Table 1 Epidemiological cut-offs and clinical breakpoints

Antimicrobial agent	Actinobacillus pleuropneumoniae				Bordetella bronchiseptica				Escherichia coli				Klebsiella pneumoniae				Salmonella enterica				Staphylococcus hyicus				Streptococcus suis			
	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)	ECOFF, non-wild-type ≥ (µg/ml)	Tentative ECOFF, non-wild-type ≥ (µg/ml)	Animal-specific clinical breakpoint, R ≥ (µg/ml)	Human clinical breakpoint, R ≥ (µg/ml)
Amoxicillin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	0.5	Not available	Not available	Not available	Not available	Not available	Not available	Not available	4	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Amoxicillin-clavulanic acid	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	16/8	Not available	Not available	Not available	16/8	Not available	Not available	Not available	Not available	Not available	Not available	Not available	16/8	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Ampicillin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	0.5	Not available	Not available	Not available	8	Not available	Not available	Not available	4	Not available	Not available	Not available	0.5	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Apramycin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Cefotaxime	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	0.25	Not available	Not available	Not available	0.25	Not available	Not available	Not available	Not available	0.5	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Ceftiofur	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Cefpodoxime	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	2	Not available	Not available	Not available	2	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Ceftiofurxime	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	0.125	Not available	Not available	Not available	0.125	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Ceftiofur	0.06	Not available	4	Not available	Not available	Not available	Not available	Not available	1	Not available	4	Not available	1	Not available	4	Not available	2	Not available	4	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Chlorampheniccol	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	16	Not available	16	Not available	16	Not available	Not available	Not available	16	Not available	Not available	16	Not available	Not available	Not available	16	Not available	Not available	Not available	8
Ciprofloxacin	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	0.06	Not available	Not available	Not available	0.125	Not available	Not available	Not available	0.125	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Colistin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	2	Not available	Not available	Not available	2	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	1	Not tested	Not tested	Not tested
Doxycycline	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	2	Not available	Not available	Not available	2	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	1	Not available	Not available	Not available
Enrofloxacin	0.125	Not available	Not available	Not available	Not available	Not available	Not available	Not available	0.125	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	0.5	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Erythromycin	Not available	8	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	4	Not tested	Not tested	Not tested
Florfenicol	1	Not available	4	Not available	8	Not available	16	Not available	8	Not available	8	Not available	16	Not available	8	Not available	16	Not available	8	Not available	Not available	Not available	Not available	Not available	4	Not available	4	Not available
Gamithromycin	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Gentamicin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	2	Not available	Not available	Not available	2	Not available	Not available	Not available	2	Not available	Not available	Not available	0.5	Not available	Not available	Not available	8	Not available	Not available	Not available
Lincomycin	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Lincomycin-spectinomycin	Not available	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Marbofloxacin	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	0.06	Not available	Not available	Not available	0.125	Not available	Not available	Not available	0.125	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Neomycin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	4	Not available	Not available	Not available	4	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Oxytetracycline	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Paromomycin	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Penicillin	1	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	0.06	Not available	Not available	0.12	Not available	Not available	0.5	Not available
Spectinomycin	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	64	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Streptomycin	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	16	Not available	Not available	Not available	16	Not available	Not available	Not available	16	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Sulfamethoxazole	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Tetracycline	2	Not available	1	Not available	2	Not available	8	Not available	8	Not available	8	Not available	8	Not available	8	Not available	8	Not available	8	Not available	2	Not available	Not available	8	4	Not available	Not available	8
Tiamulin	Not available	32	16	Not available	Not available	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Tildipirosin	Not available	16	16	Not available	Not available	Not available	Not available	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Tilmicosin	Not tested	16	16	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
Trimethoprim	Not tested	1	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	2	Not available	2	Not available	2	Not available	2	Not available	2	Not available	2	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Trimethoprim-sulfamethoxazole	0.25	Not available	Not available	Not available	Not available	Not available	0.5	Not available	2/38	0.5	Not available	Not available	2/38	Not available	Not available	Not available	Not available	Not available	Not available	Not available	2/38	Not available	0.25	Not available	2/38	Not available	0.25	Not available
Tulathromycin	Not available	Not available	64	Not available	64	Not available	64	Not available	32	Not available	32	Not available	32	Not available	32	Not available	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	32	Not tested
Tylosin	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	4	Not available	Not available	Not available	Not available	Not available	Not available	Not available

MIC values were interpreted with ECOFFs (1st choice) or tentative ECOFFs (2nd choice) set by EUCAST, or with CLSI-approved animal-specific clinical breakpoints (3rd choice) or human clinical breakpoints (4th choice) when ECOFFs were unavailable

Tetracycline MIC values in Bordetella bronchiseptica could not be interpretated as the ECOFF lies outside the tested drug concentration range

Abbreviations: ECOFF, epidemiological cut-off, R, resistant