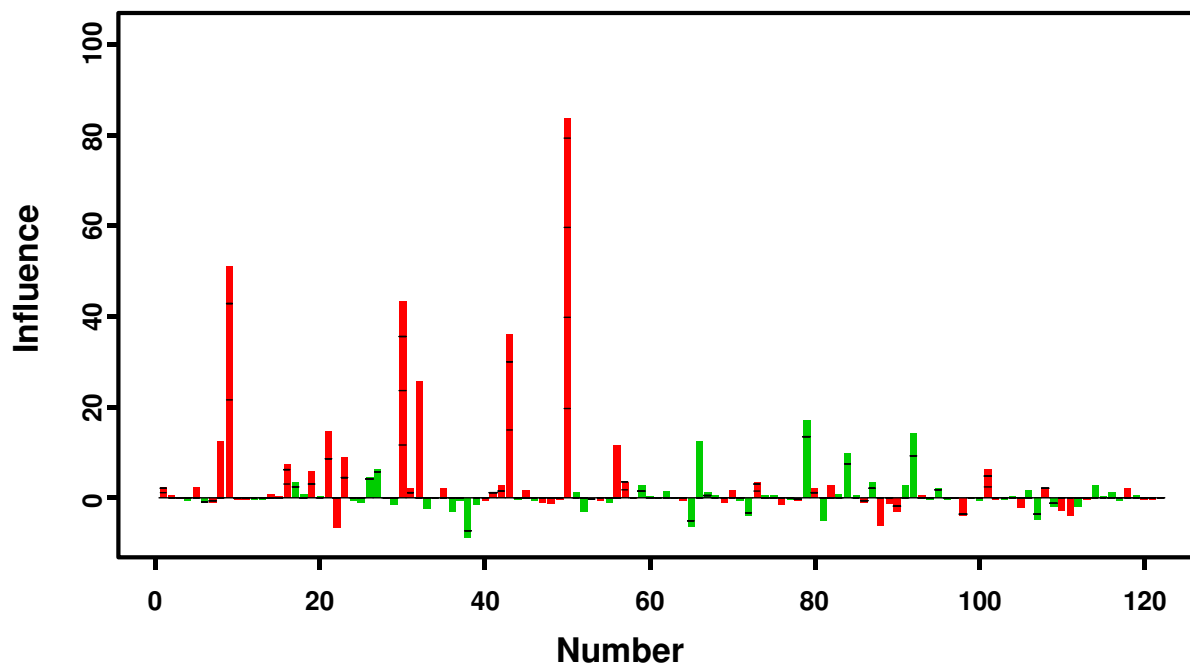
GO6412: Protein biosynthesis



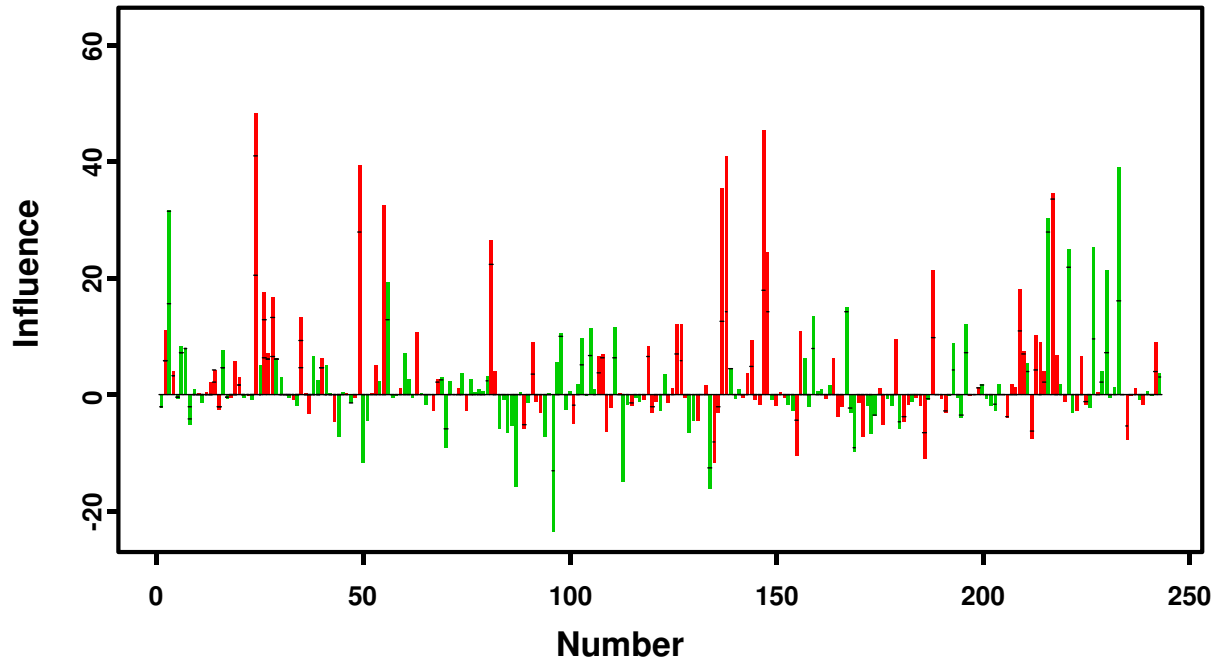
GO6260: DNA replication



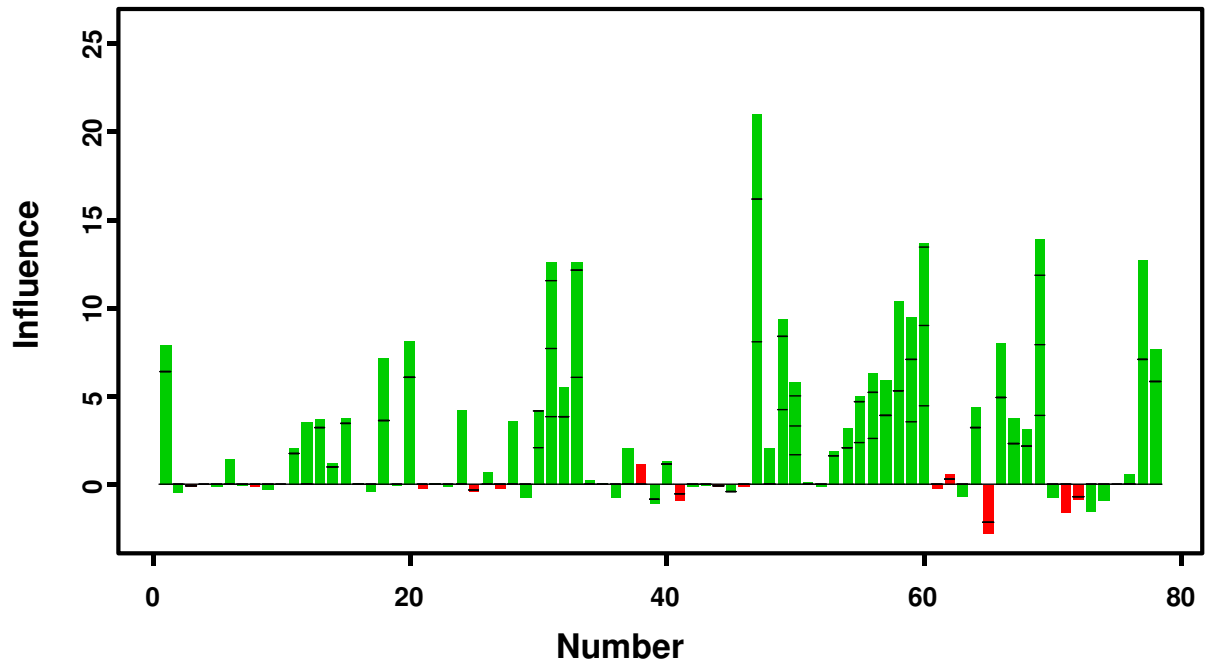
GO7048: Oncogenesis



GO8152: Metabolism



GO6968: Cellular defense response



GO6935: Chemotaxis

