

Table S1: The list of mushroom species and their abbreviations

Species	Abbreviation
<i>Meripilus giganteus</i> water extract	MgV
<i>M. giganteus</i> alkali extract	MgA
<i>Agaricus silvaticus</i> water extract	AsV
<i>A. silvaticus</i> alkali extract	AsA
<i>Craterellus cornucopioides</i> water extract	CcV
<i>C. cornucopioides</i> alkali extract	CcA
<i>Ganoderma applanatum</i> water extract	GaV
<i>G. applanatum</i> alkali extract	GaA
<i>Piptoporus betulinus</i> water extract	PbV
<i>P. betulinus</i> alkali extract	PbA
<i>Laetiporus sulphureus</i> water extract	LsV
<i>L. sulphureus</i> alkali extract	LsA
<i>Schizophyllum commune</i> water extract	ScV
<i>S. commune</i> alkali extract	ScA
<i>Fomitopsis pinicola</i> water extract	FpV
<i>F. pinicola</i> alkali extract	FpA
<i>Boletus edulis</i> water extract	BeV
<i>B. edulis</i> alkali extract	BeA
<i>Clitocybe geotropa</i> water extract	CgV
<i>C. geotropa</i> alkali extract	CgA
<i>Lenzites betulinus</i> water extract	LbV
<i>L. betulinus</i> alkali extract	LbA
<i>Polyporus squamosus</i> water extract	PsV
<i>P. squamosus</i> alkali extract	PsA
<i>Cantharellus cibarius</i> water extract	ChcV
<i>C. cibarius</i> alkali extract	ChcA
<i>Agrocybe aegerita</i> water extract	AaV
<i>A. aegerita</i> alkali extract	AaA
<i>Trametes versicolor</i> water extract	TvV
<i>T. versicolor</i> alkali extract	TvA
<i>Daedalea quercina</i> water extract	DqV
<i>D. quercina</i> alkali extract	DqA
<i>Auricularia mezenterica</i> water extract	AmV
<i>A. mezenterica</i> alkali extract	AmA
<i>Picipes badius</i> water extract	PibV
<i>P. badius</i> alkali extract	PibA
<i>Ganoderma lucidum</i> water extract	GlV
<i>G. lucidum</i> alkali extract	GlA
<i>Fistulina hepatica</i> water extract	FhV
<i>F. hepatica</i> alkali extract	FhA

Table S2. Antiadhesion and antibiofilm-forming activity of water and alkali mushroom extracts against *L. monocytogenes* ATCC 19111 and *S. enteritidis* ATCC 13076

	conc. (mg/mL)	Water extract				Alkali extract			
		<i>L. monocytogenes</i>		<i>S. enteritidis</i>		<i>L. monocytogenes</i>		<i>S. enteritidis</i>	
		%IA	%IB	%IA	%IB	%IA	%IB	%IA	%IB
Mg	0.156	64.37±1.30	93.94±1.90	14.29±2.19	64.21±2.73	43.41±3.41	87.77±3.57	0.00±0.00	70.67±3.10
	0.312	71.26±2.77	93.79±3.19	17.65±1.89	72.84±1.74	47.31±3.16	87.60±0.93	9.24±2.90	77.66±3.08
	0.625	70.06±3.92	89.81±3.30	16.39±1.12	88.41±4.78	28.14±2.77	82.28±3.41	9.80±0.89	0.00±0.00
	1.25	65.97±2.72	94.16±1.15	22.69±2.04	55.56±4.57	41.92±3.48	87.70±1.25	14.29±1.62	0.00±0.00
	2.5	48.70±2.30	69.13±3.37	21.01±1.38	20.99±2.57	43.41±1.48	63.80±2.91	15.97±2.01	0.00±0.00
As	0.156	54.37±1.63	70.83±7.21	21.11±2.24	97.36±4.00	48.74±2.41	27.65±1.33	24.44±2.98	98.34±0.48
	0.312	54.88±1.00	80.76±3.75	22.59±3.07	91.25±1.24	44.63±1.54	57.98±2.46	25.93±3.66	92.98±0.78
	0.625	52.23±1.57	78.29±3.77	25.43±3.95	91.68±1.76	52.51±1.70	69.30±1.49	20.49±1.93	94.89±0.92
	1.25	54.57±2.34	73.18±3.35	18.52±3.92	88.21±1.75	57.53±1.52	50.38±1.18	18.89±1.91	97.08±2.54
	2.5	52.48±2.19	69.78±1.75	9.63±4.64	65.34±0.68	58.22±1.02	44.87±1.58	16.30±3.73	52.57±5.79
Cc	0.156	62.80±1.02	91.63±0.45	4.04±2.09	25.67±0.67	70.34±2.04	68.39±1.00	13.23±2.50	67.59±5.47
	0.312	60.79±1.48	93.29±0.73	4.93±2.56	34.69±1.32	75.99±0.74	67.91±2.63	15.25±3.16	75.86±1.96
	0.625	60.91±2.12	95.31±0.63	1.79±1.69	0.00±0.00	74.99±1.77	60.79±1.16	10.87±1.77	84.95±6.01
	1.25	66.44±1.15	95.40±2.90	0.00±0.00	0.00±0.00	74.17±1.15	65.85±1.19	6.84±2.82	75.21±3.93
	2.5	60.28±0.52	89.98±2.01	0.00±0.00	0.00±0.00	69.59±0.97	0.00±0.00	0.00±0.00	44.71±2.00
Ga	0.156	57.71±1.06	37.90±3.22	29.38±2.27	30.88±2.49	78.30±1.94	61.03±2.84	21.60±3.68	14.78±0.99
	0.312	60.75±2.59	15.13±2.57	27.18±2.37	43.16±2.11	78.94±2.03	55.65±0.91	23.69±3.28	25.07±1.46
	0.625	61.16±3.26	49.61±1.94	24.74±2.36	49.20±1.69	80.82±2.57	84.89±5.06	25.09±4.11	50.70±3.52
	1.25	62.02±1.48	41.42±2.37	28.46±1.13	40.11±2.76	79.02±1.63	79.28±4.00	24.74±3.47	51.56±2.66
	2.5	61.65±4.51	0.00±0.00	11.27±1.79	23.06±2.58	76.97±0.95	0.00±0.00	26.83±3.08	33.18±1.89
Pb	0.156	67.06±4.00	90.78±1.22	16.23±3.40	73.11±2.10	58.08±5.78	84.72±2.95	14.83±1.13	86.16±2.43
	0.312	64.45±1.75	90.22±1.89	16.28±2.53	90.82±2.55	49.31±1.71	84.76±2.53	15.18±2.39	89.08±2.09
	0.625	60.23±4.12	95.11±1.95	19.02±2.10	70.72±5.97	38.63±3.44	94.80±1.82	16.23±2.54	99.21±2.55
	1.25	51.54±5.60	95.04±1.51	19.00±1.33	60.13±4.72	30.02±4.56	88.16±0.92	20.42±1.79	54.39±3.25
	2.5	56.96±2.92	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	45.02±1.62
Ls	0.156	49.68±1.12	75.82±0.99	0.00±0.00	0.00±0.00	51.61±6.54	73.94±1.97	26.36±1.38	49.91±6.46
	0.312	53.18±3.90	69.67±1.34	0.00±0.00	0.00±0.00	55.46±1.35	68.07±0.63	35.56±2.47	56.96±5.89
	0.625	57.71±3.21	67.16±0.93	0.00±0.00	7.43±2.02	56.17±1.64	69.34±2.84	39.75±2.51	69.43±3.57
	1.25	57.60±7.26	62.96±4.17	0.00±0.00	17.67±1.35	56.96±3.66	54.30±2.81	40.31±2.32	69.80±5.50
	2.5	58.03±3.12	45.67±2.68	0.00±0.00	30.68±1.80	55.03±2.84	84.13±1.76	17.99±1.75	63.32±5.79
Sc	0.156	59.75±2.15	75.54±1.26	3.65±0.49	99.19±3.05	61.72±2.17	87.74±1.25	16.76±1.70	96.19±4.36
	0.312	55.08±1.70	83.36±1.57	1.69±0.68	99.95±2.19	58.79±1.48	88.47±4.16	14.47±1.97	98.39±1.23
	0.625	59.89±0.53	87.08±1.05	0.05±0.18	87.84±1.08	59.75±1.69	94.66±5.63	12.17±1.70	99.92±1.05
	1.25	57.77±2.76	86.39±3.88	0.00±0.00	42.4±1.23	58.47±2.29	99.48±1.73	6.60±2.25	97.72±1.05
	2.5	61.58±3.16	78.263.93	0.00±0.00	33.33±0.91	55.30±0.75	91.49±2.09	0.00±0.00	52.58±2.72
Fp	0.156	49.60±2.14	79.99±1.58	0.00±0.00	73.78±2.67	52.21±3.38	85.73±3.98	9.72±1.12	86.80±2.02
	0.312	50.00±5.82	82.74±2.26	0.00±0.00	82.17±2.61	53.21±4.62	84.00±2.34	7.87±2.34	86.13±1.50
	0.625	41.97±5.00	87.58±1.56	0.00±0.00	96.97±2.21	60.64±3.18	95.16±1.51	2.78±2.06	60.70±1.28
	1.25	42.57±5.17	83.99±1.06	0.00±0.00	98.62±3.72	63.19±2.45	99.67±1.69	0.00±0.00	57.56±2.01
	2.5	30.72±7.53	65.84±5.17	0.00±0.00	62.91±4.13	53.55±0.39	85.43±2.93	0.00±0.00	0.00±0.00
Be	0.156	49.73±0.93	83.99±2.17	9.70±3.32	75.90±4.18	59.81±1.94	88.80±2.08	11.52±3.10	86.42±2.64
	0.312	47.96±1.63	65.59±2.44	1.21±0.98	85.63±3.94	59.74±2.06	97.91±5.00	6.67±1.74	90.18±1.21
	0.625	43.05±1.79	65.65±1.55	0.00±0.00	87.34±1.90	59.35±2.75	74.57±4.36	4.85±3.15	92.41±2.63
	1.25	32.25±4.58	88.81±3.80	0.00±0.00	85.21±2.63	55.20±1.60	73.38±1.36	0.00±0.00	89.61±2.16
	2.5	18.57±3.78	37.97±2.72	0.00±0.00	41.22±0.89	43.09±2.25	26.61±1.94	0.00±0.00	53.26±2.69
Cg	0.156	61.75±1.30	89.23±0.76	9.40±1.45	74.64±1.32	70.35±2.31	87.83±1.58	22.48±1.72	78.42±4.24
	0.312	62.82±2.21	86.69±0.34	0.00±0.00	44.84±1.87	67.36±3.31	90.24±3.06	27.52±3.90	92.11±1.61
	0.625	64.26±1.06	84.71±1.19	0.00±0.00	36.01±0.66	67.60±2.33	90.08±1.22	29.78±3.81	92.54±1.87
	1.25	63.66±1.98	71.97±0.63	0.00±0.00	0.00±0.00	66.47±3.26	95.18±1.25	29.87±3.14	86.29±1.07
	2.5	59.12±1.23	66.66±2.22	0.00±0.00	0.00±0.00	60.31±2.74	89.62±1.78	13.42±3.80	28.00±1.87
	0.156	37.91±1.24	98.49±1.69	24.19±2.38	0.00±0.00	46.06±3.50	95.49±3.60	45.52±2.45	42.90±2.41
	0.312	42.30±2.99	97.08±2.69	36.50±3.86	22.81±0.36	54.84±1.64	87.31±3.97	47.33±0.82	28.45±2.43

Lb	0.625	37.70±3.98	93.50±3.68	45.19±1.29	61.41±2.03	63.41±2.70	78.34±3.96	49.54±3.40	83.94±1.74
	1.25	37.28±2.84	64.91±2.14	49.13±4.55	72.03±5.24	62.51±1.20	49.99±3.42	51.27±4.12	92.57±4.56
	2.5	35.40±2.90	53.15±3.48	38.96±1.19	72.64±0.65	40.21±4.44	0.00±0.00	39.94±2.83	0.00±0.00
Ps	0.156	43.66±2.49	68.55±1.36	11.58±4.53	0.00±0.00	54.45±1.69	90.94±2.83	46.61±4.69	0.00±0.00
	0.312	50.86±3.15	67.98±2.94	18.60±5.25	0.00±0.00	54.45±2.42	90.82±1.43	46.37±1.99	7.15±1.84
	0.625	50.62±0.73	71.04±4.01	24.67±5.45	0.00±0.00	51.10±2.56	96.54±2.67	48.77±2.86	16.92±1.36
Chc	1.25	46.30±2.20	62.42±1.76	24.35±5.23	0.00±0.00	51.00±2.67	99.59±1.70	51.64±2.70	52.83±3.88
	2.5	45.34±3.87	62.72±2.55	21.48±5.65	0.00±0.00	47.02±3.05	99.08±1.83	44.14±4.43	0.00±0.00
	0.156	62.06±1.42	92.66±1.76	18.03±2.71	31.07±3.20	53.23±3.08	86.12±2.82	35.53±1.03	88.28±4.80
Aa	0.312	65.15±1.22	99.96±2.08	21.73±3.32	46.56±2.89	60.17±2.15	91.61±0.67	34.61±3.42	89.37±1.50
	0.625	65.50±1.02	85.30±3.80	30.92±2.91	53.15±0.93	67.63±0.98	87.23±0.73	34.66±3.47	86.82±1.75
	1.25	65.74±2.97	81.98±4.82	20.10±2.66	48.89±1.84	69.24±3.18	69.76±5.01	33.07±1.76	79.89±4.93
Tv	2.5	66.33±1.31	39.43±2.12	0.00±0.00	0.00±0.00	69.77±2.91	51.40±1.46	18.26±0.99	69.62±2.40
	0.156	19.58±4.68	98.21±2.20	15.14±1.33	57.34±2.63	26.98±3.42	97.51±2.55	35.58±1.42	99.25±3.87
	0.312	22.22±3.78	88.94±3.42	9.94±0.77	57.36±6.85	29.37±5.06	99.89±1.21	37.50±1.22	92.36±5.98
Dq	0.625	25.40±2.80	93.48±2.27	0.00±0.00	72.94±5.50	30.95±4.02	99.41±2.94	42.79±1.51	91.96±3.52
	1.25	27.78±3.01	99.71±0.68	0.00±0.00	35.48±2.75	32.54±2.11	98.55±47.89	25.00±0.80	86.78±3.11
	2.5	28.57±3.64	92.35±1.09	0.00±0.00	0.00±0.00	26.98±2.93	47.89±1.66	0.96±0.32	58.69±5.19
Am	0.156	18.72±2.76	87.98±3.20	9.92±2.49	0.00±0.00	25.55±1.93	88.14±1.66	47.57±3.03	98.80±3.88
	0.312	27.60±3.07	84.80±2.08	19.51±1.57	0.00±0.00	27.60±1.87	73.69±4.55	49.60±1.28	83.51±2.86
	0.625	34.77±1.27	77.37±2.39	43.14±2.53	0.00±0.00	39.89±3.19	67.79±2.79	51.08±2.16	61.48±2.60
Pib	1.25	36.48±2.31	73.00±1.42	53.73±4.09	0.00±0.00	39.21±4.78	49.81±4.72	53.23±2.49	0.00±0.00
	2.5	39.21±1.06	41.64±1.61	58.65±2.07	0.00±0.00	31.69±4.12	32.55±3.18	29.11±3.58	0.00±0.00
	0.156	35.62±1.20	92.13±1.16	9.69±4.20	43.38±1.33	39.98±3.20	59.58±1.97	36.74±3.82	59.53±3.91
Gl	0.312	44.35±1.80	88.91±1.16	27.59±2.06	57.03±1.30	30.71±1.74	79.54±3.99	38.41±3.54	61.55±0.81
	0.625	45.44±1.80	87.05±1.63	30.71±2.62	60.14±3.56	30.89±2.01	86.69±2.38	38.96±2.28	73.12±2.57
	1.25	46.71±2.44	74.68±2.68	40.90±2.42	74.90±4.55	32.89±1.50	90.96±1.38	40.35±4.06	83.27±3.18
Fh	2.5	55.26±2.78	56.64±1.62	3.03±1.43	64.45±0.89	25.25±1.21	11.56±1.08	46.45±3.39	88.25±3.55
	0.156	33.33±1.99	59.79±0.77	0.00±0.00	67.80±6.73	48.80±3.80	67.52±2.09	16.55±2.05	85.58±2.45
	0.312	37.60±2.29	63.88±1.25	0.00±0.00	65.95±4.71	49.87±2.40	69.45±2.78	14.63±2.50	81.89±2.91
Pib	0.625	41.87±2.35	64.81±4.55	0.00±0.00	60.70±3.73	58.40±3.52	32.11±1.96	7.43±3.26	79.93±1.90
	1.25	44.80±1.63	82.15±3.83	0.00±0.00	27.63±1.34	61.07±1.85	10.89±3.24	3.60±2.34	67.43±2.02
	2.5	45.60±3.91	30.3±4.82	0.00±0.00	0.00±0.00	53.96±1.85	0.00±0.00	0.00±0.00	0.00±0.00
Gl	0.156	32.73±3.44	56.63±2.31	0.00±0.00	0.00±0.00	40.46±4.96	59.31±4.06	20.69±5.02	52.10±4.93
	0.312	38.74±4.92	58.51±4.30	0.00±0.00	0.00±0.00	44.32±4.81	83.97±1.84	20.89±3.71	77.94±3.07
	0.625	42.18±4.68	76.79±1.60	0.00±0.00	0.00±0.00	45.61±4.32	88.05±3.23	21.84±4.20	48.53±4.93
Fh	1.25	43.32±3.72	86.16±0.95	0.00±0.00	0.00±0.00	46.18±3.02	97.14±1.01	19.16±2.08	61.40±2.47
	2.5	34.73±4.96	42.61±4.31	0.00±0.00	0.00±0.00	47.90±1.74	92.13±3.47	1.53±2.66	32.91±4.90
	0.156	28.04±1.49	43.39±3.56	2.22±0.98	0.00±0.00	25.89±2.10	58.45±4.87	17.26±0.80	53.52±0.91
Pib	0.312	39.73±4.71	64.16±0.79	0.00±0.00	0.00±0.00	26.20±2.67	84.74±1.99	15.56±1.33	87.69±1.23
	0.625	44.24±2.76	55.90±0.9	0.00±0.00	0.00±0.00	32.96±1.87	58.63±2.19	13.50±1.75	79.01±2.02
	1.25	50.49±2.35	46.10±3.40	0.00±0.00	54.92±2.10	40.75±3.87	33.07±1.37	4.27±0.66	84.04±4.75
Fh	2.5	50.80±2.93	33.45±3.34	0.00±0.00	54.30±5.30	46.49±2.42	0.00±0.00	0.00±0.00	86.00±5.97
	0.156	9.72±0.92	67.13±3.15	0.00±0.00	28.64±1.78	15.08±3.84	74.6±3.64	17.16±4.32	74.30±0.48
	0.312	27.92±1.89	76.11±2.42	0.00±0.00	34.57±4.75	16.50±2.92	77.07±2.76	17.16±1.72	85.89±1.53
Fh	0.625	27.56±4.57	67.23±3.17	0.00±0.00	0.00±0.00	17.22±2.64	79.52±1.48	12.04±1.79	79.41±0.68
	1.25	32.91±1.07	28.44±2.96	0.00±0.00	0.00±0.00	25.78±2.89	69.37±1.87	14.37±2.37	64.94±1.59
	2.5	33.87±4.00	0.00±0.00	0.00±0.00	0.00±0.00	26.49±3.05	28.97±2.36	0.00±0.00	0.00±0.00

All experiments were done in four repetitions and the results are presented as the mean values ± standard deviations

Table S3. Elements of matrix W_1 and vector B_1 (presented in the bias row), for ANN model

Input variables	1	2	3	4	5	6	7	8	9
Conc	-0.553	-0.051	-0.746	-0.476	-0.616	0.190	-2.740	-0.684	-0.717
Bact (<i>L. monocytogenes</i>)	0.163	1.556	1.060	0.723	1.474	1.662	2.053	2.620	2.203
Bact (<i>S. enteritidis</i>)	-1.146	-1.419	-1.203	-0.256	-2.744	-0.517	-0.177	-1.383	-2.630
Funghi (Aa)	0.373	-0.565	2.028	-0.462	0.712	-0.199	-1.013	0.721	-1.090
Funghi (Am)	0.011	0.115	0.114	0.727	-0.938	0.302	-0.149	-0.720	-0.674
Funghi (As)	0.253	-0.709	0.068	0.779	-0.814	2.209	0.187	-0.198	-0.876
Funghi (Be)	0.932	0.429	0.685	-0.226	0.076	0.209	-0.477	-1.086	-0.582
Funghi (Cc)	-0.108	-1.808	-1.015	0.361	-2.253	-0.574	-1.101	-0.522	-0.368
Funghi (Cg)	0.986	-0.796	0.098	-0.003	-0.307	-1.918	-0.751	-0.573	1.358
Funghi (Chc)	0.662	-0.202	-0.473	-0.493	-0.346	-0.088	-0.021	0.189	0.012
Funghi (Dq)	-0.608	-0.677	-0.316	0.711	0.421	1.488	2.359	0.973	-0.985
Funghi (Fh)	-2.230	-0.107	-0.192	-0.288	0.635	-0.860	-0.689	-0.268	-1.042
Funghi (Fp)	0.698	2.361	0.598	0.358	0.027	1.433	-0.018	-1.657	2.085
Funghi (Gl)	-2.134	-1.388	-1.071	1.461	0.237	-1.725	1.915	-0.343	-0.674
Funghi (Ga)	0.394	1.893	-1.161	-1.078	-1.005	0.870	1.158	0.138	-0.392
Funghi (Lb)	0.707	-0.125	-0.279	-0.443	1.075	0.645	0.493	1.437	-0.673
Funghi (Ls)	0.470	-0.115	-0.278	0.470	0.034	-0.872	1.870	0.399	0.553
Funghi (Mg)	-0.301	1.824	0.858	-1.234	-0.212	2.763	-2.370	-0.406	1.427
Funghi (PIB)	-0.364	-0.081	-0.015	0.792	0.263	-1.782	1.200	0.060	1.136
Funghi (Pb)	-0.767	-0.490	-0.650	-0.698	0.375	0.788	-2.222	-1.056	-0.667
Funghi (Ps)	0.454	0.414	0.397	-0.365	0.232	-0.986	1.058	1.805	0.210
Funghi (Sc)	0.772	0.587	0.992	0.587	-0.276	-0.305	0.176	-0.921	2.082
Funghi (Tv)	-1.118	-0.547	-0.534	-0.518	0.721	-0.295	0.234	3.168	-1.160
Extract (A)	0.338	0.852	-0.204	-0.045	0.365	2.176	0.602	0.364	-0.137
Extract (V)	-1.341	-0.759	0.053	0.510	-1.634	-0.963	1.295	0.863	-0.270
Bias	-1.017	0.090	-0.167	0.459	-1.232	1.146	1.875	1.236	-0.406

Table S4. Elements of matrix W_2 and vector B_2 (presented in the bias column), for ANN model

Process	1	2	3	4	5	6	7	8	9	Bias
Inhibition of adhesion	0.692	-0.356	-0.353	-0.406	-0.536	0.386	0.145	0.664	0.711	-0.220
inhibition of biofilm-forming	-0.277	-1.608	0.821	-1.178	0.430	1.168	1.435	-1.328	1.222	0.224