

Sensitive SERS detection of oral squamous cell carcinoma-related miRNAs in saliva via gold nanohexagons array coupled with hybridization chain reaction amplification

Youwei Wang^{1#}, Yatong Zhang^{2#}, Qiu Du¹, Demao Cao¹, Xiaoxia Lu^{3*}, Zhibing Meng^{4*}

1. Department of neurosurgery, Affiliated Hospital of Yangzhou University, Yangzhou, Jiangsu, 225000, China.

2. Graduate School of Dalian Medical University, Dalian, Liaoning, 116011, China

3. Department of Oncology, Affiliated Hospital of Yangzhou University, Yangzhou, Jiangsu, 225000, China

4. Department of Oral and Maxillofacial Surgery, Affiliated Hospital of Yangzhou University, Yangzhou, Jiangsu, 225000, China.

* Correspondence: E-mail: Mengzhibing2007@163.com

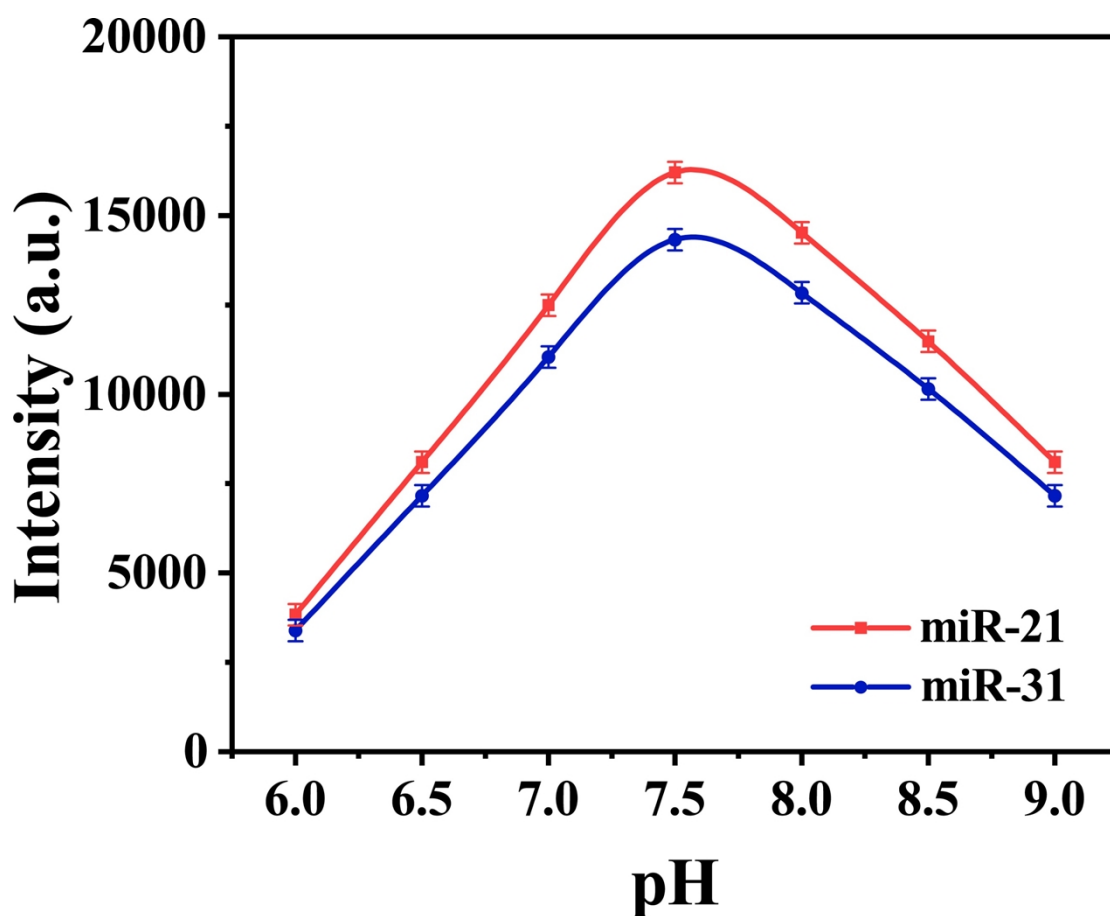


Fig. S1 Optimization parameters: pH.

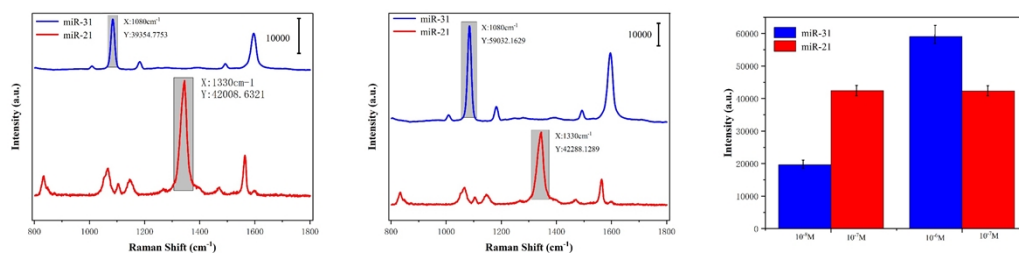


Fig. S2 The correlation between miR-31 and miR-21: (A) MiR-31 and miR-21 concentrations were 10^{-8} M and 10^{-7} M, respectively. (B) The concentrations of miR-31 and miR-21 were 10^{-6} M and 10^{-7} M, respectively. (C) Corresponding histograms of SERS intensity at 1080 cm^{-1} and 1330 cm^{-1} from different concentrations of miR-31 and miR-21.

Patient ID	TNM Stages	Age(y)	Pathology	Patient ID	TNM Stages	Age(y)	Pathology
1	IVA	61	Malignant	31	healthy	69	Control
2	III	63	Malignant	32	healthy	57	Control
3	III	67	Malignant	33	healthy	56	Control
4	III	69	Malignant	34	healthy	63	Control
5	III	58	Malignant	35	healthy	61	Control
6	III	64	Malignant	36	healthy	58	Control
7	II	68	Malignant	37	healthy	66	Control
8	II	65	Malignant	38	healthy	62	Control
9	II	67	Malignant	39	healthy	65	Control
10	II	63	Malignant	40	healthy	68	Control
11	II	70	Malignant	41	healthy	54	Control
12	II	71	Malignant	42	healthy	70	Control
13	II	73	Malignant	43	healthy	46	Control
14	II	60	Malignant	44	healthy	66	Control
15	II	64	Malignant	45	healthy	60	Control
16	II	65	Malignant	46	healthy	58	Control
17	II	68	Malignant	47	healthy	47	Control
18	II	74	Malignant	48	healthy	52	Control
19	II	67	Malignant	49	healthy	67	Control
20	II	64	Malignant	50	healthy	71	Control
21	I	69	Malignant	51	healthy	73	Control
22	I	74	Malignant	52	healthy	58	Control
23	I	70	Malignant	53	healthy	64	Control
24	I	65	Malignant	54	healthy	59	Control
25	I	67	Malignant	55	healthy	62	Control
26	I	71	Malignant	56	healthy	66	Control
27	I	61	Malignant	57	healthy	58	Control
28	I	65	Malignant	58	healthy	52	Control
29	I	72	Malignant	59	healthy	61	Control
30	I	66	Malignant	60	healthy	64	Control

Table S1. Information of clinical saliva samples

References:

1. A. Idili, A. Porchetta, A. Amodio, A. Vallée-Bélisle and F. Ricci, Controlling hybridization chain reactions with pH, *Nano Lett.*, 2015, **15**(8):5539-44. DOI: 10.1021/acs.nanolett.5b02123.