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Novel *ex vivo* screening assay to preselect farm specific pre- and probiotics in pigs

K. Zeilinger, J. Hellmich, J. Zentek and W. Vahjen

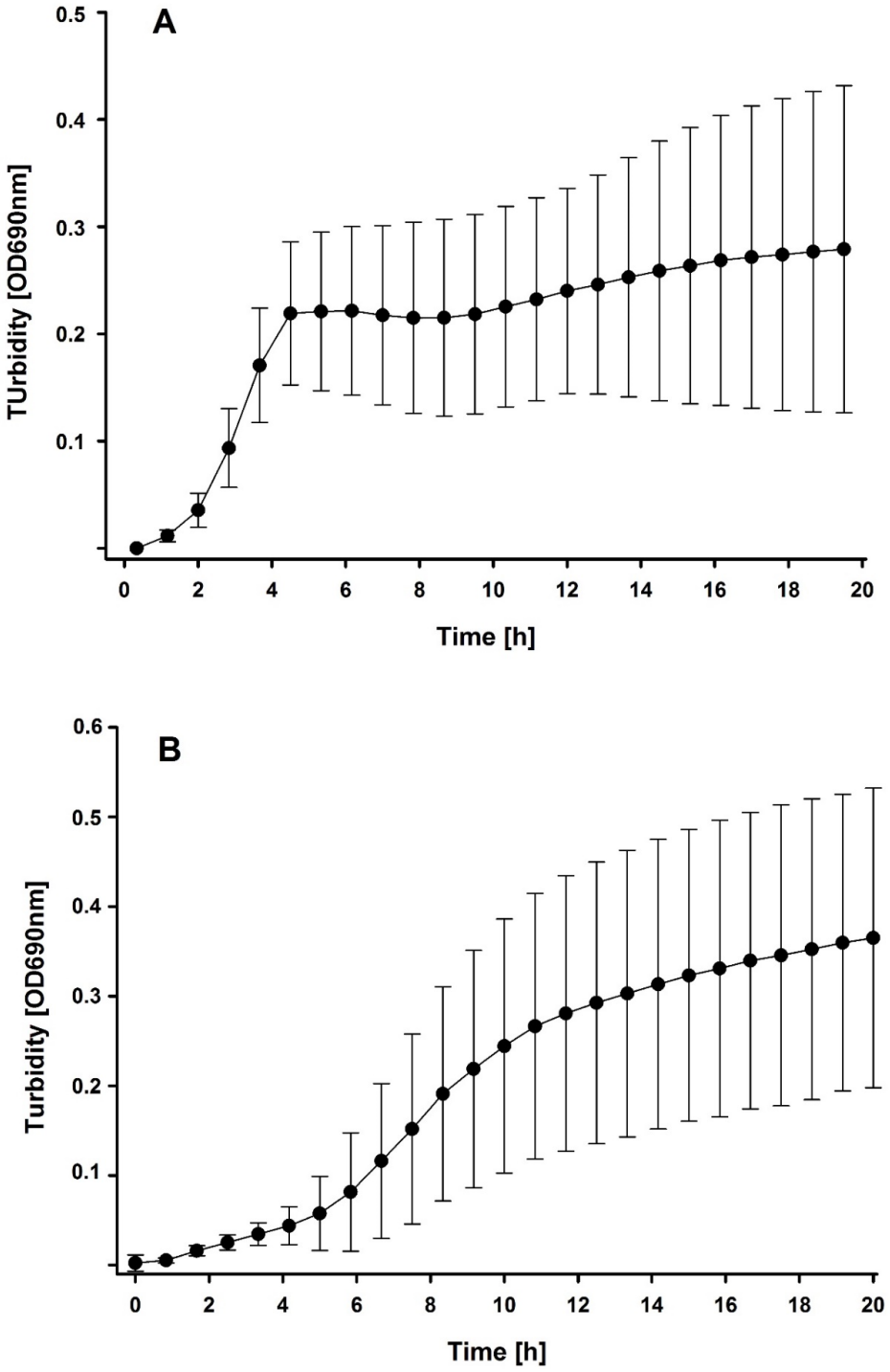

Figure S1. Growth of (A) the *Escherichia coli* and (B) the *Clostridium difficile* strain after incubation in sow faecal slurries (n=60).

Table S1. Antibiotics used in this study.

Bacterial strain	Antibiotics	Final concentrations [µg/mL]
Clostridium difficile	Colistinsulfate	15.6
	Cefotaxime	65.5
	Cloxacillin	3.9
	Trimethoprim	250
Clostridium perfringens	Trimethoprim	31.25
	Spectinomycin	15.63
	Sulfamethoxazole	7.8
	Colistinsulfate	250
	Polymycin B	250
	Kanamycin	125
	Streptomycin	125
Escherichia coli	Cloxacillin	125
	Metronidazole	125
	Vancomycin	62.5

Table S2. Impact of pre- and probiotic products on the lag time of a pathogenic *Escherichia coli* strain after incubation in sow faecal slurries [h].

		Prebiotic products			Probiotic products			FOS & Probiotic combinations			Inulin & probiotic combinations			MOS & probiotic combinations			
Farm	Control	FOS	Inulin	MOS	Bacillus	Enterococcus	Yeast	Bacillus	Enterococcus	Yeast	Bacillus	Enterococcus	Yeast	Bacillus	Enterococcus	Yeast	SEM
A	3.2^{a,b}	4.11^{b,c}	3.13^{a,b}	2.99^{a}	3.25^{a,b}	3.24^{a,b}	3.24^{a,b}	3.82^{a,b,c}	4.74^{d}	3.84^{a,b,c}	2.98^{a}	3.24^{a,b}	3.13^{a,b}	2.83^{a}	3.03^{a}	2.95^{a}	0.58
B	3.32^{a-d}	3.81^{c,d}	3.4^{a-d}	2.86^{a,b,c}	3.26^{a-d}	3.22^{a-d}	3.18^{a-d}	3.48^{a-d}	4.16^{d}	3.67^{a-d}	3.11^{a,b,c}	3.48^{a-d}	3.25^{a-d}	2.53^{a}	2.73^{a,b}	2.68^{a,b}	0.50
C	3.09	3.7	3.35	3.04	4.35	3.82	3.08	3.68	3.67	3.44^{b,c,d}	3.16	3.36	3.23	2.62	2.97	2.95	0.63
D	3.63	3.16	3.00	2.78	3.41	3.58	3.35	2.93	3.12	3.15	2.82	3.04	2.8	2.77	3.01	4.1	0.67
E	2.31	2.41	4.38	1.73	2.95	2.79	2.34	3.41	2.51	2.73	2.76	3.68	2.88	2.7	2.74	2.53	1.04
F	2.79	2.78	2.55	2.48	2.92	3.08	2.65	2.65	2.97	2.14	2.67	2.46	2.37	2.59	2.68	2.51	0.64
G	3.83	2.54	3.72	3.18	3.78	3.18	3.4	3.45	2.84	3.48	3.9	2.75	3.05	3.43	2.76	3.14	0.86
H	3.13	2.88	2.72	2.69	2.85	3.21	3.08	2.92	2.95	2.67	2.85	2.78	2.72	2.53	2.42	2.67	0.33
I	3.6^{a,b,c}	3.52^{a,b,c}	3.79^{a,b,c}	3.19^{a,b,c}	4.41^{b,c}	3.24^{a,b,c}	3.38^{a,b,c}	2.6^{a,b}	2.03^{a}	2.67^{a,b}	3.71^{a,b,c}	3.71^{a,b,c}	4.73^{c}	3.58^{a,b,c}	3.16^{a,b,c}	3.92^{b,c}	0.82
J	2.75^{a}	4.54^{b}	4.11^{a,b}	2.58^{a}	3.01^{a}	3.07^{a}	3.05^{a}	4.87^{b}	4.15^{a,b}	4.24^{a,b}	3.88^{a,b}	4.07^{a,b}	3.9^{a,b}	2.76^{a}	2.5^{a}	2.43^{a}	1.12
K	3.25^{a,b}	3.22^{a,b}	2.95^{a,b}	2.77^{a}	3.27^{a,b}	3.32^{a,b}	3.08^{a,b}	3.17^{a,b}	3.58^{b}	3.17^{a,b}	3.17^{a,b}	3.21^{a,b}	3.08^{a,b}	3.17^{a,b}	2.91^{a,b}	2.9^{a,b}	0.29
L	3.83^{b,c}	2.07^{a}	3.26^{a,b,c}	3.45^{a,b,c}	3.8^{b,c}	3.31^{a,b,c}	3.38^{a,b,c}	2.41^{a,b}	2.29^{a}	2.25^{a}	4.0^{d}	2.76^{a,b,c}	3.02^{a,b,c}	3.23^{a,b,c}	3.29^{a,b,c}	3.14^{a,b,c}	0.70
M	3.21	2.71	2.93	2.87	3.25	3.2	3.28	3.66	2.42	3.34	2.86	3.16	2.99	2.82	2.93	2.78	0.60
N	2.92	3.03	2.48	3.03	2.98	3.1	2.95	2.68	2.59	2.52	2.87	2.54	2.52	2.73	3.02	2.64	0.34
O	2.44	3.21	2.48	2.42	3.15	2.48	2.47	3.14	3.5	2.34	2.45	2.92	2.36	2.76	2.55	2.99	0.60
P	2.89^{a}	7.78^{c}	2.8^{a}	2.72^{a}	2.84^{a}	3.02^{a}	2.97^{a}	4.18^{a,b}	5.18^{b}	4.77^{a,b}	2.82^{a}	3.28^{a}	2.83^{a}	2.68^{a}	2.88^{a}	2.78^{a}	1.46
Q	3.43	2.92	2.76	2.96	3.76	3.58	3.69	3.13	3.0	2.98	3.25	2.99	2.73	3.23	3.23	3.02	0.44
R	3	3.6	3.25	2.92	2.96	2.89	2.83	3.58	4.29	4.49	2.72	3.09	3.14	2.67	2.92	3.01	0.73
S	2.39^{a,b}	2.44^{a,b}	2.29^{a,b}	2.28^{a,b}	2.38^{a,b}	2.47^{a,b}	2.55^{a,b}	2.42^{a,b}	2.7^{b}	2.45^{a,b}	2.32^{a,b}	2.37^{a,b}	2.51^{a,b}	2.15^{a}	2.44^{a,b}	2.19^{a}	0.18
T	2.4	1.93	1.98	2.07	2.4	2.58	2.39	1.98	2.08	1.96	2.1	2.17	2.06	2.15	2.25	1.95	0.28

^{a,b,c,d} = different superscripts within rows denote significant statistical differences (ANOVA, Tukey-HSD Post-hoc test at $P \leq 0.05$; n=960)

Table S3. Impact of pre- and probiotic products on the lag time of a pathogenic *Clostridium difficile* strain after incubation in sow faecal slurries [h]

		Prebiotic products			Probiotic products			FOS & Probiotic combinations			Inulin & probiotic combinations			MOS & probiotic combinations			
Farm	Control	FOS	Inulin	MOS	Bacillus	Enterococcus	Yeast	Bacillus	Enterococcus	Yeast	Bacillus	Enterococcus	Yeast	Bacillus	Enterococcus	Yeast	SEM
A	7.38^{a,b,c}	6.60^{a,b,c}	6.93^{a,b,c}	6.80^{a,b,c}	8.99^{a,b,c}	7.63^{a,b,c}	7.22^{a,b,c}	4.16^{a,b}	5.28^{a,b,c}	4.65^{a,b,c}	9.65^{b,c}	3.50^{a}	10.10^{c}	5.97^{a,b,c}	5.18^{a,b,c}	4.29^{a,b}	2.49
B	7.33	7.85	6.96	8.41	6.61	6.09	6.9	7.05	7.69	5.71	7.55	6.97	5.55	6.08	7.75	6.21	1.87
C	6.49^{a,b}	6.34^{a,b}	7.37^{a,b}	7.63^{a,b}	4.93^{a,b}	5.84^{a,b}	10.04^{b}	5.32^{a,b}	4.10^{a}	5.66^{a,b}	7.34^{a,b}	6.02^{a,b}	5.61^{a,b}	5.86^{a,b}	7.26^{a,b}	7.23^{a,b}	2.08
D	7.76	7.48	8.84	5.32	8.72	5.93	6.37	8.16	6.60	7.52	7.99	7.17	6.19	7.06	6.93	6.28	1.91
E	7.07	5.78	6.17	6.96	7.03	6.00	5.38	6.24	6.76	7.80	7.33	7.97	8.52	7.15	7.59	8.43	1.9
F	5.95	6.42	7.85	7.89	6.26	6.26	5.54	8.93	5.09	6.12	4.92	5.36	7.24	8.13	7.55	7.39	1.81
G	7.61	7.55	7.76	7.75	6.44	6.75	6.92	9.18	7.13	7.14	7.85	6.32	6.61	7.04	8.50	5.75	1.65
H	7.60	7.52	5.64	7.67	6.90	7.23	7.45	7.28	8.13	7.76	6.21	5.63	7.45	9.20	6.01	7.73	1.64
I	9.34	8.99	8.86	7.28	6.99	7.4	8.62	6.17	7.29	8.20	8.82	6.94	8.14	7.97	7.92	7.06	1.79
J	8.09	7.22	6.81	8.24	7.67	9.29	6.54	7.65	8.37	9.40	9.84	7.61	7.99	8.33	9.33	7.09	1.66
K	6.87	7.70	7.68	10.11	8.62	6.75	6.89	10.25	9.04	5.76	9.66	5.87	7.46	6.81	8.17	8.43	2.13
L	7.48^{a,b}	7.30^{a,b}	7.04^{a,b}	4.63^{a}	7.87^{a,b}	7.53^{a,b}	8.36^{a,b}	9.82^{b}	7.67^{a,b}	6.67^{a,b}	7.68^{a,b}	6.78^{a,b}	8.38^{a,b}	8.31^{a,b}	6.20^{a,b}	7.57^{a,b}	1.61
M	8.60	7.74	7.68	6.49	7.70	8.61	6.27	7.44	7.67	9.21	8.36	7.50	6.47	8.05	6.51	7.73	1.59
N	7.22^{a}	6.66^{a}	7.25^{a}	8.03^{a,b}	7.33^{a,b}	10.76^{a,b}	7.52^{a,b}	8.18^{a,b}	8.97^{a,b}	9.49^{a,b}	12.03^{b}	8.83^{a,b}	9.38^{a,b}	7.96^{a,b}	7.89^{a,b}	7.4^{a,b}	1.91
O	8.56	8.07	10.29	9.53	9.08	8.39	7.31	8.93	9.17	8.56	9.35	7.74	9.26	7.25	8.12	8.27	1.59
P	7.71^{a,b}	9.63^{a,b}	10.80^{b}	7.27^{a,b}	8.00^{a,b}	7.04^{a,b}	9.41^{a,b}	9.68^{a,b}	9.04^{a,b}	8.41^{a,b}	9.17^{a,b}	9.24^{a,b}	10.32^{a,b}	8.68^{a,b}	9.20^{a,b}	6.55^{a}	1.62
Q	9.55	9.27	8.89	9.48	9.82	11.26	10.45	10.89	10.90	8.75	8.71	11.07	10.02	10.67	8.70	9.13	1.75
R	10.29	9.81	11.55	8.83	11.28	11.64	9.36	9.29	9.47	10.55	10.84	8.89	9.39	9.27	9.55	9.94	1.90
S	11.55	12.76	11.79	11.66	11.70	12.23	9.88	10.49	12.19	10.14	12.05	11.56	10.77	10.09	11.08	9.41	1.87
T	12.57^{a,b,c}	11.96^{a,b,c}	15.12^{b,c}	9.74^{a,b}	8.71^{a}	10.49^{a,b}	14.15^{a,b,c}	13.85^{a,b,c}	12.84^{a,b,c}	13.77^{a,b,c}	14.75^{b,c}	16.09^{c}	12.6^{a,b,c}	10.54^{a,b,c}	10.93^{a,b,c}	12.76^{a,b,c}	2.52

^{a,b,c,d} = different superscripts within rows denote significant statistical differences (ANOVA, Tukey-HSD Post-hoc test at $P \leq 0.05$; n=960)

Table S4. Overall multiple comparison test of lag time for *Clostridium difficile* lag times after incubation in sow fecal slurries supplemented with pre- and probiotics [h].

Item	Subset
MOS & yeast	7.73
Inulin & *Enterococcus*	7.85
MOS	7.98
MOS & *Enterococcus*	8.01
MOS & *Bacillus*	8.02
Yeast	8.02
Bacillus	8.03
FOS & yeast	8.06
FOS	8.13
Enterococcus	8.15
FOS & *Enterococcus*	8.16
Control	**8.25**
Inulin & yeast	8.37
FOS & *Bacillus*	8.44
Inulin	8.56
Inulin & *Bacillus*	9.00
Significance	0.244