Supporting Information for

Quantification Analysis of Off-the-shelf Milk using Lineillumination Raman probe

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*Correspondence : Prof. Hyung Min Kim Department of Chemistry Kookmin University 77 Jeongneung-ro, Seongbuk-gu, Seoul, 02707, Republic of Korea E-mail : <u>hyungkim@kookmin.ac.kr</u> Figure S1. The beam profile image of line illuminated 785 nm laser.



Figure S2. The schematic image of multi-depth line-mapping probe. It consisted of (a) spatially offset Raman probing end, (b) laser end and (c) signal end. (d) The probing branch image at end CCD detector.



Full	1 mm	Block 7 mm	1 mm	Block 7 mm	1 mm	Block 7 mm	1 mm
	3 mm		3 mm	5 mm	3 mm	5 mm 3 mm	3 mm
	5 mm		5 mm		5 mm		5 mm
	7 mm		7 mm		7 mm		7 mm

Figure S3. Schematic illustration of line-illumination Raman system.



(a)

Table S1. Five milk san	ples mixed from no	on-fat milk and whole	milk for quantitative	analysis.
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	whole milk (ml)	non-fat milk (ml)	Fat concentration of Mixture (%)
Sample 1	100	0	3.4
Sample 2	75	25	2.55
Sample 3	50	50	1.7
Sample 4	25	75	0.85
Sample 5	0	100	0



Figure S4. SORS spectra of milk samples in blue carton at (a) 1, (b) 3, and (c) 5 mm offset.

Figure S5. The microscopic image of green carton cross section.





