

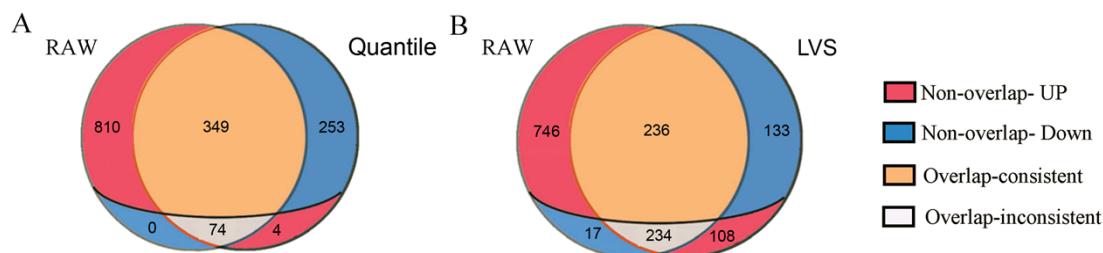
Supplementary Tables:

Supplementary Table 1 Comparison of the median raw signal intensities of gene expression in cancer samples and normal samples.

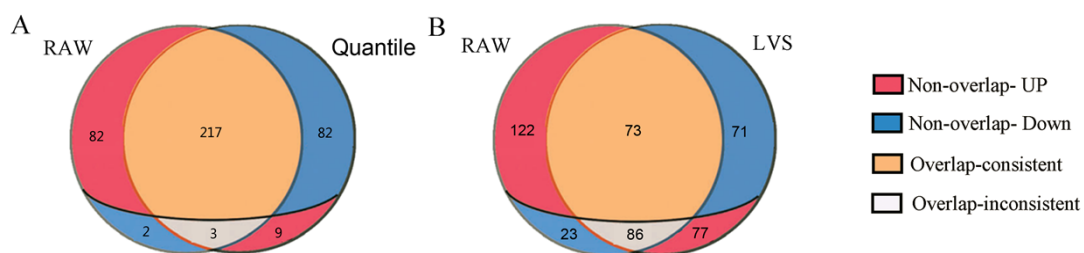
Dataset	GSE ID	Median of Cancer	Median of Normal	P value
Breast22	GSE10780	5.86	5.55	0.062
Breast24	GSE16873	5.88	5.85	0.94
Colon34	GSE18105	5.98	5.53	6.46E-04
Colon64	GSE8671	5.32	5.39	0.20
Esophagus24	GSE29001	7.06	6.96	0.27
Esophagus34	GSE20347	6.45	6.08	0.092
Esophagus106	GSE23400	7.24	6.90	1.43E-04
Gastric24	GSE19826	4.51	4.42	0.81
Gastric62	GSE13911	5.25	4.95	0.048
Hnc44	GSE6631	5.66	5.51	0.063
Liver20	GSE29721	4.40	3.57	1.51E-03
Lung54	GSE7670	6.05	6.27	0.44
Lung60	GSE31552	6.68	6.57	0.62
Lung66	GSE10072	7.78	7.35	0.80
Lung88	GSE18842	4.42	4.35	0.057
Otscc24	GSE9844	4.10	3.97	0.30
Otscc40	GSE13601	6.43	6.01	9.98E-03
Pancreatic30	GSE16515	5.13	4.91	0.024
Pancreatic78	GSE15471	5.75	5.52	7.30E-04
Pancreatic90	GSE28735	4.54	4.18	4.27E-03
Prostate116	GSE6919	4.75	4.70	0.60
Ptc40	GSE29265	4.63	4.58	0.88
Renal20	GSE6344	6.20	6.20	0.65

Note: Median of Cancer represents the median of the raw signal intensities in the cancer samples. Median of Normal represents the median of the raw signal intensities in the normal samples. P value: the P value of the medians between cancer samples and normal samples, according to the Wilcoxon rank-sum test.

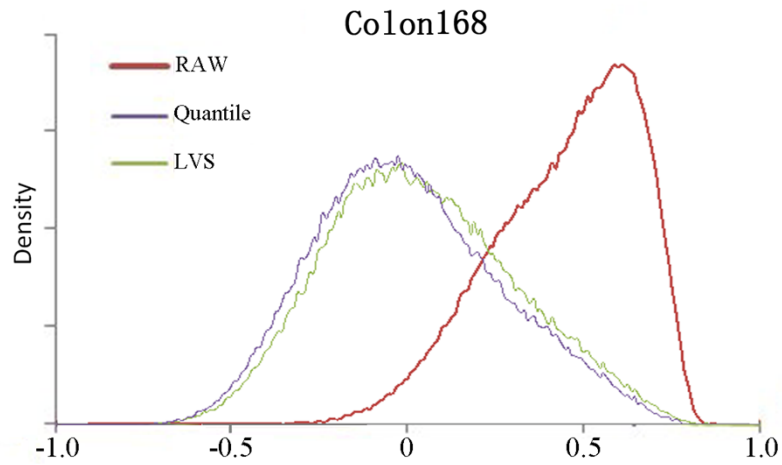
Supplementary Figures:



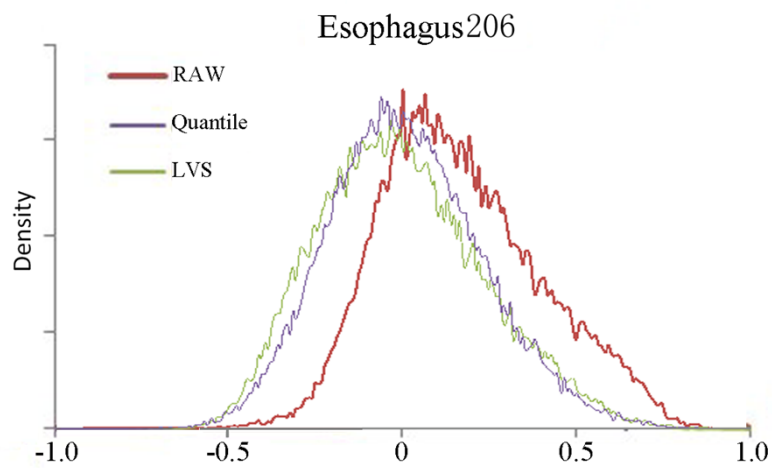
Supplementary Figure 1 Normalization may change the expression directions of differentially expressed miRNAs in the miRNA Colon168 dataset. Overlap-consistent represents the set of miRNAs showing differential expression before and after normalization with the same expression direction. Overlap-inconsistent represents the set of miRNAs showing differential expression before and after normalizations with inconsistent expression directions. Non-overlap-up represents the up-regulated miRNAs that were selected as differentially expressed only before or only after normalization. Non-overlap-down represents the down-regulated miRNAs that were selected only before or only after normalization.



Supplementary Figure 2 Normalization may change the expression directions of differentially expressed miRNAs in the Esophagus206 dataset. Overlap-consistent represents the set of miRNAs showing differential expression before and after normalization with the same expression direction. Overlap-inconsistent represents the set of miRNAs showing differential expression before and after normalization, but with inconsistent expression directions. Non-overlap-up represents the up-regulated miRNAs that were selected as differentially expressed only before or only after normalization. Non-overlap-down represents the down-regulated miRNAs that were selected only before or only after normalization.



Supplementary Figure 3 The density distribution of the pair-wise Pearson correlation coefficients before and after normalizations for the miRNA Colon168 dataset.



Supplementary Figure 4 The density distribution of the pair-wise Pearson correlation coefficients before and after normalizations for the miRNA Esophagus206 dataset.