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SUPPLEMENTARY MATERIAL TO

Prediction of denitrification capacity of alkalotolerant bacterial isolates from soil – An artificial neural network model

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TABLE S-I. Elements of matrix W_1 and vector B_1 (presented in the bias row)

Bacterial strain	Neurons in the hidden layer								
	1	2	3	4	5	6	7	8	9
Time	–8.060	–3.056	–8.083	–240.451	–6.441	–2.886	9.583	–151.800	–61.978
P. stutzeri reference	–19.955	60.389	–1.857	–56.161	–25.190	–14.676	16.994	16.207	–43.900
I_1	76.772	–17.435	–2.983	79.016	–1.765	–125.222	105.231	–20.917	39.276
I_2	–162.681	–10.151	–153.951	–102.577	0.123	–11.508	–76.774	52.125	–131.417
I_3	74.277	–13.044	18.997	72.205	84.483	56.607	83.418	108.835	–0.721
II_1	15.216	–13.599	41.603	26.247	–41.955	95.367	8.111	50.492	31.202
II_2	52.398	–13.966	17.734	37.868	72.054	61.504	15.425	112.229	62.959
II_3	–117.950	–18.555	–16.736	–40.118	–2.991	–117.067	–97.497	–26.389	–156.557
II_4	52.764	–13.966	19.035	37.945	71.869	60.900	15.460	112.204	61.310
II_5	52.808	–13.966	18.809	37.887	71.758	61.004	15.454	112.326	61.336
II_6	–27.576	–139.406	–12.356	–38.778	–1.549	–135.303	–60.983	–56.600	–143.763
II_7	–24.658	–15.005	–9.690	–110.539	–3.757	–132.803	–95.154	–61.992	31.221
II_8	–14.326	–11.842	65.959	–40.972	4.683	93.601	25.623	115.893	–93.808
II_9	–31.590	–12.349	–33.657	–133.964	–94.737	–14.172	7.546	–17.181	–28.939
II_{10}	–83.902	23.639	–16.693	–39.724	–1.508	–10.071	–55.427	–24.630	–80.252
III_1	–24.988	77.177	–9.800	5.423	10.604	70.631	65.930	–21.692	–27.065
III_2	–124.817	–12.894	–164.926	–43.941	–31.740	–13.866	2.639	–120.724	–33.122
III_3	–18.354	–17.690	–3.122	48.193	–1.652	–50.946	115.017	–21.058	32.302
III_4	–18.151	–13.172	–2.957	–39.693	–73.207	–14.226	91.614	–23.751	32.182
III_5	–26.001	43.590	–10.819	36.295	1.446	67.259	–79.363	–22.115	1.764
III_6	–22.137	–14.377	–6.936	29.393	–2.141	–15.158	–74.231	–21.693	15.479
III_7	–27.923	–14.030	–12.703	–38.991	–1.956	–15.225	6.040	–102.740	–32.128
III_8	86.504	–19.498	–3.073	–87.146	–0.402	–31.740	10.424	3.104	–30.388
III_9	–25.396	–17.160	–10.099	–36.782	0.429	–17.259	2.260	–129.681	–31.195

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III_{10}	–22.322	5.571	–7.135	–74.942	–1.692	–4.950	–51.726	16.017	–84.161
III_{11}	101.213	–14.362	95.137	–94.960	–1.016	69.595	–33.546	–36.715	–96.027
III_{12}	–18.156	–13.264	–2.936	–39.690	–56.783	–14.298	84.796	–23.747	32.197
III_{13}	38.730	75.189	13.709	83.752	0.581	36.842	14.525	55.079	112.460
III_{14}	76.029	89.695	64.995	–12.202	–1.988	–11.879	14.043	8.869	32.893
III_{15}	89.796	36.326	–3.432	–38.570	–1.549	–14.916	18.731	–77.948	76.466
III_{16}	71.585	–14.486	74.820	81.630	1.780	–16.964	19.703	–59.707	–29.913
III_{17}	–19.770	35.900	–4.703	40.251	–0.702	–15.084	10.337	–22.885	–5.511
III_{18}	12.184	34.407	3.831	–39.798	–1.764	–9.818	12.522	–22.783	107.995
III_{19}	–18.752	–14.980	–3.546	82.925	2.960	–16.935	–104.478	–49.993	74.834
III_{20}	–24.776	–9.279	–9.584	–17.196	–93.538	–10.830	–98.788	–20.577	1.224
IV_1	64.237	46.458	–2.863	110.351	1.767	–13.184	9.672	53.704	79.575
IV_2	24.952	–72.255	64.173	94.128	94.407	47.757	7.798	114.620	101.872
IV_3	–20.172	61.938	–5.037	81.577	73.188	47.190	83.176	–21.688	34.167
IV_4	–146.296	–14.984	–111.953	–129.793	–4.073	–15.835	–39.801	–24.600	–121.207
IV_5	–30.642	–16.746	–83.525	–105.427	–36.725	–75.450	–90.584	53.528	0.287
IV_6	47.456	–14.419	69.794	114.049	89.687	63.434	14.110	55.211	35.087
IV_7	42.868	33.912	1.774	78.454	–48.024	28.999	16.475	–20.448	36.312
IV_8	–14.037	–13.601	69.951	59.425	–62.017	–13.343	14.841	–20.452	33.753
IV_9	65.218	6.964	0.320	78.267	–85.979	67.999	17.375	–20.441	63.523
IV_{10}	67.128	–14.416	77.973	84.892	99.674	40.962	14.566	74.775	7.036
Bias	26.651	16.188	11.476	38.274	1.170	16.970	–18.276	22.028	28.511

TABLE S-II. Elements of matrix W_2 and vector B_2 (presented in the bias column)

Denitrification indicator	Neurons in the hidden layer									
	1	2	3	4	5	6	7	8	9	Bias
Biomass production	80.782	–3.228	–80.304	0.441	0.013	2.628	–0.110	–0.523	–0.441	0.995
N_2 gas production	126.663	210.131	39.661	–337.403	186.352	–217.921	–181.651	–142.567	345.994	3.709
Nitrate concentration	–0.634	–0.026	0.365	–5.180	5.594	0.230	0.217	6.497	0.067	0.296
Nitrite concentration	–1.417	4.722	6.283	–7.079	3.392	–4.732	–2.010	6.514	–2.400	0.006
Nitrite formation	–263.742	–2.946	266.219	–8.670	0.519	2.982	128.980	–0.518	6.372	0.000
Ammonia formation	3.992	–0.033	–3.992	0.027	–0.005	0.035	0.005	–0.007	–0.023	0.001