

Table S1. The endpoint optical density (OD) difference value between the positive control OD (bacteria incubated alone) and the OD of the test sample (bacteria incubated with phage) for individual anti-*E. coli* bacteriophages included in the cocktail. An optical density difference (OD) value above 0.1 indicates **strong inhibition** of growth by the tested phage; the difference between 0.1 and 0.05 indicates **weak inhibition** and the difference below 0.05 is considered as **no influence** of phage on the bacteria growth.

Bacterial strain	End point OD difference				
	241Ecol14PP	303Ecol101PP	308Ecol101PP	310Ecol104PP	348Ecol098PP
<i>E. coli</i> _090	0.26	0.01	0.01	0.02	0.00
<i>E. coli</i> _091	0.01	0.01	0.02	-0.04	-0.05
<i>E. coli</i> _092	0.18	0.23	0.20	0.00	-0.03
<i>E. coli</i> _093	0.07	0.09	0.26	0.09	-0.06
<i>E. coli</i> _094	0.15	0.01	0.03	0.27	0.17
<i>E. coli</i> _095	0.10	0.29	0.21	0.20	0.29
<i>E. coli</i> _096	-0.12	0.03	0.03	-0.04	0.03
<i>E. coli</i> _097	-0.01	0.09	0.24	0.17	0.12
<i>E. coli</i> _098	-0.01	0.32	0.22	0.35	0.31
<i>E. coli</i> _099	0.08	0.06	0.09	0.26	0.07
<i>E. coli</i> _100	-0.02	0.02	0.03	0.05	0.11
<i>E. coli</i> _101	0.02	0.01	-0.07	0.04	-0.02
<i>E. coli</i> _103	-0.01	0.09	0.01	0.05	0.10
<i>E. coli</i> _104	-0.01	0.05	0.04	0.23	0.03
<i>E. coli</i> _117	0.06	-0.04	0.05	-0.08	0.12
<i>E. coli</i> _118	0.16	0.05	0.11	-0.10	0.26
<i>E. coli</i> _132	0.18	0.17	0.20	0.20	0.05
<i>E. coli</i> _133	0.20	0.20	0.21	0.24	0.27

Table S2. The endpoint optical density (OD) difference value between the positive control OD (bacteria incubated alone) and the OD of the test sample (bacteria incubated with phage) for individual anti-*S. aureus* bacteriophages included in the cocktail. An optical density difference (OD) value above 0.1 indicates **strong inhibition** of growth by the tested phage; the difference between 0.1 and 0.05 indicates **weak inhibition** and the difference below 0.05 is considered as **no influence** of phage on the bacteria growth.

Bacterial strain	End point OD difference		
	351Saur083PP	355Saur083PP	357Saur119PP
<i>S. aureus</i> _058	0.055	0.370	0.007
<i>S. aureus</i> _059	0.053	0.239	0.092
<i>S. aureus</i> _060	0.096	0.421	0.016
<i>S. aureus</i> _062	0.104	0.177	0.040
<i>S. aureus</i> _063	0.170	0.114	0.116
<i>S. aureus</i> _067	0.048	0.157	0.013
<i>S. aureus</i> _069	0.003	0.315	-0.034
<i>S. aureus</i> _075	0.006	0.295	no data
<i>S. aureus</i> _076	0.234	0.321	0.212
<i>S. aureus</i> _079	-0.002	0.058	-0.025
<i>S. aureus</i> _080	-0.003	0.326	-0.037
<i>S. aureus</i> _082	0.402	0.361	0.119
<i>S. aureus</i> _083	0.314	0.318	0.134
<i>S. aureus</i> _090	0.039	0.321	0.082
<i>S. aureus</i> _091	0.102	-0.103	-0.034

Table S3. Summary of lytic activity of tested anti-*E.coli* and anti-*S aureus* bacteriophages included in anti-mastitis cocktail towards the bacterial collection.

Bacteriophage	Bacteria growth inhibition					
	Strong		Weak		No influence	
	Number of strains	% of tested strains	Number of strains	% of tested strains	Number of strains	% of tested strains
241Ecol014PP	6	33.3%	4	22.2%	8	44.4%
303Ecol101PP	5	27.8%	4	22.2%	9	50.0%
308Ecol101PP	8	44.4%	1	5.6%	9	50.0%
310Ecol104PP	8	44.4%	2	11.1%	8	44.4%
348Ecol098PP	9	50.0%	1	5.6%	8	44.4%
351Saur083PP	6	40.0%	3	20.0%	6	40.0%
355Saur083PP	13	86.7%	1	6.7%	1	6.7%
357Saur119PP	4	28.6%	2	14.3%	8	57.1%