the protein chip for the detection of microorganisms in milk and water content measurement in milk using NIR spectrosopy

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Microorganism analysis is important with regards to raw milk quality and identification of potential dairy cow infection. To count number of the microorganisms, we fabricated the protein chip using the interaction antibody with the antigen. In this experiment, we immobilized Mab against E.coli 0157:H7 as an important saprogenic bacteria and Streptococcus agalactiae which could be induced mastitis of cow on sol-gel substrate. Their images were investigated by using fluorescence microscopy.

We also determined water content in milk with ease by using near infrared (NIR) spectroscopy. We observed the shift of spectrum at a special wavelength as add water increase and obtain calibration curve through the PLS software.