Title: MiR-200c inhibited the proliferation of oral squamous cell carcinoma cells by targeting Akt pathway and its downstream Glut1

Authors: Yixuan Yan, Fengzhi Yan, Qun Huang

PII: S0003-9969(18)30219-X
DOI: https://doi.org/10.1016/j.archoralbio.2018.06.003
Reference: AOB 4181

To appear in: *Archives of Oral Biology*

Received date: 3-3-2018
Revised date: 30-5-2018
Accepted date: 2-6-2018

Please cite this article as: Yan Y, Yan F, Huang Q, MiR-200c inhibited the proliferation of oral squamous cell carcinoma cells by targeting Akt pathway and its downstream Glut1, *Archives of Oral Biology* (2018), https://doi.org/10.1016/j.archoralbio.2018.06.003

MiR-200c inhibited the proliferation of oral squamous cell carcinoma cells by targeting Akt pathway and its downstream Glut1

Yixuan Yan[*1]，Fengzhi Yan[2]，Qun Huang[1]

1 Stomatological Department of Guangdong Women and Children Hospital, Guangzhou City，Guangdong Province, 511400, PR. China
2 Functional Department of Baoding Second Central Hospital, Zhuozhou City，Hebei Province，072750, PR. China

Correspondence author: *Yixuan Yan, Stomatological Department of Guangdong Women and Children Hospital, No. 521 Xingnan Road, Guangzhou City，Guangdong Province, 511400, PR. China. Email: acqewww3w50qd@163.com

Highlights

- Expression of miRNA-200c was significantly downregulated in tumor tissues.
- Serum level of miRNA-200c was lower in oral squamous cell carcinoma patients, and it was decreased with increased primary tumor stages. It can be used to distinguish oral squamous cell carcinoma patients from healthy control.
- miRNA-200c overexpression reduced the expression levels of Akt and Glut1
- miRNA-200c promoted cell proliferation and glucose uptake. miRNA-200c can inhibit the proliferation of oral squamous cell carcinoma cells.

Abstract: Objective Our study aimed to investigate the functionality of miR-200c in oral squamous cell carcinoma. **Methods** Tumor tissues and adjacent tissues were obtained from oral squamous cell carcinoma patients, and blood samples were extracted from both oral squamous cell carcinoma patients and healthy controls. Expression of miR-200c in those tissues was detected by qRT-PCR. All patients were followed-up for 5 years and ROC curves as well as survival analyses were performed to evaluate the diagnostic as well as prognostic values of serum miR-200c for oral squamous cell carcinoma. miR-200c and Glut1 overexpression oral squamous cell carcinoma cell lines were constructed and cell proliferation was detected by CCK-8 assay. Glucose uptake was determined by glucose uptake assay. Interactions between miR-200c, Akt and Glut1 were explored by western blot. **Results** Expression of miR-200c was significantly downregulated in tumor tissues comparing with adjacent tissues in most oral squamous cell carcinoma patients. Serum level of miR-200c was lower in oral squamous cell carcinoma patients than that in healthy controls, and it was decreased with increased primary tumor stages. Serum levels of miR-200c can been used to effectively distinguish oral squamous cell carcinoma patients from healthy control, and patients with lower serum level of miR-200c showed shorter