**Supplementary materials**

**Table S1: Primer sequence of related genes in our study.**

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| --- | --- | --- |
| **Gene** | **Primer** | **Sequence (5’-3’)** |
| ***Hsa-circ-***  ***0048117*** | Forward | CAACAGCATCAGCATGTCGG |
| Reverse | CGCTTCTCACACTCGTAGGG |
| ***miR-140*** | Forward | ACACTCCAGCTGGGCAGTGGTTTTACCCTA |
| Reverse | TGGTGTCGTGGAGTCG |
| ***miR-1184*** | Forward | GCGCCTGCAGCGACTTGATG |
| Reverse | ATCCAGTGCAGGGTCCGAGG |
| ***miR-663b*** | Forward | CGCCGCTAATAGTATCTACCAC |
| Reverse | GTGCAGGGTCCGAGGT |
| ***miR-635*** | Forward | TATAGCATATGCAGGGTG |
| Reverse | CGCATTCGGAGTGCGAGTT |
| ***miR-1247*** | Forward | ACCCGTCCCGTTCGTC |
| Reverse | TGCAGGGTCCGAGGTATTC |
| ***miR-1205*** | Forward | CTGCAGGGTTTGCTTTGAGG |
| Reverse | CTCCAGAACAGGGTTGACAGG |
| ***miR-647*** | Forward | TGCGGGTGGCTGCACTCACT |
| Reverse | CCAGTGCAGGGTCCGAGGT |
| ***miR-147b*** | Forward | GTGTGCGGAAATGCTT |
| Reverse | TCAACTGGTGTCGTGG |
| ***miR-1197*** | Forward | TAGGACACATGGTCTACTTCT |
| Reverse | CTCAACTGGTGTCGTGGA |
| ***miR-1203*** | Forward | AGCCAGGATGCAGCTCAAA |
| Reverse | CTCAACTGGTGTCGTGGA |
| ***TLR4*** | Forward | ATCTCAGCAAAATCCCTCAT |
| Reverse | AATCCAGCCACTGAAGTTGT |
| ***GAPDH*** | Forward | AGGTCGGTGTCAACGGATTT |
| Reverse | CCTTCCACGATGCCAAAGTT |

**Figure S1: M2 macrophages could enhance the invasion and migration ability of ESCC cells.**

(A and B): Invasion ability of TE-1 cells co-cultured with macrophages treated with exosomes was determined by the in vitro transwell co-culture system (\*\*\*\*p<0.001). (C and D): Migration ability of TE-1 cells co-cultured with macrophages treated with exosomes was determined by the in vitro transwell co-culture system (\*\*\*\*p<0.001).

M: Macrophage, M+N-Exo: Macrophage + Normoxic-exosomes, M+H-Exo: Macrophage + Hypoxic-exosomes, M+H-siExo: Macrophage + Hypoxic-exosomes (circRNA-silenced).

