**Materials and Methods**

**Cell Adhesion Assays**

For cell-cell adhesion assay, glioma cells were trypsinized and plated on a 0.7% agar-coated 24-well plate (2×105 cells/well). Cells were cultured in DMEM medium containing 10% FBS at 37 °C in a 5% CO2 atmosphere for 16 h. Cell aggregates were evaluated under an inverted microscope.

 Cell-matrix adhesion was examined using the CytoSelect 48-Well Adhesion Assay Kit (MyBioSource). Briefly, glioma cells were suspended in serum free media at 0.5X106 cells/mL and then 150 l cell suspension were added to each well of the plate. Cells were cultured in a CO2 incubator for 60 min and then gently washed 4 times with PBS. The attached cells were stained with Cell Stain Solution for 10 min at room temperature and then washed 4 times by distilled water. To quantify the relative cell adhesion, the stained cells were extracted using the Extraction Solution and the optical density was measured at OD560 nm in a plate reader. BSA was used as a negative control. Data were from 3 independent assays.

**Cell Apoptosis Assay**

Annexin V positivity was measured by flow cytometric analysis, using the Annexin V-Cy5 Apoptosis Detection Kit (Biovision, Miltipas, CA). After transfection of U87 or HFU251 cells, media were replaced, and cells were treated with 0.2 M of staurosporine (Sigma, St. Louis, MI) for 24 hr. Next, cells were collected and resuspended in 500 l of 1x Annexin V Binding Buffer. Annexin V-Cy5 was added to the cells for 5 min. The cells were counterstained with DAPI and analyzed by flow cytometry.

**3'-UTR** **luciferase reporters**

The 3'-UTRs luciferase reporters of the *arf4,* *cttn,* *ednrb8 and rasa1* gene were generated by annealing the forward and reverse oligonucleotides of 3'-UTR of each gene and were then cloned into psi-Check2 vector.Oligonucleotides for the *arf4* 3'-UTR were as follows: 5′-TCGAGATTCCATTTGTATTTATTTCTCTCCCTTGCCAAAAAGATTTTCTAATACGC-3′ (forward) and 5′-GGCCGCGTATTAGAAAATCTTTTTGGCAAGGGAGAGAAATAAATACAAATGGAATC-3′ (reverse); Oligonucleotides for the *cttn* 3'-UTR were as follows: 5′- TCGAGGTCAATGGGGGTGTAGTATTTTTGCCAAAATATCATGTTCAATTTCAGC-3′ (forward) and 5′- GGCCGCTGAAATTGAACATGATATTTTGGCAAAAATACTACACCCCCATTGACC-3′ (reverse); Oligonucleotides for the *ednrb8* 3'-UTR were as follows: 5′- TCGAGGAAGTCATTAAAACAAAATGAAACATTTGCCAAAACAAAACAAAAAACGC-3′ (forward) and 5′- GGCCGCGTTTTTTGTTTTGTTTTGGCAAATGTTTCATTTTGTTTTAATGACTTCC-3′ (reverse); Oligonucleotides for the *rasa1* 3'-UTR were as follows: 5′- TCGAGACTTCAGTTTAATGTCTCCTTTGCTCTTGCCAAAAAATAGCACACTTTTCGC-3′ (forward) and 5′- GGCCGCGAAAAGTGTGCTATTTTTTGGCAAGAGCAAAGGAGACATTAAACTGAAGTC-3′ (reverse).