Electronic Supplementary Material (ESI) for Analyst.


*Supporting Information*

# *In-vivo* Endoscopic Mass Spectrometry using a Moving String Sampling Probe

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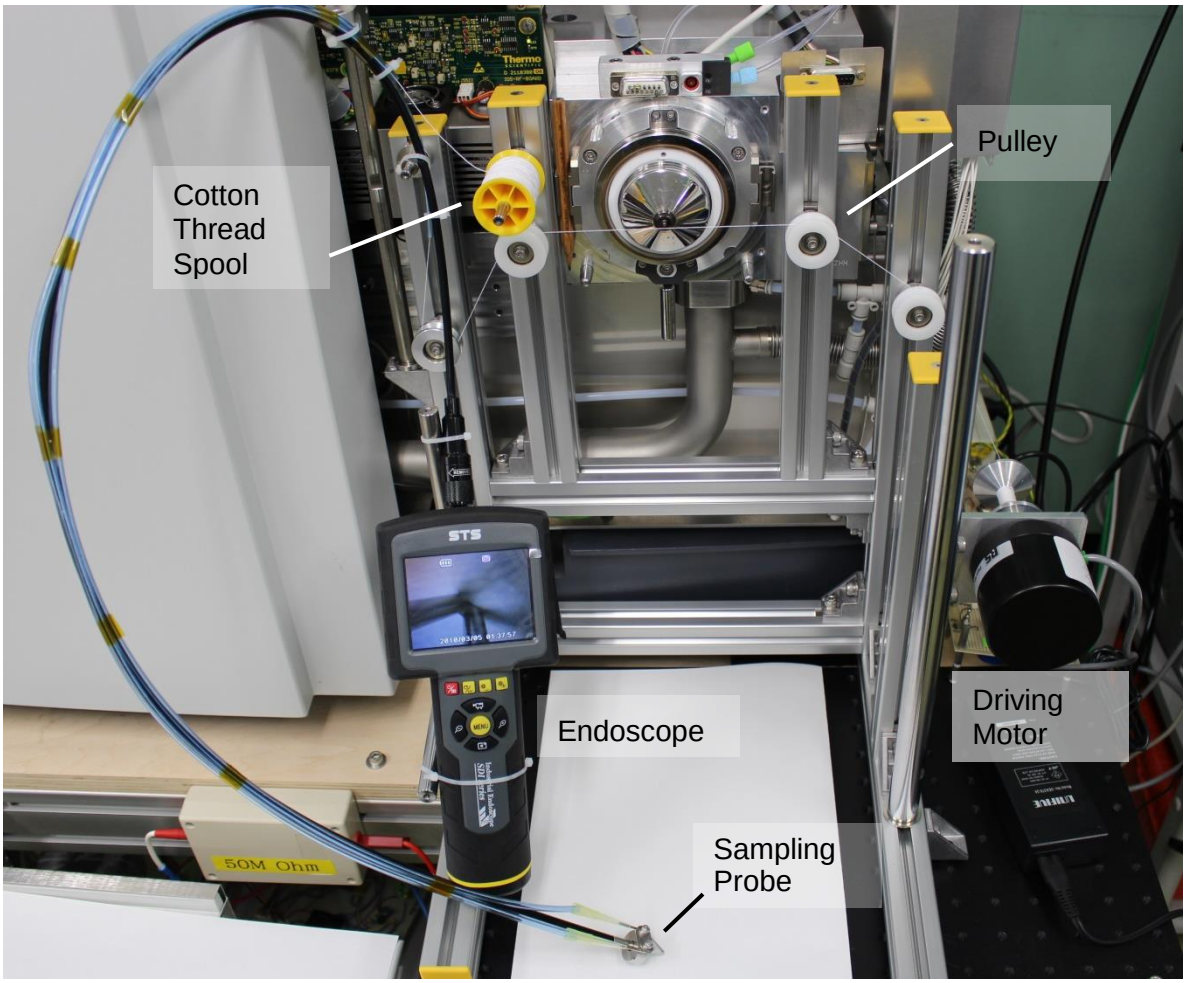
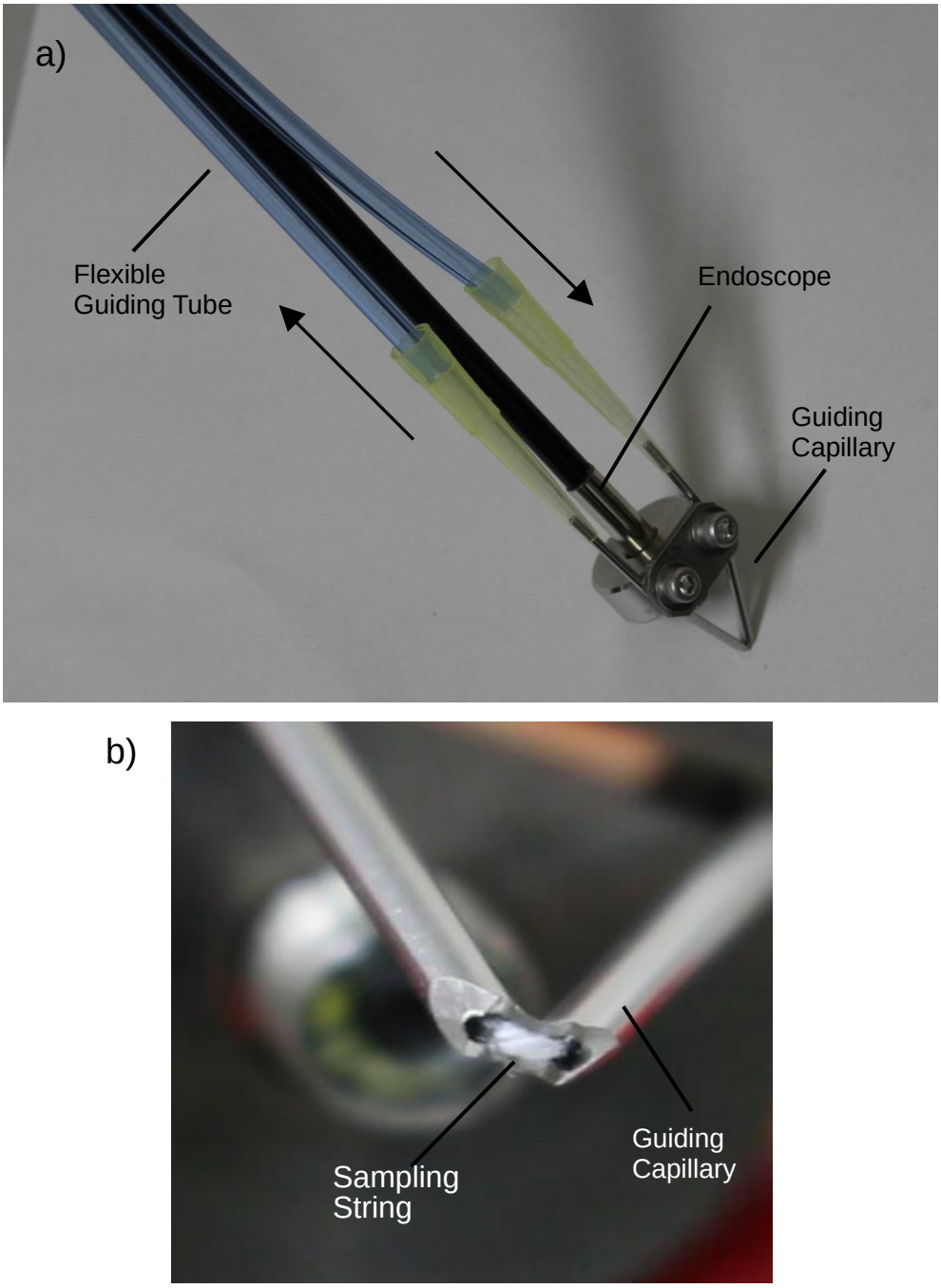
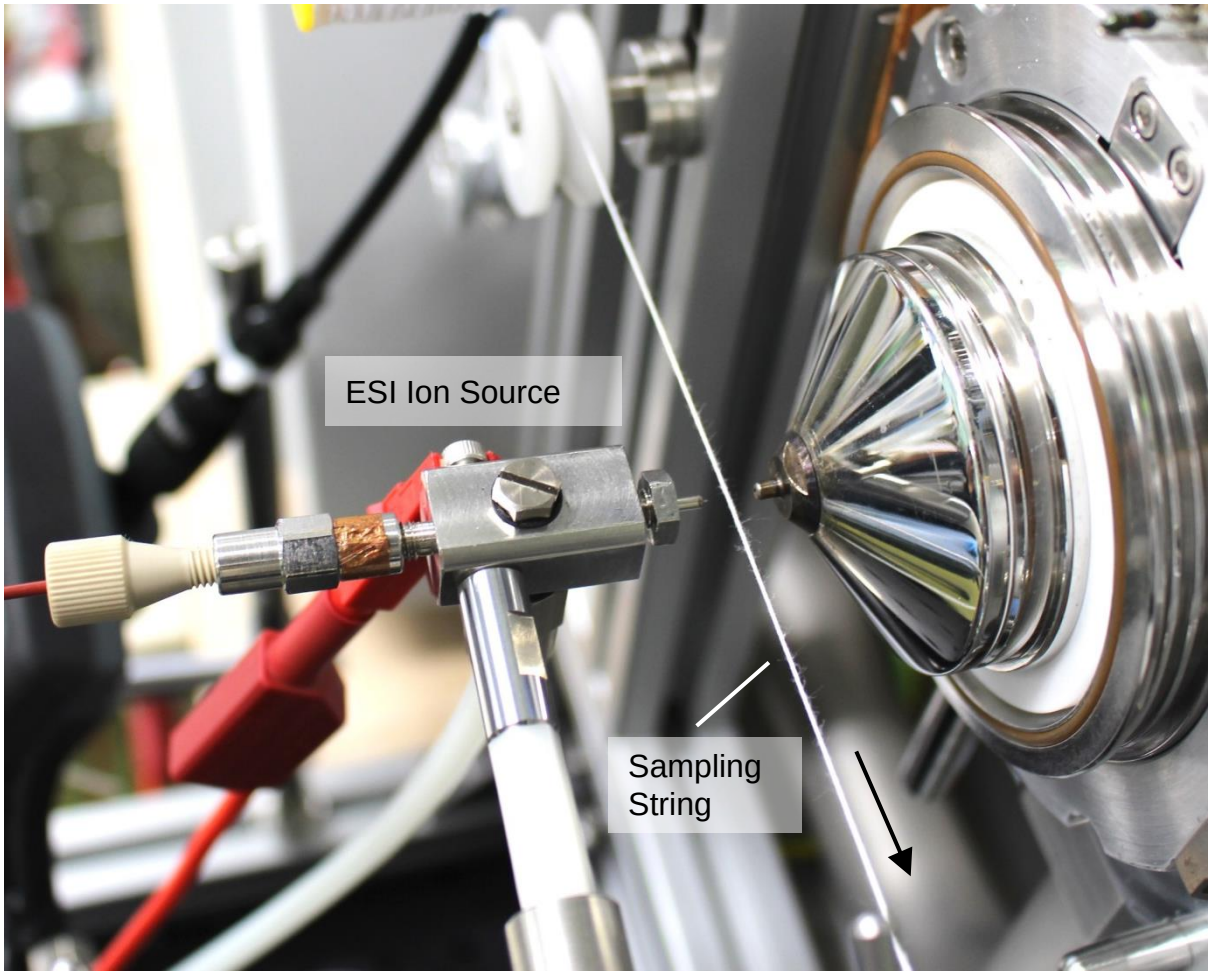


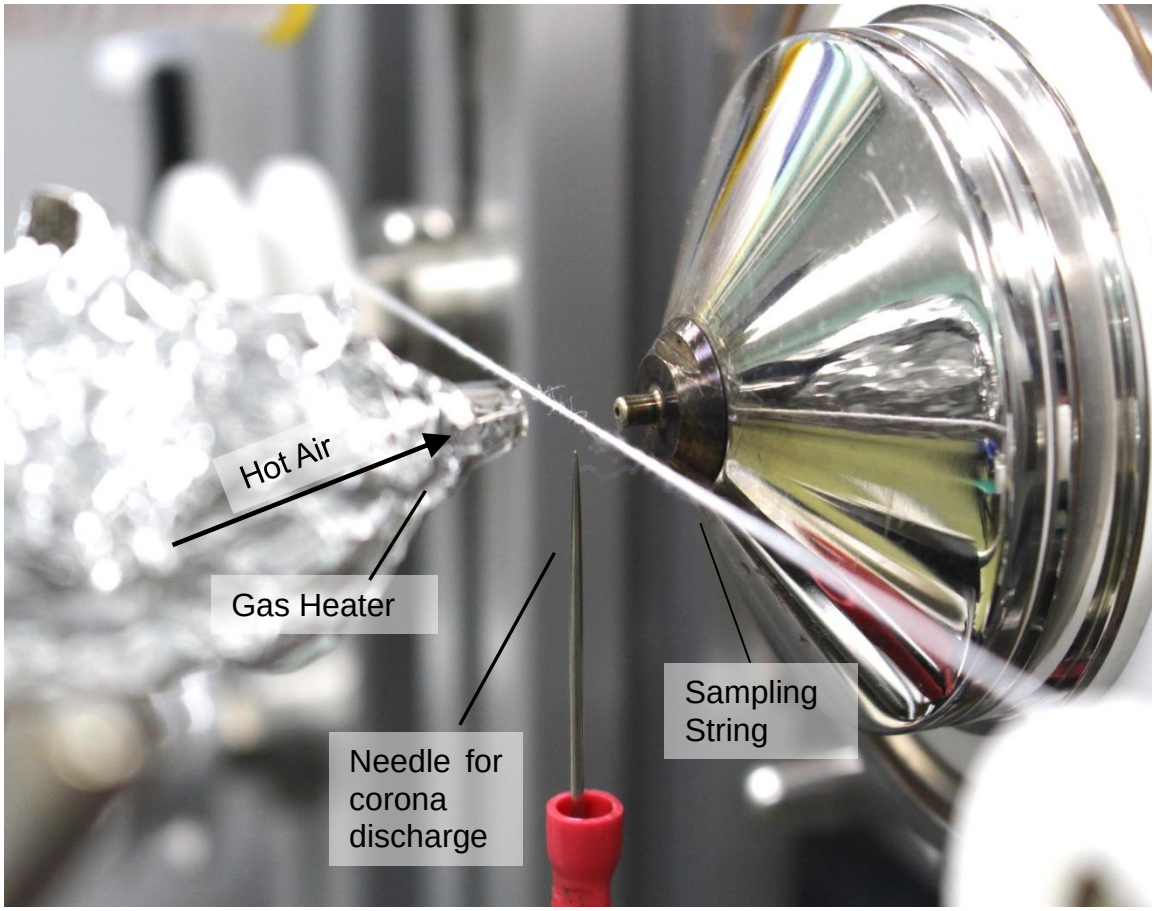

**Supplementary Figure S1.** Photograph of the constructed prototype. The ion source is not installed in this photograph.



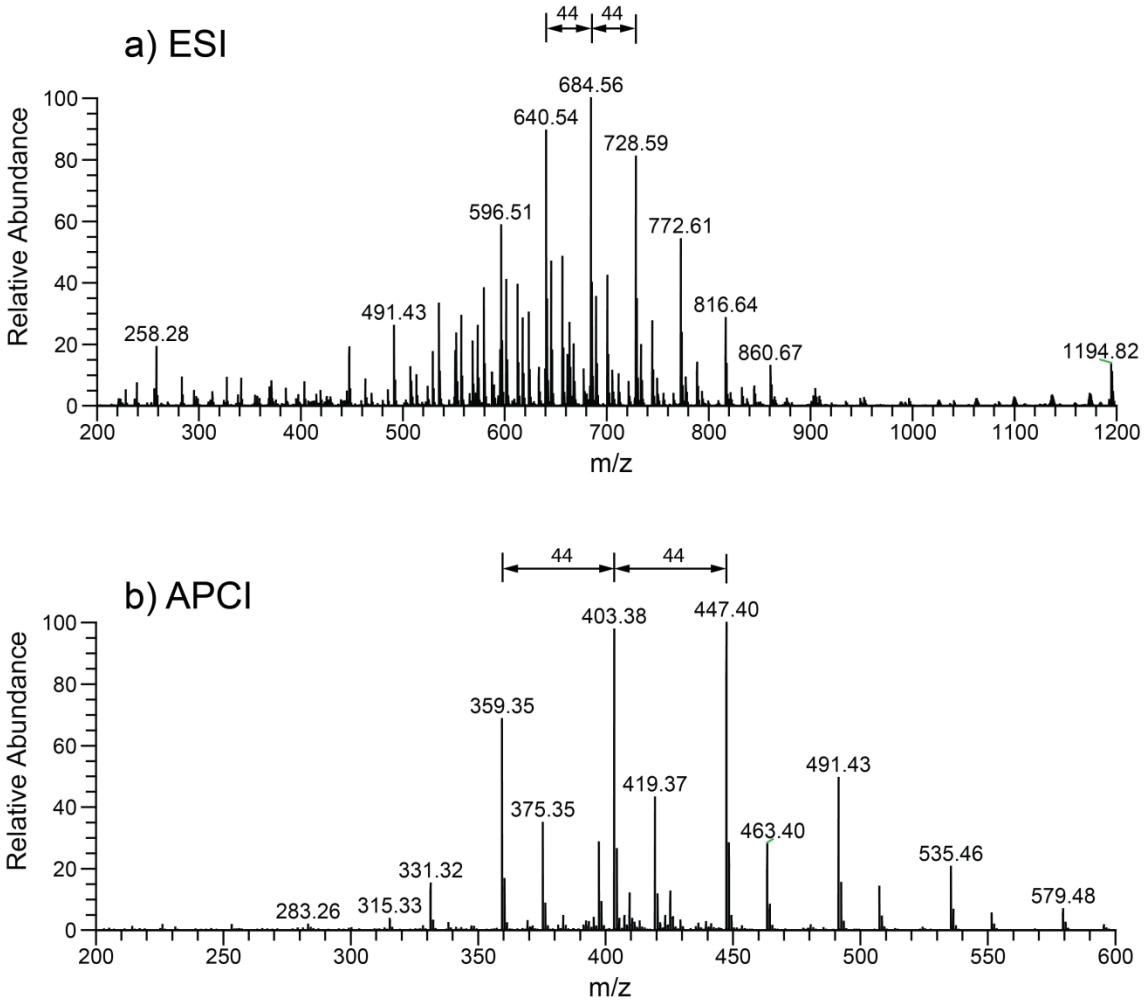

**Supplementary Figure S2. a)** Photograph showing the sampling probe of the constructed prototype. The arrows show the direction of the moving sampling string. b) Close-up look at the probe tip.



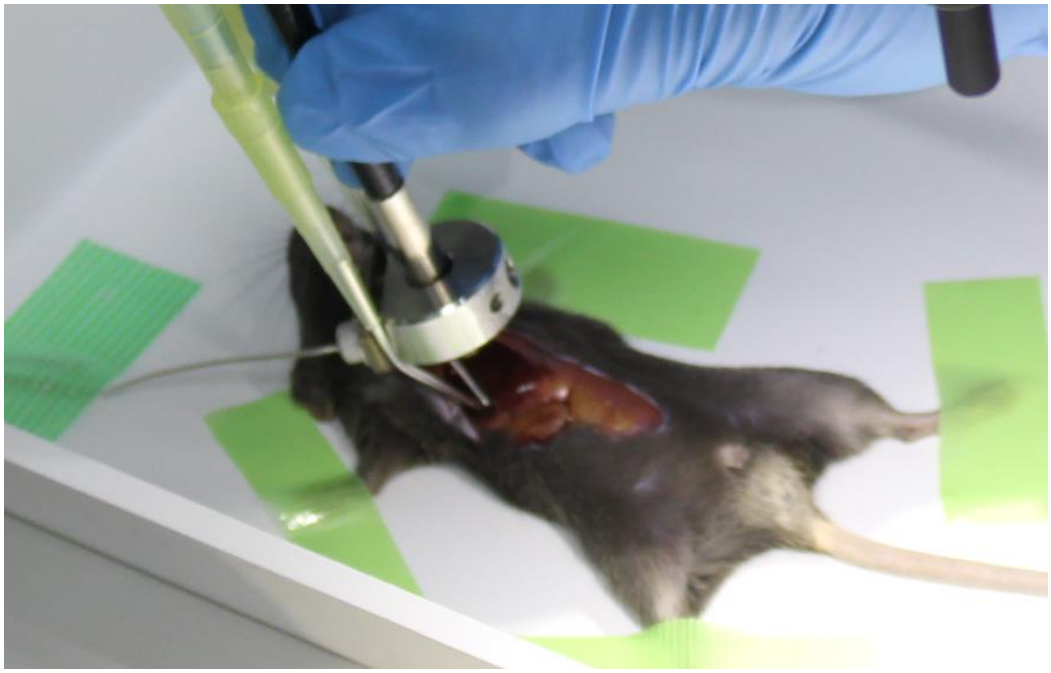

**Supplementary Figure S3.** Arrangement of the ESI ion source used in the moving string sampling system. The configuration is similar to that of a transmission desorption electrospray ionization. The arrow indicates the direction of the string motion.



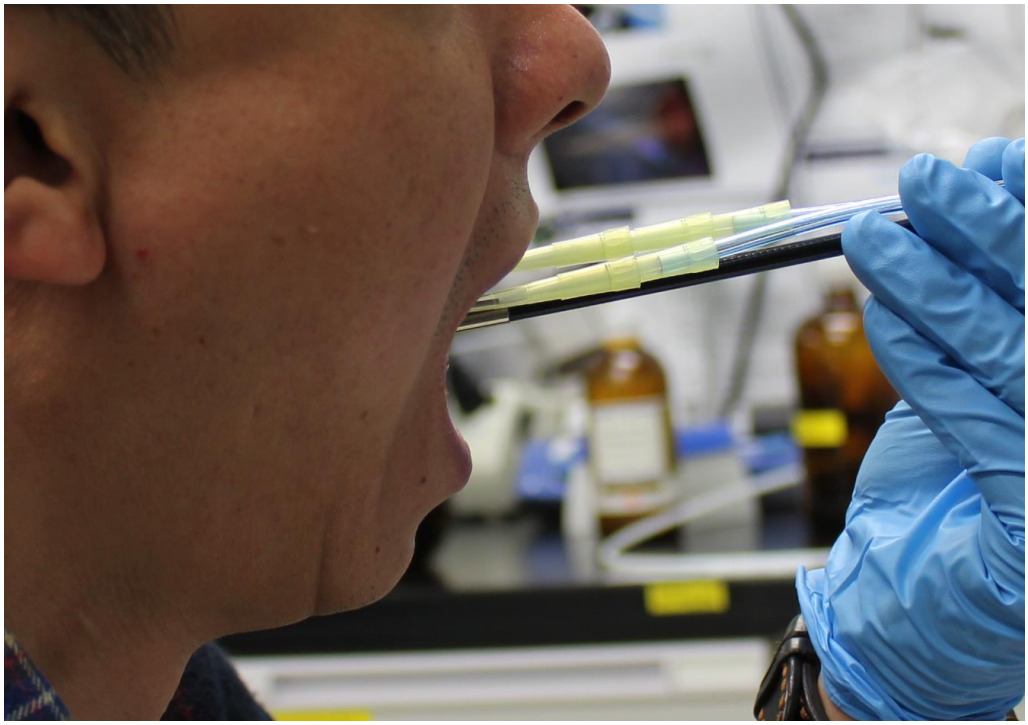

**Supplementary Figure S4.** Arrangement of the corona discharge source and the gas heater for the thermal desorption and atmospheric pressure chemical ionization (APCI) used in the present system. The temperature of the air exiting the gas heater is approximately 200 °C.




**Supplementary Figure S5.** Background mass spectra acquired from the cotton thread using a) desorption ESI, and b) thermal desorption APCI. The spacing of the major peaks is 44.02 ~ 44.03, which corresponds to the $C_2H_4O$ unit of polyethylene glycol (PEG).



**Supplementary Figure S6.** *In-vivo* endoscopic Mass Spectrometry of the anesthetized mouse with moving string sampling probe



**Supplementary Figure S7.** *In-vivo* endoscopic sampling on the tongue of a volunteer subject.

**Supplementary Video S1** (video_s1.mp4)

Close-up look at the tip of the sampling probe when the driving of cotton thread is turned on.

**Supplementary Video S2** (video_s2.mp4)

Demonstration of the sampling effect on a soft leaf. The sampling string is stopped at the beginning of the video. The running of the string is turned on in the middle of the video. With the running of sampling string and an application of small pressure on the probe, the crater created due to the wiping of the sample is clearly visible.

**Supplementary Video S3** (video_s3.mp4)

Demonstration of sampling effect on a piece of chicken liver. The pressing of the probe was higher than that in Video S2 to magnify the sampling effect.

**Supplementary Video** S4 (video_s4.mp4)

Endoscopic sampling performed on the tongue of a volunteer.