

# First isolation of *Yersinia entomophaga* in human urinary tract

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## Abstract

*Yersinia entomophaga* is an insect pathogen first isolated from larvae of *Coleoptera* in New Zealand in 2011. We report here the first isolation of *Y. entomophaga* from human urine. Using whole-genome sequencing, we confirmed the presence of specific chromosomal virulence genes and identified a plasmid harbouring a quinolone resistance gene.

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## Introduction

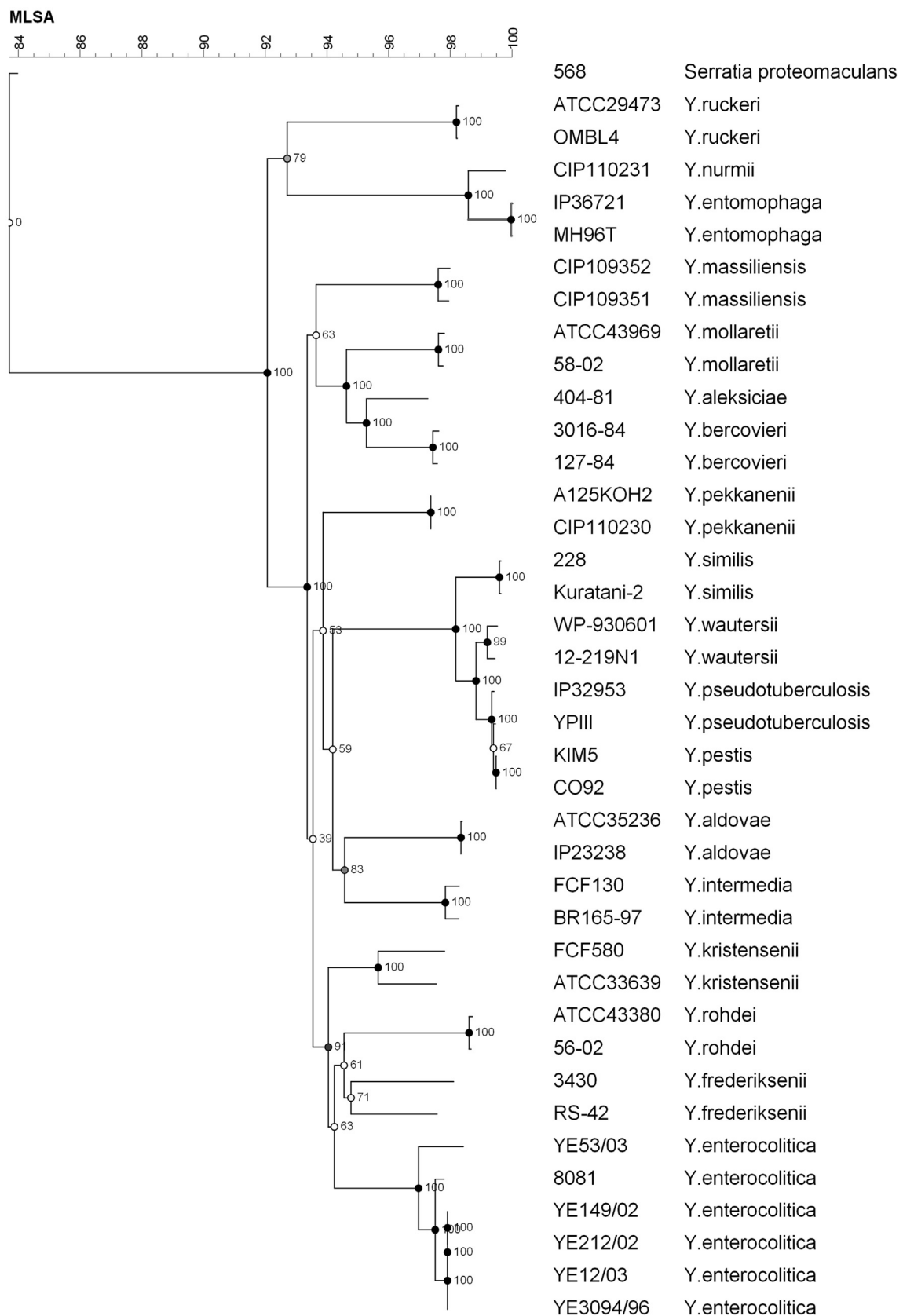
Within the *Yersinia* genus, three species are human pathogens: *Y. pestis*, which is the causative agent of plague, and two enteropathogens, *Y. pseudotuberculosis* and *Y. enterocolitica*, transmitted by ingestion of contaminated food. These enteropathogens are usually isolated in stools, and less frequently in lymph nodes and blood. *Yersinia entomophaga*, a novel species described in 2011 in New Zealand, is an insect pathogen which kills a wide range of coleopteran, lepidopteran and orthopteran species [1] but has never been isolated in humans.

We report here the first isolation of *Y. entomophaga* from human urine in a case of catheter-associated asymptomatic bacteriuria (CA-ASB).

## Case report

The patient was an 85-year-old retired man. He did not travel abroad, usually stayed at home and practiced fishing. His medical history was remarkable for obesity, diabetes, atrial fibrillation, high blood pressure, coronary disease, chronic obstructive pulmonary disease and thyroid insufficiency. He was hospitalized in January 2015 in Barbezieu Hospital (France) for heart and respiratory decompensation with hypertension, and developed acute urinary retention, leading to long-term urinary catheterization with a 100% silicone and latex-free transurethral Foley catheter (178305; Teleflex). All attempts at removing the catheter resulted in urinary retention, so a laser photovaporization of the prostate was scheduled at the urology department of Angoulême Hospital (France) in April 2015. Meanwhile, the patient stayed at home. He had no special dietary regimen and no contact with people coming back from New Zealand; nor did he work with biological insecticides.

According to the presurgical instructions, a urine sample was collected 2 days before, the catheter was replaced the day before, and a second-generation cephalosporin course was provided during surgery. The urine microscopic examination showed 60 000 leucocytes/mL and 326 000 erythrocytes/mL, and the urine



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