**Supplementary Figures and Tables**



**Figure S1: Clustering analysis showed expression distribution of circRNAs across different samples.**

Note: The names of the circRNA are mainly their locations on chromosomes.



**Figure S2: Venn's distributions of expressed circRNAs between paired normal and tumor samples.**

A-E. Expressed circRNAs between paired normal and tumor samples; F. expressed circRNAs between all the pooled normal and tumor samples. The third samples were removed from the further analysis because fewer circRNAs were detected.



**Figure S3: Clustering analysis and** **volcano distribution of miRNAs.**

A. Clustering analysis of some miRNAs across different samples; B. volcano distribution of miRNAs.

Note: miRNAs in a specific sample (No. 4) were not involved in the relevant analysis because of outlier with other samples.

**Table S1: Patients characteristics of 5 male patients with esophageal squamous cancer.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Age**  | **Virus infection** | **History of smoking and drinking** | **Pathological condition** | **Lymph gland** |
| 67 | no | Smoking for 30 years | Moderate differentiation | Reactive hyperplasia of lymph node |
| 60 | no | no | Medium-high differentiation | No metastasis |
| 67 | no | Intermittently, small amount of alcohol and smoking  | Poor differentiation | Reactive proliferation |
| 63 | no | Intermittently, small amount of alcohol and smoking | Moderate or poor differentiation | Cancerometastasis |
| 64 | no | no | Moderate differentiation | Cancerometastasis |

**Table S2: Selected** **deregulated circRNAs and their interacted deregulated miRNAs.**

|  |  |
| --- | --- |
| **circRNA:miRNA** | **Deregulation pattern of circRNA:miRNA** |
| circ-AGTPBP1**:**miR-490-3p | Up**:**Down |
| circ-ANKRD17**:**miR-490-3p | Up**:**Down |
| circ-ANKRD17**:**miR-3118# | Up**:**Down |
| circ-ANKRD17**:**miR-124-3p | Up**:**Down |
| circ-ARIH1**:**miR-26a-5p# | Down**:**Down |
| circ-FAM120B**:**miR-133a-3p# | Up**:**Down |
| circ-FAM120B**:**miR-133b# | Up**:**Down |
| circ-GMPS**:**miR-217# | Up**:**Down |
| circ-GMPS**:**miR-490-3p | Up**:**Down |
| circ-LRBA**:**miR-3118# | Down**:**Down |
| circ-PAPD4**:**miR-124-3p | Up**:**Down |
| circ-SEC11A**:**miR-216b-5p# | Up**:**Down |
| circ-SP140L**:**miR-520c-3p# | Up**:**Up |
| circ-SP140L**:**miR-520d-3p# | Up**:**Up |
| circ-SP140L**:**miR-373-3p | Up**:**Up |
| circ-SP140L**:**miR-216b-5p# | Up**:**Down |
| circ-SP140L**:**miR-124-3p | Up**:**Down |
| circ-SP140L**:**miR-302d-3p# | Up**:**Down |
| circ-SP140L**:**miR-302b-3p# | Up**:**Down |

Note: the miRNA-circRNA pairs are obtained based on deregulated circRNAs.

# shows the miRNA is found biological difference (log2FC > 2 or log2FC < -2) but no significant difference is detected (FDR > 0.05).