**SUPPLEMENTARY INFORMATION**

**Rapid detection of mozzarella and feta cheese adulteration with cow milk through a silicon photonic immunosensor**

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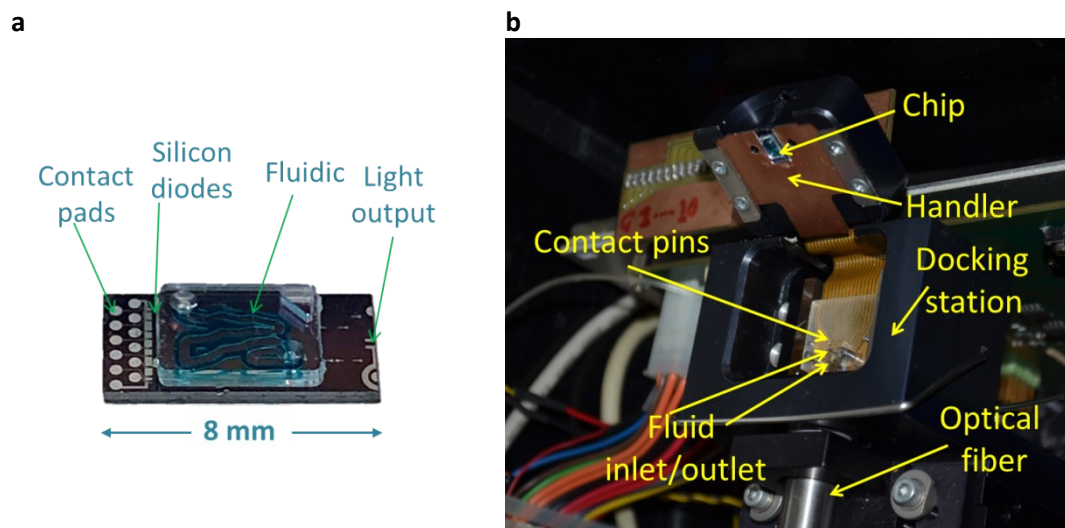
**Fig. S1**. (a) Image of the chip with the fluidic on top. (b) Image of the docking station showing the position of the external optical fiber that collects the transmission spectra of the 10 BB-MZIs of the chip as well as the chip with the fluidic on top placed on the handler for positioning onto the docking station.
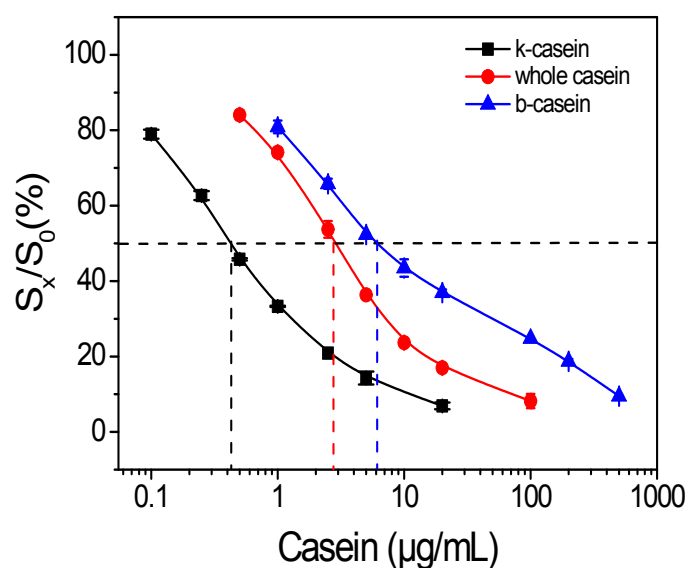
**Fig. S2**. Response curves obtained from MZIs coated with bovine κ-casein upon running solutions of κ-casein, whole casein, and b-casein prepared in buffer.
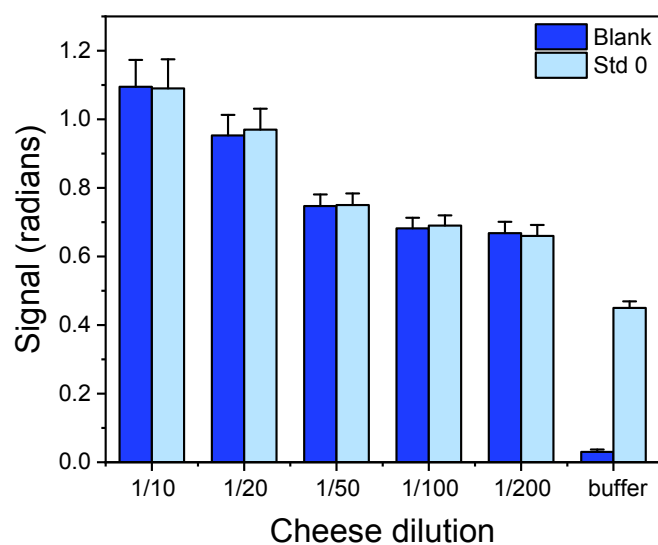


**Fig. S3**. Responses obtained from MZIs coated with bovine κ-casein (light blue bars) or blank MZIs (dark blue bars) for zero calibrators corresponding to buffalo mozzarella cheese extract diluted 1/10 to 1/200 as well as from zero calibrator in buffer. A 1/100 rabbit anti-bovine casein Ab dilution was used and all solutions were run at a flow rate of 22 μL/min. Each point is the mean value of 3 measurements ± SD.
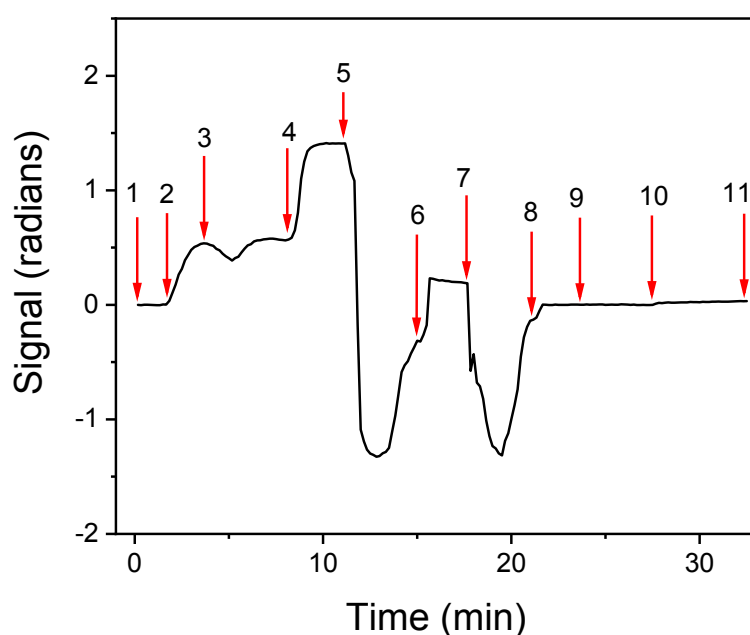
**Fig. S4.** Real-time response obtained for zero calibrator throughout the assay cycle and the following regeneration. The solutions run over the chip are as follows: arrow 1-2: assay buffer; 2-3: 1:1 mixture of zero calibrator (50-times diluted buffalo mozzarella extract) with 1:150 diluted rabbit antiserum; 3-4 biotinylated anti-rabbit IgG antibody (10 µg/mL); 4-5 streptavidin (10 µg/mL); 5-6: 40 mM NaOH; 6-7: assay buffer; 7-8: 50 mM HCl; 8-9: assay buffer; 9-10: biotinylated anti-rabbit antibody (10 µg/mL); and 10-11: streptavidin.
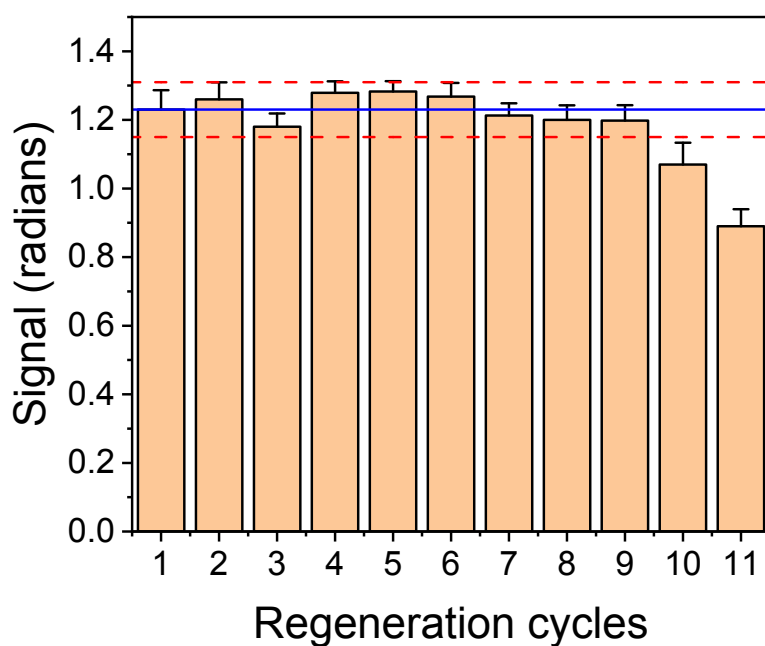


**Fig. S5**. Zero calibrator values received from a single κ-casein coated chip upon repetitive assay/regeneration cycles. The solid blue line corresponds to the mean value and the dashed red lines to mean value ±2SD received from the 9 first assay cycles.
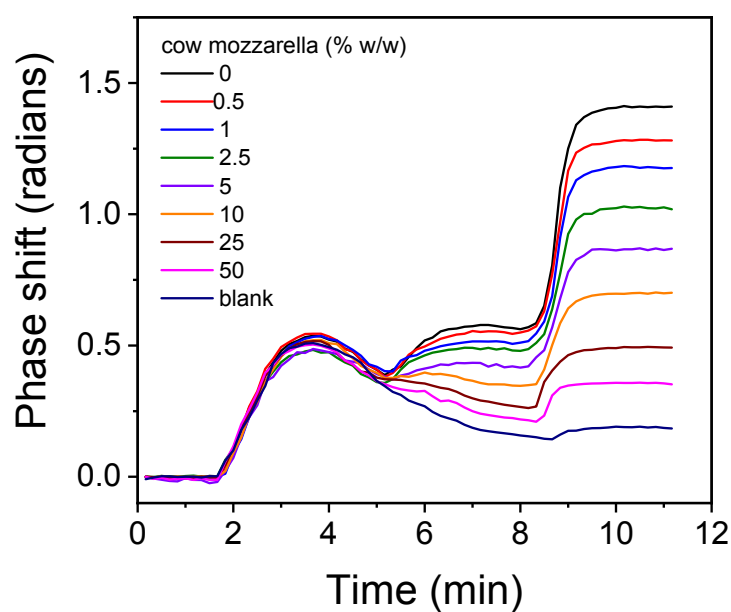
**Fig. S6.** Real-time signal responses obtained for cow cheese calibrators in mozzarella cheese matrix from MZIs coated with bovine κ-casein as well as from a blank sensor.
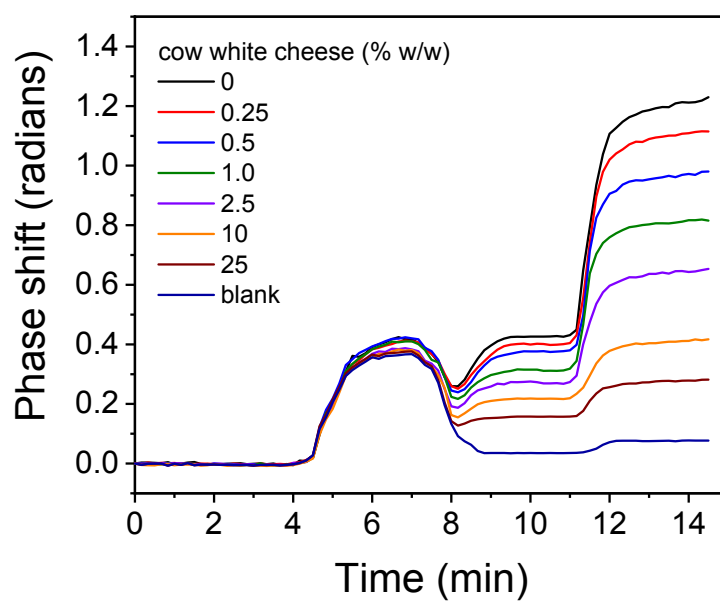


**Fig. S7.** Real-time signal responses obtained for cow cheese calibrators in feta cheese matrix from MZIs coated with bovine κ-casein as well as from a blank sensor.