Tissue Microarray â€“A Revolution in Medical Research

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Article published on March 1st 2012 | Technology

Most of the time pathologists face a chronic shortage of tissues to complete their analysis. When a tissue sample is obtained, it needs to be managed in order to maximize its research value. At this point of time, tissue microarrays play a vital role as they enable the high throughput analysis of a large number of tissue samples which are collected and archived using paraffin blocks or formalin. These microarrays make the analysis of tissue samples infected with cancer, tumor or other similar diseases easy by collecting all the information on a single slide.

These microarrays are developed using microtome which sections tissue into 4 â€“ 5 micrometre sections, which are taken from specific areas of interest related to paraffin embedded tissue blocks. The cylindrical cores of tissue are re-embedded into an arrayed blank recipient block on a single slide. Depending on the tissue type and the thickness of the donor tissue blocks, these slides can be sectioned from the recipient block..

One of the major advantages of tissue microarrays is that it is used for studying altered protein expression, cryogenic liberation, genotypic and phenotypic marker identification by pathologists for analysis of patients. Throughput nature of tissue microarray experiments makes them a preferred choice for studying cancer bio-marker identification and discovery. These arrays allow amplification and conservation of scarce tissue samples as well as reduce the number of slides examined..

The various types of tissue microarrays include cryo-tissue microarrays, multi-tumors tissue microarrays, progression tissue microarrays and prognosis tissue microarrays. In the present world of high throughput technology, tissue microarrays have set to revolutionize the histopathological analysis and research. A judicious use of precious tissues gives experimental uniformity for analyzing a large number of samples within the shortest possible time.

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Article Keywords:
Tissue Microarray