

Supplementary Table S1. Sites of protease-producing bacterial isolates in Saudi Arabia screening.

Isolate No.	Source	Isolate No.	Source	Isolate No.	Source	Isolate No.	Source	Isolate No.	Source	Isolate No.	Source	Isolate No.	Source
1	Saihat farm 1	21	Anak	41	Riyadh	61	Saihat farm 2	81	Dammam Farm	101	Khobar	121	Saihat farm 3
2	Saihat farm 1	22	Anak	42	Riyadh	62	Saihat farm 2	82	Dammam Farm	102	Taif	122	Saihat farm 3
3	Saihat farm 1	23	Anak	43	Riyadh	63	Saihat farm 2	83	Dammam Farm	103	Taif	123	Saihat farm 3
4	Saihat farm 1	24	Anak	44	Riyadh	64	Saihat farm 2	84	Dammam Farm	104	Taif	124	Saihat farm 3
5	Saihat farm 1	25	Anak	45	Riyadh	65	Saihat farm 2	85	Dammam Farm	105	Taif	125	Saihat farm 3
6	Saihat farm 1	26	Anak	46	Riyadh	66	Saihat farm 2	86	Dammam Farm	106	Taif	126	Saihat farm 3
7	Saihat farm 1	27	Anak	47	Riyadh	67	Saihat farm 2	87	Dammam Farm	107	Taif	127	Saihat farm 3
8	Saihat farm 1	28	Anak	48	Riyadh	68	Saihat farm 2	88	Dammam Farm	108	Taif	128	Saihat farm 3
9	Saihat farm 1	29	Anak	49	Riyadh	69	Saihat farm 2	89	Dammam Farm	109	Taif	129	Saihat farm 3
10	Saihat farm 1	30	Anak	50	Riyadh	70	Saihat farm 2	90	Dammam Farm	110	Taif	130	Saihat farm 3
11	Jubail	31	Riyadh	51	Mecca	71	Saihat farm 2	91	Khobar	111			
12	Jubail	32	Riyadh	52	Mecca	72	Saihat farm 2	92	Khobar	112			
13	Jubail	33	Riyadh	53	Mecca	73	Saihat farm 2	93	Khobar	113			
14	Jubail	34	Riyadh	54	Mecca	74	Saihat farm 2	94	Khobar	114			
15	Jubail	35	Riyadh	55	Mecca	75	Saihat farm 2	95	Khobar	115	Taif		
16	Jubail	36	Riyadh	56	Mecca	76	Dammam Farm	96	Khobar	116	Mecca farm		
17	Jubail	37	Riyadh	57	Mecca	77	Dammam Farm	97	Khobar	117	Mecca farm		

18	Jubail	38	Riyadh	58	Mecca	78	Dammam Farm	98	Khobar	118	Mecca farm		
19	Jubail	39	Riyadh	59	Mecca	79	Dammam Farm	99	Khobar	119	Mecca farm		
20	Jubail	40	Riyadh	60	Mecca	80	Dammam Farm	100	Khobar	120	Saihat farm 3		

Supplementary Table S2. Sites of thirty-seven alkaline protease-producing bacteria in Saudi Arabia.

Isolate number	sites	Soil type
4	Saihat farm 1	Cultivated soil
9	Saihat farm 1	Cultivated soil
17	Jubail	Non cultivated soil
24	Anak	Cultivated soil
27	Anak	Cultivated soil
31	Riyadh	Non cultivated soil
37	Riyadh	Non cultivated soil
38	Riyadh	Non cultivated soil
39	Riyadh	Non cultivated soil
40	Riyadh	Non cultivated soil
41	Riyadh	Non cultivated soil
49	Riyadh	Non cultivated soil
64	Saihat farm 2	Cultivated soil
67	Saihat farm 2	Cultivated soil
68	Saihat farm 2	Cultivated soil
70	Saihat farm 2	Cultivated soil
74	Saihat farm 2	Cultivated soil
75	Saihat farm 2	Cultivated soil
77	Dammam Farm	Cultivated soil
80	Dammam Farm	Cultivated soil
81	Dammam Farm	Cultivated soil
82	Dammam Farm	Cultivated soil
84	Dammam Farm	Cultivated soil
95	Khobar	Garden
106	Taif	Cultivated soil
107	Taif	Cultivated soil
108	Taif	Cultivated soil
109	Taif	Cultivated soil
115	Taif	Cultivated soil

116	Mecca farm	Cultivated soil
117	Mecca farm	Cultivated soil
118	Mecca farm	Cultivated soil
119	Mecca farm	Cultivated soil
122	Saihat farm 3	Cultivated soil
124	Saihat farm 3	Cultivated soil
125	Saihat farm 3	Cultivated soil
126	Saihat farm 3	Cultivated soil

Supplementary Table S3. Estimates of Evolutionary Divergence between Sequences of strain *Bacillus* sp. Mar64 using *16SrDNA* gene and reference sequences using the Maximum Composite Likelihood model through MEGA11.

[illegible]

[illegible]

Supplementary Figure S1. Source localities of thirty samples for the protease-producing bacteria (ten sites on the map).



Supplementary Figure S2. The geographic coordinates, latitude, and longitude for sources of the most potent alkaline protease-producing bacterial isolates.

