Supplementary table 3. Overview of clinical and environmental samples, sample sources, number of isolates, geographic distribution, ESKAPE pathogens, isolation methods and identification techniques in the included studies.

Article identification	Types of samples	Number of isolates	Country	Targeted ESKAPE pathogen(s)	Isolation and presumptive identification	Typing methods and Identification
28	**Clinical** - Urine **Environmental** - Domestic refuse composting - Public swimming pool water - Marine brackish - Effluent - Sediments from harbour dredging activity	Clinical: 57 Environmental: 59	Italy	*Enterococcus faecium*	**Clinical** The isolates were obtained from the clinical microbiology department. **Environmental** **Methodology: Most probable number (MPN) method** - Azide Dextrose Broth [S] - Esculin vancomycin azide broth [S] - Bile Esculin Agar [S, D] - Catalase - Gram-staining	**Clinical** **Methodology: Biochemical identification** - Automated: SCEPTOR system **Environmental** **Methodology: Presumptive phenotypic and Biochemical identification** Manual and automated identification (SCEPTOR system)
29	**Clinical** - Blood, urine, sputum, pus, cow, rabbit, wild boar **Environmental** - River water - Lake, ponds and marine water - Surface seawater	Clinical: 68 Environmental: 23	Japan	*Pseudomonas aeruginosa*	**Clinical** The isolates were previously isolated **Environmental** **Methodology: Membrane filtration and culture** - Nalidixic acid cetrimide (NAC) agar [S] - Nutrient broth agar (NA) [E] Cetrimide kanamycin nalidixic acid agar [S]	**Clinical and environmental** **Methodology: Biochemical and Genotypic identification** - Automated: BD Phoenix Automated microbiology system - Serotyping PFGE
30	**Clinical** - Blood cultures of patients hospitalized **Environmental** - Wastewater (raw) - Effluent (treated) - Secondary treated and disinfected wastewater from effluents of	Clinical: 10 Environmental: 53	Greece	*Enterococcus faecium*	**Clinical** **Methodology: Biochemical and culture** - Automated system Bactec 9240 - Blood agar [E] **Environmental** **Methodology: Direct plating** - Kanamycin aesculin azide agar [S] supplemented with	**Clinical** **Methodology: Biochemical and Molecular fingerprint identification** - Automated: API Strep test - Automated: VITEK2 automated system **Environmental** **Methodology: Biochemical and Molecular fingerprint identification**

	hospitals - Pig sample (rectum and faeces)				vancomycin - Catalase - Gram-staining Motility	- Manual: Biochemical PFGE
31	**Clinical** - Urine and wound **Environmental** - Wastewater (raw)	Clinical: 48 Environmental: 58	Iran	*Enterococcus faecium*	**Clinical** It was not described **Environmental** **Methodology: Membrane filtration and culture** - Brain heart infusion (BHI) agar [E] m-*Enterococcus* agar [S] supplemented with gentamicin.	**Clinical and environmental** **Methodology: Genotypic and phenotypic identification** - PCR - PhP-RF system - Ribotyping - PFGE
32	**Clinical** - Pus, urine, sputum, bronchial wash solution **Environmental** - Spring water	Clinical: 6 Environmental: 12	South Korea	*Pseudomonas aeruginosa*	**Clinical and Environmental** **Methodology: Direct plating** - *Pseudomonas* isolation agar [S]	**Clinical and Environmental** **Methodology: Presumptive phenotypic and Molecular fingerprint identification** RAPD
33	**Clinical** - Clinical samples (it was not specified) **Environmental** - Water (tap water) - Garden	Clinical: 56 Environmental: 20	Spain	*Pseudomonas aeruginosa*	**Clinical and Environmental** **Methodology: Biochemical and Culture** - Trypticase soy broth (TSB) [E] - Glutamate starch Pseudomonas agar (GSP) [S, D] - Gram staining - Positive oxidase reaction - O/F +/-	**Clinical and Environmental** **Methodology: Phenotypic and genotypic identification** - SDS-PAGE - PFGE RAPD
34	**Clinical** - Obtained from Pathology Queensland and QUT culture collection [did not specify the sample site origin] **Environmental** - River water	Clinical: 27 Environmental: 47	Australia	*Enterococcus faecium*	**Clinical** The isolated were obtained from culture collection **Environmental** **Methodology: Membrane filtration and culture** - *Enterococcus* agar [S]	**Clinical** The bacterial species were identified according to the classification provided by the reference culture collection, since the isolates were sourced directly from it. **Environmental** **Methodology: Presumptive phenotypic and Genotypic identification** Real-time PCR using $ddl_{E.\ faecalis}$ and $ddl_{E.feacium}$

35	**Clinical** - Blood, cerebrospinal fluid, eyes, livers, peripheral venous catheters, pleural fluid, sputum, urine, wounds, respiratory system **Environmental** - Groundwater for human use (wells) - Wetland (lake) - Wastewater (treated)	Clinical: 14 Environmental: 35	Mexico	*Enterococcus faecium, Enterococcus faecalis*	**Clinical** **Method: Culture** - Sheep blood agar [E] - Grain-staining - Catalase - Esculin hydrolysis - BHI 6.5% NaCl **Environmental** **Method: Membrane filtration and culture** - K-F agar [S, D] - Grain-staining - Catalase - Esculin hydrolysis - BHI 6.5% NaCl	**Clinical** **Methodology: Genotypic and phenotypic identification** - Multiplex PCR PFGE
37	**Clinical** - Hospitalized patients: urinary and respiratory tract infections **Environmental** - Wastewater (raw) - River water	Clinical: 20 Environmental: 214	Australia	*Pseudomonas aeruginosa*	**Clinical** **Methodology: Culture** - Previously isolated by the pathology unit of the hospital **Environmental** **Methodology: Membrane filtration and culture** Cetrimide agar [S]	**Clinical and Environmental** **Genotypic fingerprinting and molecular detection** - PCR RAPD
38	**Clinical** - Blood **Environmental** - Tap water	Clinical: 49 Environmental: 6	Ethiopia	*Klebsiella pneumoniae*	**Clinical** **Methodology: Culture** - Tryptic soy broth (TSB) [E] - Sheep blood [E, D] - Chocolate [E] - MacConkey [D] **Environmental** **Method: Culture** - MacConkey agar [D] - Xylose lysine deoxycholate (XLD) agar [S, D] - Cystine lactose electrolyte deficient agar (CLED) [D] - Sheep blood agar [E, D]	**Clinical and Environmental** **Methodology: Presumptive phenotypic and biochemical identification** - Fermentation method - Urea 40% broth [D] - Simmons citrate agar [S, D] - Sulfide indole motility medium [D] - Triple sugar iron agar [D] - Klinger iron agar [D] - Oxidase test reagents

					Chocolate agar [E]	
39	**Clinical** - Tracheal aspirates **Environmental** - Wastewater (hospital)	Clinical: 10 Environmental: 10	Croatia	*Acinetobacter baumannii*	**Clinical** - Previously isolated **Environmental** **Methodology: Membrane filtration and culture** - CHROMagar Acinetobacter supplemented [S] with CR102 and cefsulodin sodium salt hydrate Nutrient agar (NA) [E]	**Clinical** **Methodology: Genotypic fingerprint** - Previously identified - PFGE **Environmental** **Methodology: Phenotypic and genotypic fingerprint** - MALDI TOF MS PFGE
40	**Clinical** - Catheters, tracheobronchial, gastric, rectal, urine **Environmental** - Tap water	Clinical: 139 Environmental: 19	Besançon, France	*Pseudomonas aeruginosa*	**Clinical and environmental** **Methodology:** It was not specified	**Clinical and Environmental** **Methodology: Genotypic identification** PFGE
41	**Clinical** - Nasal, ear, pus, wound, skin **Environmental** - Water samples: tap, borehole, tank, reservoir, well water	Clinical: 120 Environmental: 45	Nigeria	*Staphylococcus aureus*	**Clinical** **Methodology: Culture** - Blood agar [E] - Mannitol salt agar (MSA) [S, D] **Environmental** **Methodology: Culture** Mannitol salt agar (MSA) [S, D]	**Clinical and Environmental** Only the culture selective (presumptive phenotypic identification on selective and differential culture)
42	**Clinical** - They only say that samples were from Austrian hospitals **Environmental** - River water	Clinical: 4 Environmental: 5	Australia	*Klebsiella pneumoniae*	**Clinical** It was not specified **Environmental** **Methodology: membrane filtration and culture** - BBL fluid thioglycolate medium [E] - Chromogenic media [S, D] ChromID ESBL [S, D]	**Clinical** - It was not specified **Environmental** **Methodology: Phenotypic and genotypic fingerprint** - MALDI TOF MS - WGS
43	**Clinical** - Diarrheal stool	Clinical: 15 Environmental: 49	India	*Klebsiella pneumoniae*	**Clinical** **Methodology: Direct plating** - Nutrient agar (NA) [E]	**Clinical and environmental:** **Methodology: Presumptive phenotypic identification**

	Environmental - Well water (residential, market, hospital) - Effluent (Fish market)				- MacConkey (MA) [D] **Environmental** **Methodology: Direct plating** - Tryptic soy agar (TSA) [E] - MacConkey (MA) [D] Nutrient agar (NA) [E]	Selective and differential medium.
44	**Clinical** - Feces from healthy individuals and farmed animals - Fish samples - Pork and poultry meat from supermarkets **Environmental** - River and laker waters	Clinical: 108 Environmental: 11	China	*Enterococcus (*including *Enterococcus faecium)*	**Clinical** **Methodology: Culture** - Luria-Bertani (LB) broth [E] - Columbia agar base supplemented with sheep blood and florfenicol [S] - Gram-staining **Environmental** **Methodology: Membrane filtration and culture** - Luria-Bertani (LB) broth [E] Columbia agar base supplemented with sheep blood and florfenicol [S]	**Clinical and environmental** **Methodology: Phenotypic and Genotypic identification** - MALDI-TOF MS - WGS
45	**Clinical** - Patients hospitalized **Environmental** - Raw hospital wastewater, inflow and outflow from hospital - River water	Clinical: 110 Environmental: 231	Czech Republic	*Klebsiella* spp.	**Clinical** **Methodology: Culture** - MacConkey agar [S] supplemented with cefotaxime or meropenem. **Environmental** **Methodology: Membrane filtration and culture** - Klebsiella ChromoSelect [S] MacConkey [S] supplemented with cefotaxime or meropenem	**Clinical and Environmental** **Methodology: Phenotypic and Genotypic identification** - MALDI-TOF WGS