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Microbial respiration-based screening of residual enrofloxacin in milk using capillary tube indicators**Hyeonjeong Lee, Jakyung Eun, Eunjin Park and Sangmin Jeon**
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A simple method was developed for detecting enrofloxacin in milk using microbial respiration and capillary-tube indicators. A glass vial containing *E. coli* ATCC 11303 in LB was spiked with enrofloxacin and sealed with a screw cap supporting a silicon septum. A capillary tube with a drop of ink was inserted through the septum, and the ink-level change was measured. The growth of *E. coli* produced CO₂ gas, which increased the pressure inside the vial and raised the ink level in the capillary tube; in this manner, small changes in the gas volume were translated into large changes in the ink level. The increase in the ink level was inversely proportional to the concentration of enrofloxacin, which suppressed the growth of *E. coli*. The detection limit of enrofloxacin was found to be 10 ng/ML by using the naked eye after the microbial culture had been permitted to grow over 2 hours.

Biography

Hyeonjeong Lee is a PhD candidate in Chemical Engineering at Pohang University of Science and Technology (POSTECH), Korea. Her research is focused on the development of biosensors for detecting bacteria, protein, and chemicals based on multifunctional nanoparticles.

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