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Core-shell red silica nanoparticles based immunochromatographic assay for detection of *Escherichia coli* O157:H7

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## **Graphical Abstract:**

An immunochromatographic strip based on core-shell red silica nanoparticles (core-shell red SiO<sub>2</sub>NPs) for detection of *Escherichia coli* O157:H7 (*E. coli* O157:H7) was developed. It was based on sandwich reaction between the capture antibody (test line), *E. coli* O157:H7 and core-shell red SiO<sub>2</sub>NPs labeled antibody. When there is *E. coli* O157:H7 in the sample, red band would appear both at test and control line. Otherwise, no color or reduced red color intensity at the test line compared with the positive sample.



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