

Supplementary Table S1. Clinical patients features

Patient	Strain	Infection	Hospital Ward	Diagnosis	Age	Source	Isolation date	Risk factors	Antibiotics	Symptoms
	12	Multi-dose meropenem vial	NICU			J18M790	22/06/18			
P 1	4		STx		9 years	Blood culture	26/06/18			
	13	Central line-associated bloodstream infection	STx	Craniopharyngioma Ventriculitis Surgical wound dehiscence PO CSF pseudocyst	9 years	Blood culture	23/06/18	Central venous catheter Previous surgeries Previous antibiotics	Cefepime Vancomycin Meropenem Colistin	Fever Tachycardia
P 2	11		Emergency Oncology		15 years	Blood culture	16/06/18			
	10		Emergency Oncology		15 years	Blood culture	16/06/18			
	3	Fever and neutropenia	Emergency Oncology	Non-metastatic inguinal Ewing Sarcoma Obesity	15 years	Blood culture	16/06/18	Chemotherapy June 4 to 8 vincristine, doxorubicin and cyclophosphamide Private physician applied single dose: ceftriaxone, cefixime and gentamicin Last hospitalization April 23 to 27 due to fever and neutropenia in Oncology	Cefepime Amikacin	Odynophagia Otalgia Fever
P 3	9	Central line-associated bloodstream infection	Emergency	Acute lymphoblastic leukemia Septic shock	10 years	Blood culture	14/06/18	Port catheter (6 months) Chemotherapy	Meropenem Vancomycin	Hypothermia Tachycardia Hypotension
P 4	1	Bloodstream infection	Emergency Surgery	Lennox Gastaut Syndrome Altered swallowing mechanics	3 years	Blood culture	09/06/18	Hospitalization Peripheral venous line O2 per mask Previous Antibiotics	Meropenem Amikacin	Fever Hypothermia Tachycardia Respiratory Distress

P 5	2	Bloodstream infection	Emergency	Right scapular rhabdomyosarcoma with lung metastases. Post-operated wide local resection	3 years	Blood culture	03/06/18	Peripherally inserted central venous catheter (PICC) Outpatient chemo procedures	Cefepime Amikacin Colistin Rifampicin	Fever Tachycardia Cough
P 6	15	Urinary tract infection related to urinary catheter	NICU Surgery	Intestinal Neurogliomatosis I type II	1 year 9 months	Urine culture	25/06/18	Cystostomy Previous antibiotic (ertapenem)	Meropenem	Fever Tachycardia Increased cost due ileostomy Dehydration
P 7	8	Bloodstream infection	NICU	Anorectal malformation with vestibular fistula Right Hydronephrosis Post-intubation subglottic stenosis	3 months	Urine culture	06/06/18	Central venous catheter Stay in Neonatology Previous Antibiotics Dysfunctional catheter	Meropenem Vancomycin	Fever Tachycardia Respiratory Distress
P 8	5	Bloodstream infection	NICU	Perinatal asphyxia Hydronephrosis	1 month	Blood culture	03/06/18	Central venous Catheter Previous Antibiotics (meropenem, vancomycin)	Piperacilin-Tazobactam Amikacin Colistin Cefepime	Fever Tachycardia
P 9	14	Fever and neutropenia Hospitalized from June 29 to July 4 Viral Panel + Rhinovirus	Emergency Oncology	Primary Neuroblastoma of the left adrenal gland. Stage 4 (bone, bone marrow and skin metastasis) with high risk in neoadjuvant.	5 months	Blood culture	03/07/18	Hospitalized in internal medicine from April 27 to May 5 due to sepsis Tx cefepime 10 days Chemotherapy May 10 to 15, June 13 to 17 cyclophosphamide, cisplatin, doxorubicin Percutaneous left axillary catheter on 14/06/18	Cefepime amikacin	Fever Runny nose Tachycardia Cough

P 10	7	Urinary tract infection	Infectious diseases outpatient	Left hydronephrosis PO percutaneous extracorporeal nephrectomy Renal litiasis (pb colonization of 2 l residual stones in left renal pelvis.	14 years	Urine culture	15/06/18	Previous hospitalization 30/03/18 to 14/04/18 in urology due to complicated recurrent UTI with isolated multidrug resistant <i>P. aeruginosa</i> treated with colistin, ciprofloxacin 14 days Mar 16 to 19 hospitalized due to percutaneous laser nephrolithotomy and double J catheter, nephrostomy catheter and urethral catheter were placed.	Fosfomicin Nitrofurantoin prophylaxis	No
	6		Infectious diseases outpatient		14 years	Urine culture	01/06/18			

Patient: number of patient; Strain: number of the strain isolated from the patient; Hospital Ward: Emergency (yellow), Surgical Therapy (STx, blue), Oncology (pink), Neonatal Intensive Care Unit (NICU, purple), Infectious diseases outpatient (green). Clade II/CC233 (blue); Clade I/CC233 (yellow); Clade III/CC111 (purple); Clade IV/CC235 (green).