Shelby Thomas

Dr. Pawar

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Microarray technology can be used to determine whether the DNA from a particular individual contains a mutation within their genes. It is extremely resourceful and can also be used to test DNA fragments, antibodies, or proteins. Microarrays are microscope slides that are printed with many different spots in very specific positions, and each spot contains a known DNA sequence or gene. “The main idea behind microarrays is that one nucleic acid is immobilized on a solid support on a solid surface in a predefined location, and then another nucleic acid is hybridized to the surface” (Pevsner 479). This specific technique is typically done within five stages. The first stage of microarray is experimental design. During this stage you will obtain ideal samples which will be used as your control and experimental group, an example of this would be normal vs. cancerous cell line, in which normal would be your control and cancerous would be your experimental. Once you’ve obtained your samples for an ideal experimental design, you would move to stage two. During this stage “RNA is isolated, converted, and labeled with fluorescent dyes…” (Pevsner 462). The typical fluorescent dye that’s used is cy3 and cy5. Cy3 is a red fluorescent dye, while cy5 is a green, fluorescent dye. Stage three and four are data acquisition and analysis. During these stages the samples are mixed and then combine to the microarrays and they (hybridized samples) position themselves to the proper corresponding gene, which allows the data to be analyzed and organized in different types of plots/ graphs. The final stage then takes that data analysis and stores it in a larger database for these new findings to be eventually compared and eventually allow an even larger analysis to be done.

Work Cited

1. Pevsner, Jonathan. (2015). Bioinformatics and Functional Genomics. New Jersey, John Wiley and Sons Inc.