QUALITY CONTROL FROM A SUBSET OF HUMAN SURGICAL TISSUE SPECIMENS FROM THE IU SIMON CANCER CENTER TISSUE PROCUREMENT AND DISTRIBUTION CORE COLLECTED IN 2009-2010: AN H&E AND RIN VALUE ASSESSMENT

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Quality control (QC) of human tissue specimens for research is critical for the development of new bio-markers and their ability to determine clinical trial outcomes. In this study, we evaluated sixty-nine samples for both RNA and histology quality control measures from the IU Simon Cancer Center Tissue Bank. The IU Simon Cancer Center Tissue Bank is a centralized tissue procurement resource established to collect high quality tissue for basic clinical and translational research, collecting approximately 550 clinical cases per year using an informed consent and HIPAA signed document. All tissues are collected and processed in liquid nitrogen within 30 minutes of removal. The tissue samples are sliced and diced into 100 to 150 mg sample size. Each sample is placed into individual 2ml cryovials. Two representative samples are placed in 10% neutral buffered formalin. Two investigators QC the slides by microscopy to evaluate the following: percent of tumor, percent of necrosis, percent of fibrosis/inflammation, and percent of normal adjacent tissue. RNA was extracted using the Purescript RNA isolation kit (Gentra). Fifty-four of sixty-nine cases passed both histology and RNA (RIN value) QC. Of the fifteen cases that did not pass our QC criteria, thirteen cases did not pass the histology QC due to lack of tumor content (below 50%) in the sample, while the remaining two cases failed the RNA QC. Seventy-eight percent of samples passed our QC measures. The results were consistent with the existing literature on tissue quality control in human surgical tissue specimens.

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