Table S1. Classification, source of isolation, activity spectrum and localization of known enterocins.

Enterocins classes	*Enterococcus* spp. producer strain	Source/year of isolation	Activity spectrum	Localization	References
Class I: Lantibiotics (<5 kDa)					
Cytolysin (hemolysin)	*E. faecalis*	Clinical isolates Food Animals Healthy infants (1983- 1987)	*Enterococcus* spp. LAB strains Eukaryotic cells	Pheromone-responsive plasmid pAD1 (59.6 kb) or chromosome	[1]
	E. faecalis	VanB-*E. faecalis* clinical isolates	*Enterococcus faecalis*	Plasmid pMG2200 (106 kb)	[2]
Enterocin W (Wα and Wβ)	*E. faecalis* NKR-4-1	Thai fermented fish	*Bacillus coagulans* *Bacillus circulans* *Listeria innocua* *Pediococcus pentosaceus* *Enterococcus faecalis* *Lactococcus lactis* *Lactobacillus sakei*	Unknown	[3]
Class II: Non-lantibiotics (<10 kDa)					
<u>Class IIa: Pediocin-like bacteriocins</u>					
Enterocin A	*E. faecium* CTC492	Spanish dry fermented sausage	*Lactobacillus sake*	Chromosome	[4]
	E. faecium P21		*Pediococcus acidilactici*	Unknown	[5]
	E. faecium T136		*Pediococcus pentosaceus*	Chromosome	[6]
	E. faecium BFE 900	Black olives	*Lactobacillus plantarum* *Listeria innocua*	Unknown	[7]
	E. faecium EFM01	Dairy sources	*Listeria monocytogenes*	Unknown	[8]
	E. faecium DPC1146		*Enterococcus faecalis*	Chromosome	[9]
	E. faecium WHE 81		*Enterococcus faecium*	Chromosome	[10]
	E. durans BGGO9-30		Bacteriocinogenic activity not assessed	Unknown	[11]
	E. faecium		Bacteriocinogenic activity not assessed	Unknown	[12]

		Artisanal cheeses from Bulgaria			
	E. faecium N15	Japanese rice-bran paste		Unknown	[13]
	E. faecium	Clinical VREfm and VSEfm isolates (since 1991)	Bacteriocinogenic activity not assessed	Chromosome	[14]
	E. faecium	Clinical isolates from Bulgaria (2012-2015)	Bacteriocinogenic activity not assessed	Unknown	[12]
Enterocin P	*E. faecium* P13 *E. faecium* L50 *E. faecium* AA13 *E. faecium* G16	Spanish dry fermented sausages	*Listeria monocytogenes* *Clostridium perfringens* *Clostridium botulinum* *Clostridium sporogenes* *Staphylococcus carnosus* *Staphylococcus aureus* *Enterococcus faecalis* *Propionibacterium* species	aChromosome	[15–17]
	E. faecium 86	Meat pie	VanA *E.faecium* strains VanA *E. faecalis* strains *Listeria monocytogenes*	Plasmid	[18]
	E. faecium	Artisanal cheeses from Bulgaria	Bacteriocinogenic activity not assessed	Unknown	[12]
	E. faecium	Clinical isolates from Bulgaria (2012-2015)	Bacteriocinogenic activity not assessed	Unknown	[12]
	E. faecium	Clinical VREfm and VSEfm isolates (since 1997)	Bacteriocinogenic activity not assessed	Plasmid	[14]
Bacteriocin 43	*E. faecium* VRE82	VREfm clinical isolates (1994-1999) Healthy Japanese student (2002-2003)	*Enterococcus faecalis* *Enterococcus faecium* *Enterococcus hirae* *Enterococcus durans* *Listeria monocytogenes*	Plasmid pDT1-like (6.2 kb)	[19]

	E. faecium	Clinical VREfm and VSEfm isolates (since 1998)	Bacteriocinogenic activity not assessed	Small theta-replicating plasmids (ca. 7 kb)	[14]
Bacteriocin RC714	*E. faecium* RC714	Clinical sample (Human exudate) (1996)	*Listeria* spp. VanA and VanB *Enterococcus faecalis* VanA *Enterococcus faecium* *Lactobacillus paracasei* *Lactobacillus plantarum* *Leuconostoc spp.* *Pediococcus pentosaceus*	Unknown	[20]
Bacteriocin 31	*E. faecalis* YI717	Clinical isolate	*E. hirae* 9770 *Listeria monocytogenes* *Enterococcus faecium*	Pheromone-responsive conjugative plasmid pYI17 (57.5 kb)	[21]
	E. durans strains	Dairy sources	Bacteriocinogenic activity not assessed	Unknown	[11]
Bacteriocin GM-1	*E. faecium* GM-1	Newborn feces	*Bacillus subtilis* *Bacillus megaterium* *Staphylococcus aureus* *Listeria monocytogenes* *Lactobacillus acidophilus* *Streptococcus thermophilus* *Escherichia coli* *Proteus mirabilis* *Vibrio vulnificus* *Vibrio parahaemolyticus* *Vibrio alginolyticus* *Klebsiella pneumoniae* *Salmonella* Typhimurium *Pseudomonas aeruginosa*	Unknown	[22]
Avicin A	*E. avium* XA83 *E. avium* 208	Healthy infant feces (2005 and 2007)	*Listeria* spp. *Enterococcus* spp. *Lactobacillus* spp. *Leuconostoc* spp. *Pediococcus* spp. *Carnobacterium* spp.	Chromosome (7 kb DNA fragment)	[23]

Bacteriocin T8	*E. faecium* T8	Children infected with HIV	*Enterococcus faecalis* *Enterococcus faecium* *Enterococcus gallinarum* *Enterococcus hirae* *Listeria monocytogenes*	Plasmid T8 (7 kb)	[24]
Enterocin MC4-1	*E. faecalis* MC4	Root canals of monkeys *(Macaca fasdculaiis)*	*Enterococcus faecalis* *Enterococcus faecium* *Enterococcus gallinarum* *Enterococcus hirae* *Listeria monocytogenes*	Pheromone-responsive, conjugative plasmid pAMS1 (130 kb)	[25–27]
Hiracin JM79	*E. hirae* DCH5	Wild Mallard ducks	*Clostridium botulinum* *Listeria monocytogenes* *Staphylococcus aureus*	Chromosome	[28,29]
Enterocin S37	*E. faecalis* S37	Poultry feces	*Enterococcus faecalis* JH2-2 *Listeria monocytogenes* EGDe 107776 *Listeria innocua* *Lactobacillus brevis* F1.114 *Lactobacillus brevis* F145	Unknown	[30]
Bacteriocin E 50–52	*E. faecium* 50–52	Commercial Russian broiler chicken cecum	*Campylobacter jejuni* *Yersinia enterocolitica* *Yersinia pseudotuberculosis* *Staphylococcus aureus* *Staphylococcus epidermidis* *Listeria monocytogenes*	Unknown	[31]
Enterocin CRL35	*E. mundtii* CRL35	Argentinean artisanal cheese	*Listeria* spp. *Herpes simplex* viruses	Plasmid (50 kb)	[32] [33]
Mundticin QU 2	*E. mundtii* QU 2	Soybean (Japan)	*Enterococcus* spp. *Lactobacillus* spp. *Leuconostoc* spp. *Pediococcus* spp. *Listeria* spp.	Unknown	[34]
Mundticin ATO6	*E. mundtii* ATO6	Chicory endive	*Listeria monocytogenes* *Clostridium botulinum* *Lactobacillus salivarius*	Plasmid pEM6A	[34,35]

			Listeria sake *Leuconostoc paramesenteroides* *Leuconostoc mesenteroides* *Carnobacterium piscicola* *Pediococcus dextrinicus* *Pediococcus pentosaseus* *Enterococcus faecalis* *Enterococcus hirae* *Listeria inócua* *Clostridium botulinum* spores		
Durancin GL	*E. durans* 41D	Mexican-style artisanal cheese	*Listeria* spp.	Plasmid pDGL (8.3 kb)	[36,37]
Mundticin KS	*E. mndtii* NFRI 7393	Grass silage in Thailand	*Listeria monocytogenes* *Enterococcus faecium* IFO1371 *Enterococcus faecalis* IFO12964 *Enterococcus mundtii* JCM 8731T	Plasmid pML1 (50 kb)	[38]
Enterocin SE-K4	*E. faecalis*	Grass silage in Thailand	*Listeria* spp. *Bacillus Subtilis* *Clostridium beijerinckii*	Plasmid pEK4S (60 kb)	[39]
Enterocin M	*E. faecium* AL41	Sewage sludge	*Enterococcus faecium* *Enterococcus faecalis* *Enterococcus avium* *Staphylococcus aureus* *Listeria innocua* *Listeria monocytogenes* *Escherichia coli*	Unknown	[40]
Class IIb: Two-peptide bacteriocins					
Enterocin C	*E. faecalis* C901	Human colostrum	*Actinomyces neuii* *Enterococcus faecalis* *Enterococcus faecium* *Facklamia hominis* *Lactococcus lactis* *Lactobacillus paracasei* *Leuconostoc mesenteroides*	Plasmid pENTC (9 kb)	[41,42]

			Propionibacterium acnes *Staphylococcus caprae* *Staphylococcus epidermidis* *Staphylococcus anginosus* *Staphylococcus untermedius*		
Enterocin 1071 A and B	*E. faecalis* BFE 1071	Mini-pigs feces	*Enterococcus* spp. *Lactobacillus* *salivarius subsp. salivarius* *Listeria innocua* *Micrococcus* sp. *Peptostreptococcus aerogenes* *Propionibacterium* *Freudenreichii subsp* *shermani* *Streptococcus agalactiae*	Plasmid pEF1071 (50 kb)	[43]
	E. faecalis FAIR-E 309	Argentinian cheese	Bacteriocinogenic activity not assessed	Unknown	[44]
	E. durans BGGO8-25 *E. durans* BGGO8-26	Dairy sources	Bacteriocinogenic activity not assessed	Unknown	[11]
Enterocin X (Xα and Xβ)	*E. faecium* KU-B5	Sugar apples from Thailand	*Lactococcus lactis* *Enterococcus faecium* *Bacillus circulans* *Bacillus coagulans* *Bacillus subtilis*	Unknown	[45]
Class IIc: circular bacteriocins					
Bacteriocin AS-48	*E. faecalis* S-48	Clinical isolates (Human wound exudate)	*Bacillus* spp. *Enterococcus* spp. *Corynebacterium glutamicum* *Corynebacterium bovis* *Nocardia corrallina* *Micrococcus lysodeikticus* LA1000 *Pseudomonas fluorescens* CECT385 *Pseudomonas aeruginosa* CECTl10 *Pseudomona reptilivora* *Enterobacter cloacae*	Conjugative plasmid pMB2 (56 kb)	[46–48]

Bacteriocin 21	*E. faecalis*	Clinical isolate	*Enterococcus faecalis* *Enterococcus hirae* 9790 *Enterococcus faecium* *Streptococcus agalactiae* *Streptococcus sanguis* *Streptococcus aureus*	Pheromone-responsive conjugative plasmid pPD1 (59 kb)	[49]
Enterocin 4	*E. faecalis* INIA 4	Raw ewe's milk	*Clostridium tyrobutyricum* *Lactobacillus buchneri* *Lactobacillus brevis* *Enterococcus faecalis* *Enterococcus faecium* *Listeria monocytogenes* *Listeria innocua*	Unknown	[50]
Class IId: Leaderless bacteriocins					
Enterocin 62-6	*E. faecium* 62-6	Human vagina	*Lactobacillus* spp. *Streptococcus* spp. *Enterococcus* spp. *Corynebacterium* spp.	Plasmid	[51,52]
Enterocin DD14	*E. faecalis* 14	Meconium of a healthy newborn	*Staphylococcus aureus* *Listeria monocytogenes* *Enterococcus faecalis* *Bacillus subtilis* *Clostridium perfringens*	Chromosome	[53]
Enterocin FH 99	*E. faecium* FH 99	Human feces	*Listeria monocytogenes* *Lactococcus* spp. *Lactobacillus* spp. *Streptococcus* spp. *Enterococcus faecalis* spp.	Possibly plasmid	[54]
Enterocin L50A and L50B	*E. faecium* L50	Dry fermented sausage	*Escherichia coli* *Salmonella enterica* *Serratia marcescens* *Pseudomonas fluorescens*	Plasmid pCIZ1 (50 kb)	[55,56]

	E. faecium 6T1a	Spanish-style green olive fermentation	*Lactobacillus fermentum* *Lactococcus lactis* *Pediococcus pentosaceus* *Clostridium* spp. *Bacillus strains* *Enterococcus faecalis,* *Listeria innocua* *Listeria monocytogenes*	Plasmid pEF1 (23 kb)	[57]
	E. faecium F58	Jben (goat's cheese)	*Listeria. monocytogenes* *Listeria innocua* *Lactococcus lactis* *Staphylococcus aureus* *Bacillus cereus* *Bacillus subtilis* *Brochothrix* *Clostridium perfringens* *Clostridium tyrobutyricum*	Plasmid (22 kb)	[58]
	E. faecium B1 (LMG 19827) *E. faecium* B2 (LMG 19828)	Malaysian tempeh	*Enterococcus faecalis* *Enterococcus faecium* *Carnobacterium divergens* *Chryseobacterium piscicola* *Lactobacillus brevis* *L. pentosus* *Paralactobacillus selangorensis*	Chromosome	[59]
Enterocin Q	*E. faecium* L50	Dry fermented sausage	*Lactobacillus sakei* *Enterococcus faecium*	Plasmid pCIZ2 (7.4 kb)	[16,55]
Enterocin RJ-11	*E. faecalis* RJ-11	Rice bran (1999–2000)	*Bacillus subtilis* *Bacillus amyloliquefaciens* *Listeria monocytogenes* *Enterococcus* spp.	Unknown	[60]
Enterocin 7A and 7B	*E. faecalis* 710C	Beef	*Brochothrix campestris* *Brevundimonas diminuta* *Carnobacterium divergens* *Carnobacterium maltaromaticum*	Unknown	[61]

			Clostridium botulinum spores and viable cells *Clostridium butyricum* *Clostridium difficile* *Clostridium perfringens* *Clostridium sporogenes* *Enterococcus faecium* BFE900 *Lactobacillus sakei* *Leuconostoc gelidum* *Listeria innocua* *Listeria monocytogenes* *Pediococcus acidilactici* *Staphylococcus aureus* Methicillin-resistant *Staphylococcus aureus* VREfm strains		
MR10A and MR10B	*E. faecalis* MRR 10-3	Bird (*Upupa epops*) uropyal glands (2004)	*Staphylococcus* sp. *Bacillus licheniformis* *Enterococcus faecium* strains *Lactococcus lactis* LM2301 *Listeria innocua* 4030 *Listeria monocytogenes* 4032 *Staphylococcus aureus* 240 *Micrococcus luteus* 241 *Bacillus cereus* LWL1 *Escherichia coli* U-9	Chromosome	[62]
Enterocin EJ97	*E. faecalis* EJ97	Municipal wastewater	*Enterococcus* spp. *Bacillus* spp. *Listeria* spp. *Staphylococcus aureus*	Plasmid pEJ97 (60 kb)	[63,64]
Enterocin K1	*E. faecium*	Unknown	*Enterococcus faecium* VREfm	Unknown	[65]
Class II: Other bacteriocins					
Bacteriocin 32	*E. faecium* VRE200	VREfm clinical isolates from USA (1994-1999)	*Enterococcus faecium* *Enterococcus hirae* *Enterococcus durans*	Plasmid pTI1 (12.5 kb)	[66]

	VSEfm	Clinical isolates from Japan (1990-1993)	*Enterococcus faecium* *Enterococcus hirae* *Enterococcus durans*	Plasmid pTI1 (12.5 kb)	[66]
	E. faecium	Healthy students (2002-2003)	Bacteriocinogenic activity not assessed	Plasmid	[66]
	VREfm	Clinical isolates (since 1992)	Bacteriocinogenic activity not assessed	Plasmid	[14]
Bacteriocin 51	*E. faecium* VRE38	VREfm clinical isolate (1994-2002)	*Enterococcus faecium* *Enterococcus hirae* *Enterococcus durans*	Mobile plasmid pHY (6 kb)	[67]
Enterocin B	*E. faecium* T136	Spanish dry fermented sausage	*Clostridium sporogenes* *Clostridium tyrobutyricum* *Propionibacterium* spp. *Listeria innocua* *Listeria monocytogenes* *Staphylococcus aureus* *Staphylococcus carnosus* *Lactobacillus sake* FVM 148	Chromosome	[6]
	E. faecium	Artisanal cheeses from Bulgaria	Bacteriocinogenic activity not assessed	Unknown	[12]
	E. faecium	VREfm/VSEfm clinical isolates	Bacteriocinogenic activity not assessed	Chromosome (when assessed)	[14]
	E. faecium	Clinical isolates from Bulgaria (2012-2015)	Bacteriocinogenic activity not assessed	Unknown	[12]
Bacteriocin EF478	*E. faecalis* 478	Clinical samples (human feces) (2014-2015)	MDREfm MDREfs VREfm VREfs	Unknown	[68]
Enterocin 96	*E. faecalis* WHE 96	Munster Cheese	*Enterococcus* spp. *Lactobacillus* spp. *Bacillus* spp. *Listeria* spp. *Staphylococcus* spp.	Plasmid	[69]

Enterocin F4-9	*E. faecalis* F4-9	Egyptian salted-fermented fish	*Enterococcus faecalis* JCM 5803T *Enterococcus durans* NBRC 100479T *Escherichia coli* JM109	Unknown	[70]
Durancin 61A	*E. durans* 61A	Fermented milk	Clinical drug-resistant *Clostridium difficile* Clinical VREfm Clinical methicillin-resistant *Staphylococcus aureus*	Unknown	[71]
Enterocin IT	*E. faecium* IT62	Italian ryegrass in Japan	*Enterococcus faecium* WHE 81 *Enterococcus faecium* LC 25 *Enterococcus hirae* CIP 5855 *Bacillus subtilis* CIP 7718 *Lactococcus lactis* LC 72	Plasmid pTIT1 (1.38 kb)	[56,72]
Enterocin ESL5	*E. faecalis* SL-5	Human feces	*Bacillus cereus* KCTC 3624 *Bacillus subtilis* KFRI 179 *Listeria monocytogenes* *Propionibacterium acnes* ATCC 29399 *Staphylococcus aureus* KCTC 1927	Unknown	[73]
Class III: Bacteriolysins (>10 KDa)					
Enterolysin A	*E. faecalis* LMG 2333	Fish from Iceland	*Lactobacillus* spp. *Lactococcus* spp. *Pediococcus* spp. *Enterococcus faecium* CTC492	Unknown	[74]
	E. faecalis DPC5280	Irish raw milk	*Enterococcus faecalis* DPC1146 *Lactococcus lactis* HP *Lactococcus lactis* DPC3147 *Lactococcus lactis* CNRZ481 *Lactococcus lactis* DPC141 *Lactobacillus fermenticum* DPC3310 *Pediococcus pentasaceus* DPC5063 *Listeria innocua* DPC3306	Unknown	[75]
	E. faecalis	Artisanal cheeses from Bulgaria	Bacteriocinogenic activity not assessed	Unknown	[12]
Bacteriocin 41	*E. faecalis* YI714	Clinical isolate	*Enterococcus faecalis*	Conjugative plasmid pYI14 (61 kb)	[76]

	VanB-*E. faecalis* clinical isolates	*Enterococcus faecalis*	Plasmid pMG2200 (106 kb)	[2]

Abbreviations: LAB – Lactic acid bacteria; VRE – vancomycin resistant enterococci; VREfm - vancomycin resistant *E. faecium;* VREfs - vancomycin resistant *E. faecalis;* VSEfm - vancomycin susceptible *E. faecium;* MDREfm – Multidrug-resistant *Enterococcus faecium*; MDREfs – Multidrug-resistant *Enterococcus faecalis.* Enterocins without classification were not included in the table: Enterocin V, produced by *E. faecalis,* is effective against *Candida albicans;* Enterocin CCM 4231, produced by *E. faecium* CCM 4231, recovered from the rumen content of a calf, is effective against *Clostridium perfringens, Listeria monocytogenes* and *Staphylococcus aureus;* Enterocin 416K1 produced by *Enterococcus casseliflavus* IM 416K1, isolated from Italian sausages is highly effective against *Listeria monocytogenes*; Enterocin RM6, isolated from *E. faecalis* OSY-RM6, recovered from raw milk, has antimicrobial activity against several Gram-positive bacteria including *Listeria monocytogenes, Bacillus cereus*, and methicillin-resistant *Staphylococcus aureus* [77–80].

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