

Web-Based Solution for the Management of Tissue Microarray Images and Data

ABSTRACT

Tissue microarray (TMA) technology is a high-throughput tool that helps facilitate translational research by enabling researchers to evaluate the role of normal and abnormal genes as well as gene products from many tissue samples. TMAs are developed by arraying .6mm cylindrical punches from frozen tissue onto paraffin blocks. These blocks are then sectioned horizontally with microtomes to produce multiple layers. These layers are then placed onto glass slides, which are then analyzed. The Neurogenomics division at TGen is able to evaluate the diagnostic, prognostic and therapeutic significance of possible cancer biomarkers as well as the correlation of genotypes with phenotypes. Tissue Microarrays are very cumbersome to construct due to many factors, including limited tissue samples and time required for tissue and array preparation. Due to the extensive time and resources that are invested in the preparation of TMAs, it is desirable to efficiently manage and share the data sets that are generated from a TMA study. To meet this need a web based image and data archive system has been developed. The system includes a database system modeled on the tissue microarray data exchange specification and a web-portal which allows researchers to upload their data and images in an intuitive and efficient manner.