Furthermore, the nine miRNAs in Fig. S-9 have been associated with cancer in the literature. hsa-mir-7c has been identified as a potential tumor suppressor that is frequently downregulated in prostate cancer [12], and has been recently identified as a miRNA that promotes tumor invasion in cholangiocarcinoma [13]. hsa-mir-100 downregulation has been implicated in liver cancer progression [14], and is a tumor suppressor targeting the mTOR pathway that is underexpressed in clear cell ovarian cancer [15]. hsa-mir-148a is thought to be an early prognostic marker in Hepatitis B mediated hepatocarcinoma [16], and is underexpressed in gastric cancer and associated with poor prognoses [17]. In addition, hsa-mir-149 is thought to behave as an oncogene and tumor suppressor and is significantly dysregulated in several cancer types [18]. Another miRNA, hsa-mir-370, is thought to function as a tumor suppressor in laryngeal carcinoma and is downregulated in these tumors [19]. hsa-mir-654 has been implicated in oral squamous cell carcinoma as a potential biomarker due to its proliferative and metastatic potential [20]. In addition, hsa-mir-654 and other miRNAs mapped to its genomic locus, have been found to regulate proliferation, migration, and invasive properties in metastatic prostate cancer cells [21]. In liver cancer, hsa-mir-758 is reported to be a tumor suppressor and is underexpressed in liver cancer [22]. hsa-mir-766 is part of the p53 signaling pathway and has recently been proposed as a tumor suppressor by promoting p53 signaling, and is underexpressed in breast cancer [23]. In addition, repression of hsa-mir-766 through DNA methylation has been associated with aggressive renal cell carcinoma [24]. Finally, hsa-mir-93 is an oncogene that bolsters tumor growth and angiogenesis across several cancer types [25]. For instance, its upregulation in head and neck cancer is associated with metastasis and poor prognosis [26].

Figure S-9: Overlap of genes (left) and miRNAs (right) across cancer types in significant regQTL trios.