Quantitative fuculokinase gene polymerase chain reaction for specific detection of *Haemophilus influenzae* pneumonia

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A quantitative polymerase chain reaction (PCR) for the fuculokinase gene (*fucK*) was developed for specific detection of *Haemophilus influenzae*. The method was tested on sputum and nasopharyngeal aspirate (NPA) from 78 patients with community-acquired pneumonia (CAP). With a reference standard of sputum culture and/or serology against the patient’s own nasopharyngeal isolate, *H. influenzae* etiology was detected in 20 patients. Compared with the reference standard, *fucK* PCR (using the detection limit 105 DNA copies/mL) on sputum and NPA showed a sensitivity of 95.0% (19/20) in both cases, and specificities of 87.9% (51/58) and 89.5% (52/58), respectively. In a receiver operating characteristic curve analysis, sputum *fucK* PCR was found to be significantly superior to sputum P6 PCR for detection of *H. influenzae* CAP. NPA *fucK* PCR was positive in 3 of 54 adult controls without respiratory symptoms. In conclusion, quantitative *fucK* real-time PCR provides a sensitive and specific identification of *H. influenzae* in respiratory secretions.

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