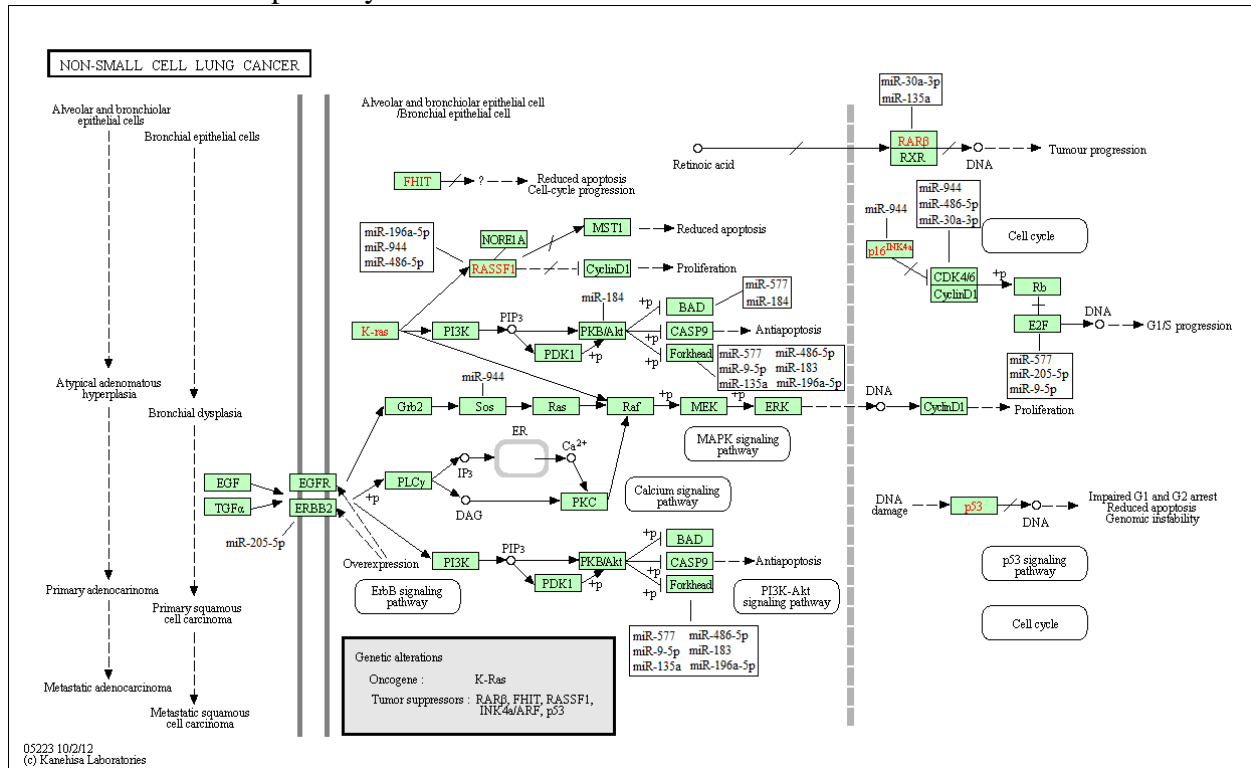
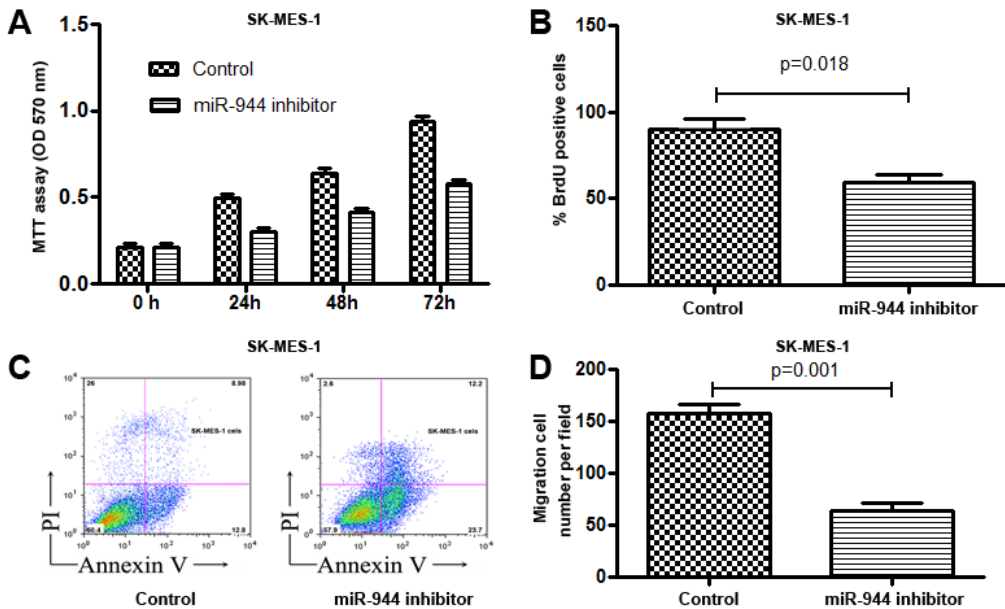


Supplementary file

Supplementary Fig. 1. Pathway analysis suggests that dysregulations of the miRNA signatures are involved in NSCLC pathway.

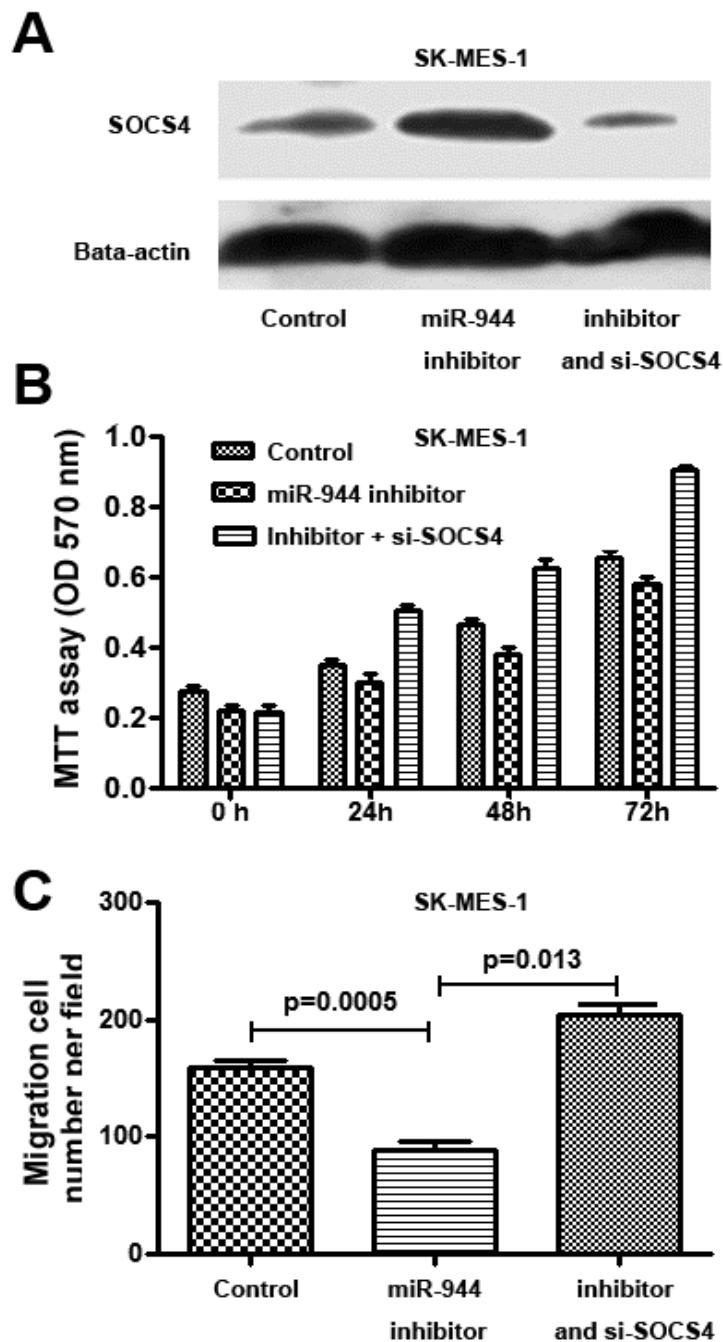


Supplementary Fig. 2. Downregulation of miR-944 inhibits NSCLC cell growth, proliferation, migration, and invasion.



A, reduced expression of miR-944 in SK-MES-1 cells decreased cell growth. B, reduced expression of miR-944 diminished cell proliferation of NSCLC. C, reduced expression of miR-944 in SK-MES-1 cells increased apoptosis. D, reduced expression of miR-944 in SK-MES-1 cells decreased cell invasion and migration. All data were obtained from three independent experiments and shown as mean ± SD. The experiments were performed in two cell lines, SK-MES-1 and H292, and generated similar data. The figure only showed the results from SK-MES-1.

Supplementary Fig. 3. SOCS4 is involved in miR-944-induced suppression of cell migration and invasion of NSCLC.



A, SK-MES-1 cells treated with both miR-944 inhibitor and si-SOCS4 exhibited a lower level of SOCS4 expression compared with cells treated with miR-944 inhibitor alone. B, SK-MES-1 cells treated with both miR-944 inhibitor and si-SOCS4 had a higher rate of cell growth compared with cells treated with miR-944 inhibitor. C, SK-MES-1 cells treated with both miR-944 inhibitor and si-SOCS4 had higher levels of migration and invasion compared with cells treated with miR-944 inhibitor.

Supplementary Table 1. Demographic and histopathological characteristics of 108 NSCLC patients

| Parameter | Mean | % |
|-------------------------|------|------|
| Age, years | 68.3 | |
| Gender | | |
| Men | 69 | 63.8 |
| Women | 39 | 36.2 |
| Race | | |
| White American | 80 | 74 |
| African American | 28 | 26 |
| Histology | | |
| Squamous cell carcinoma | 54 | 50 |
| Adenocarcinoma | 54 | 50 |
| Stage | | |
| I | 68 | 63 |
| II | 20 | 18.5 |
| III-IV | 20 | 18.5 |

Abbreviations: NSCLC, non-small cell lung cancer.

Supplementary Table 2. Demographic and clinical characteristics of 52 SCC patients and the association with miR-944 expression in tumor tissue specimens

| Characteristics | Number of cases | (%) | p | |
|-----------------|-----------------|-----|--------|-------|
| Gender | Male | 39 | 75.00% | 0.629 |
| | Female | 13 | 25.00% | |
| Age, year | ≥60 | 38 | 73.08% | 0.183 |
| | <60 | 14 | 26.92% | |
| T status | 1 | 21 | 40.38% | 0.465 |
| | 2 | 25 | 48.08% | |
| | 3 | 3 | 5.77% | |
| | 4 | 3 | 5.77% | |
| N status | No | 31 | 59.62% | 0.002 |
| | Yes | 21 | 40.38% | |
| Stage I | I | 28 | 53.85% | 0.036 |
| | II | 8 | 15.38% | |
| | III-IV | 16 | 30.77% | |

Supplementary Table 5. The AUCs of seven miRNAs displaying different expression between SCC and AC

| miRNAs | P-value | AUC | 95% confidence interval |
|-------------|---------|--------|-------------------------|
| miR-205-5p | <0.001 | 0.9133 | 0.8386 to 0.9881 |
| miR-944 | <0.001 | 0.8967 | 0.8141 to 0.9793 |
| miR-183-3p | <0.001 | 0.8931 | 0.7984 to 0.9878 |
| miR-205-3p | <0.001 | 0.8931 | 0.7984 to 0.9878 |
| miR-135a-5p | <0.001 | 0.8744 | 0.7809 to 0.9680 |
| miR-147b | <0.001 | 0.7943 | 0.6755 to 0.9130 |
| miR-577 | 0.001 | 0.76 | 0.6375 to 0.8825 |

Abbreviations: AUC, the area under receiver operating characteristic curve.

Supplementary Table 6. Kyoto Encyclopedia of Genes and Genomes

| pathway | p-value |
|---|-------------|
| Pathways in cancer | 0.000250605 |
| Non-small cell lung cancer | 0.000714102 |
| Glioma | 0.000831501 |
| Melanoma | 0.001100426 |
| Chronic myeloid leukemia | 0.001775331 |
| Focal adhesion | 0.01159417 |
| Prostate cancer | 0.01160361 |
| Transcriptional misregulation in cancer | 0.01187092 |
| Malaria | 0.01187092 |
| Pancreatic cancer | 0.01187092 |
| HIF-1 signaling pathway | 0.01231473 |
| Viral carcinogenesis | 0.01808485 |
| Cell cycle | 0.01921407 |
| Wnt signaling pathway | 0.02074698 |
| Adherens junction | 0.02650581 |
| Bladder cancer | 0.02899416 |
| VEGF signaling pathway | 0.03304023 |
| p53 signaling pathway | 0.03304023 |
| B cell receptor signaling pathway | 0.03969679 |
| Basal cell carcinoma | 0.0463021 |