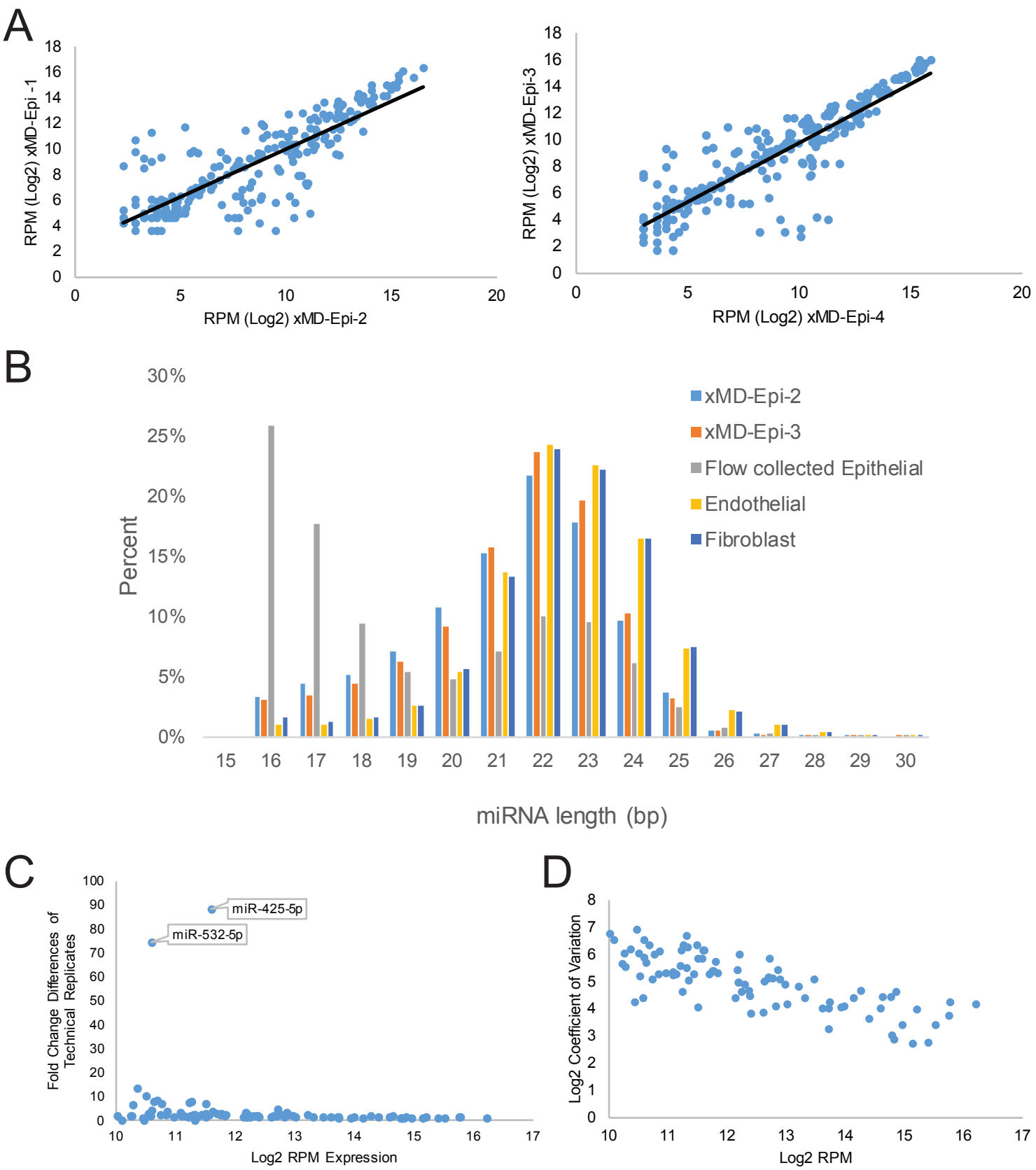
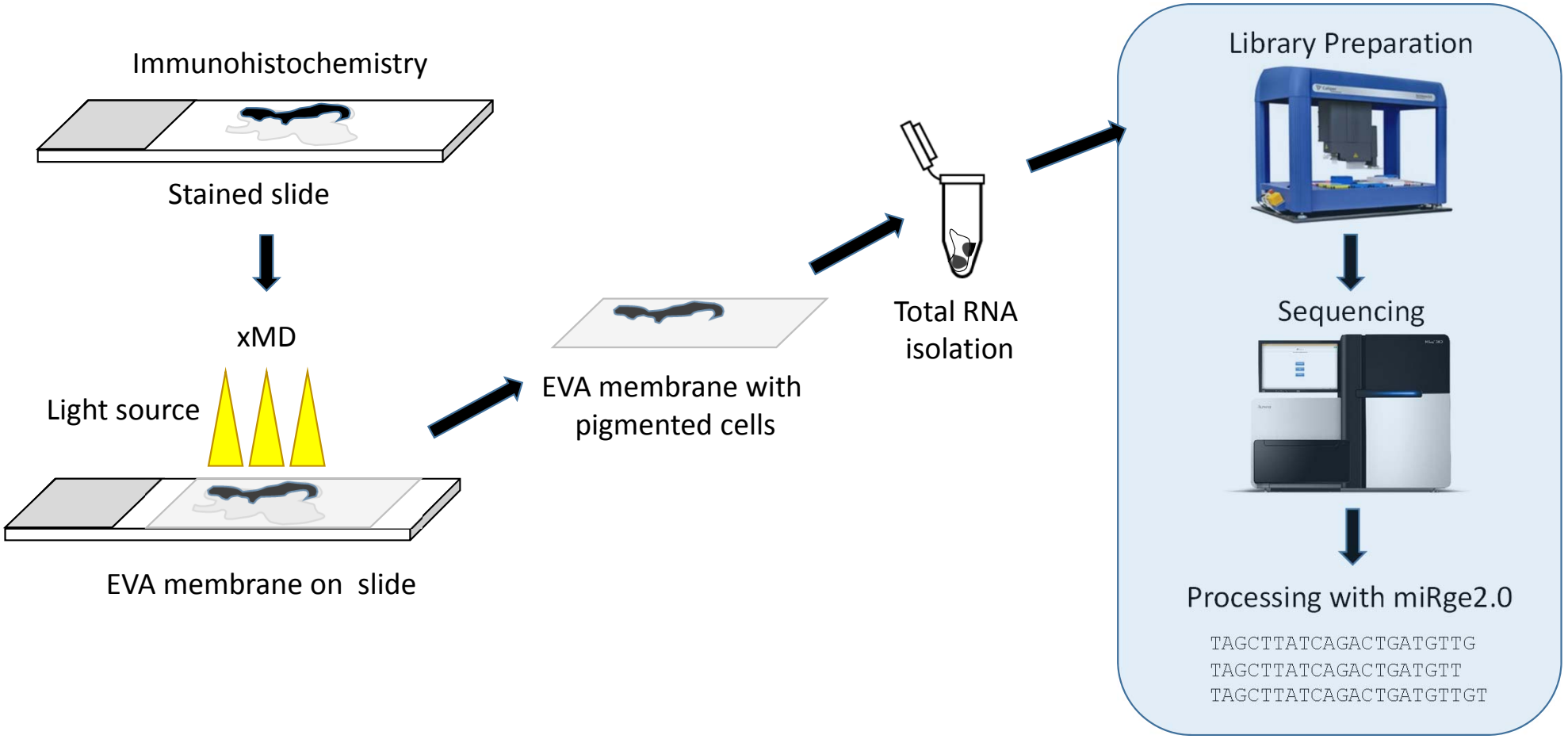


Supplemental Figure 1. A) Pairwise scatter plots of technical replicates of xMD-Epi-1 vs 2 and xMD-Epi-3 vs 4. B) Relative length (in bp) of miRNAs and their isomiRs for 5 samples. The xMD-derived samples are more equivalent to cell culture cell distributions than to the flow collected epithelial cells, which are enriched for shorter sequences. C) A plot of fold change differences between technical replicates of xMD-Epi samples vs average log2 RPM expression showing larger variability occurring with more lowly expressed miRNAs. Two extreme outliers were noted. D) Plot of the coefficient of variation versus log2 RPM expression showing similar overall variation across these 90 miRNA samples.



Supplemental Figure 2. The general workflow of xMD-miRNA-seq. Slides are stained through standard immunohistochemistry using RNA precautions. xMD is performed to transfer pigmented cells from the slide to the EVA membrane. The EVA membrane is placed in a tube and the cell material including RNA is eluted. Then a standard sequencing library preparation, run on a high-throughput sequencer and processing of FASTQ files is performed (blue box).