



## Supplementary Material

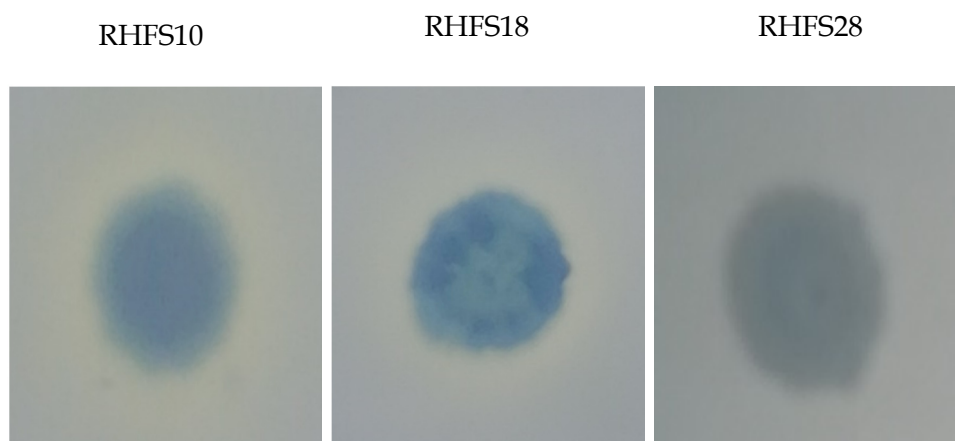
**Table S1.** Preliminary characterization of spore-forming bacteria isolated from the rhizosphere of *J. sabina* plants.

Isolate Code	Colony Color	Colony Morphology	*Anaerobic Growth	pH Range	Temperature Range (°C)
RHFS01	Creamy-white	Rhizoid	++	4–12	15–50
RHFS02	Creamy-white	Irregular	++	4–12	25–50
RHFS03	Creamy-white	Rhizoid	+++	4–12	15–60
RHFS04	Creamy-white	Punctiform	+++	4–12	15–60
RHFS05	Creamy-white	Lobate	+	4–12	15–50
RHFS06	Creamy-white	Irregular	+++	6–12	15–60
RHFS07	Brown	Circular	+++	4–12	15–60
RHFS08	Creamy-white	Filamentous	+	4–12	15–50
RHFS09	Creamy-white	Irregular	+++	2–12	15–50
RHFS10	White	Undulate	++	6–12	15–50
RHFS11	Creamy-white	Irregular	+++	4–12	15–60
RHFS12	Creamy-white	Circular	+++	4–12	15–60
RHFS13	Creamy-white	Circular	+++	2–12	15–60
RHFS14	Creamy-white	Circular	+	4–12	15–50
RHFS15	Creamy-white	Irregular	+++	4–12	15–60
RHFS16	Orange	Irregular	++	4–12	15–60
RHFS17	Translucent	Lobate	+++	4–12	15–50
RHFS18	Milky white	Filamentous	++	4–12	15–60
RHFS19	Milky white	Irregular	+++	4–12	15–60
RHFS20	Creamy-white	Undulate	++	4–12	15–40
RHFS22	Yellow	Translucent	+++	4–12	15–40
RHFS28	Creamy-white	Circular	++	4–12	15–40

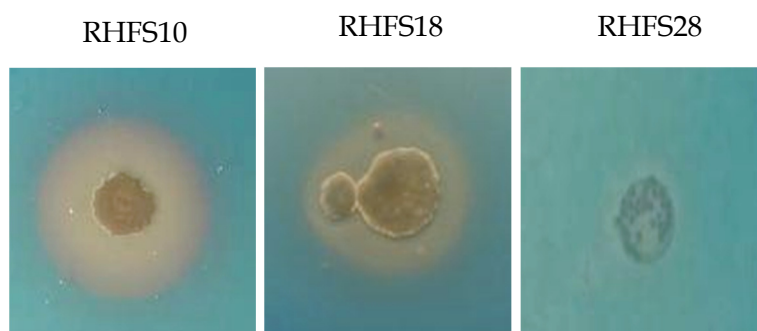
\*Anaerobic growth: +:low growth; ++:moderately growth; +++:high growth.

**Table S2.** 16S rRNA gene-based molecular identity of isolated spore-forming bacteria, their accession numbers, and strain identification is reported.

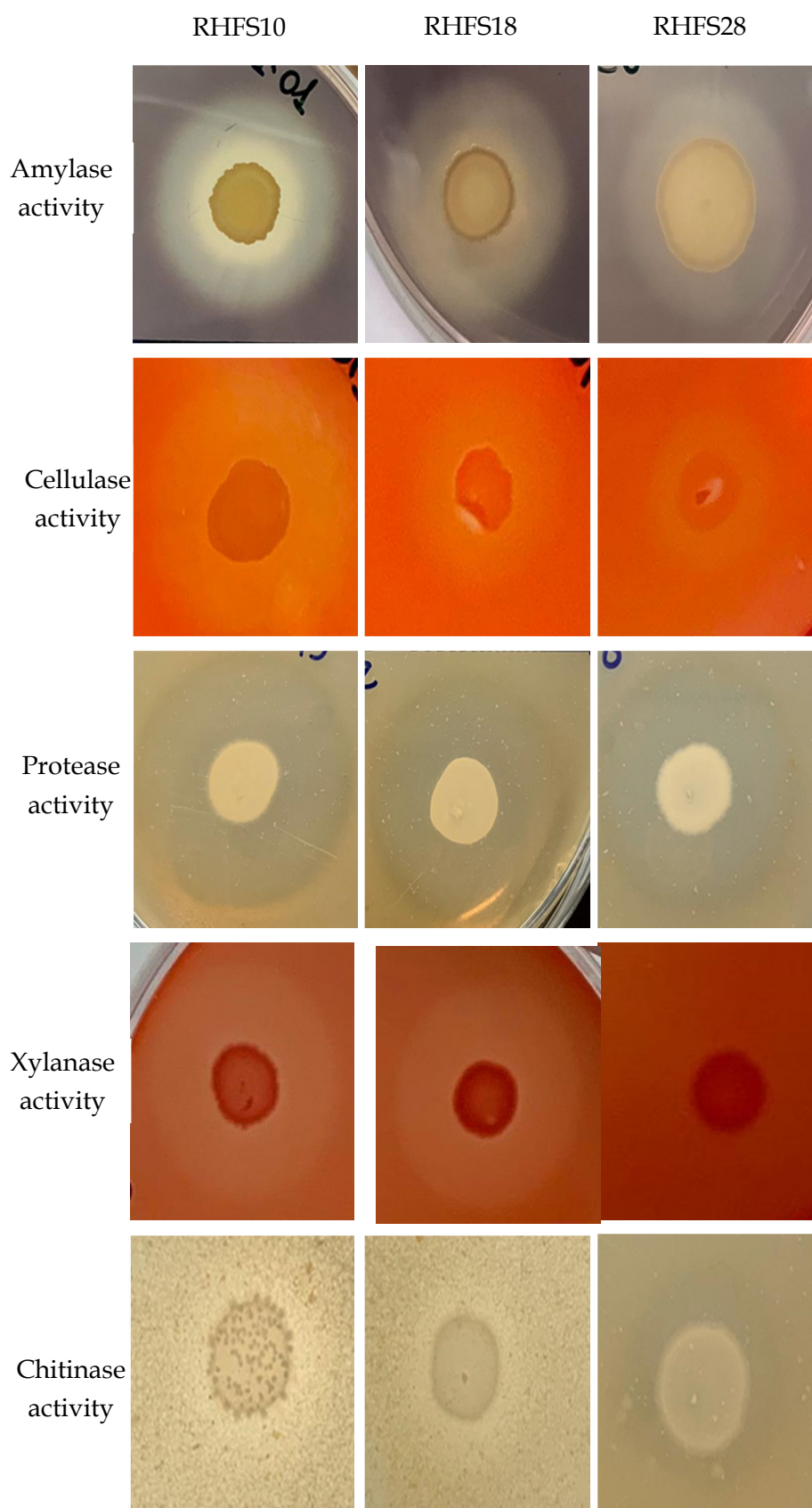
Bacteria ID	Accession number	Nearest neighbor from NCBI with Accession number	Sequence similarity (%)
RHFS1	MW678576	<i>Bacillus licheniformis</i> strain QT-98 (MT065812.1)	98.96
RHFS2	MW678577	<i>Bacillus mojavensis</i> strain YZJP308 (MN931392.1)	100.00
RHFS3	MW678578	<i>Bacillus paralicheniformis</i> strain B34-013 (MK063845.1)	100.00
RHFS4	MW678579	<i>Bacillus subtilis</i> subsp. <i>inaquosorum</i> strain ZYR10 (MN931257.1)	100.00
RHFS5	MW677571	<i>Bacillus velezensis</i> strain EMP09 (MN062933.1)	100.00
RHFS6	MW677572	<i>Bacillus halotolerans</i> strain FUM1 (MK093005.1)	100.00
RHFS7	MW678580	<i>Bacillus flexus</i> strain S6c (MT645459.1)	99.65
RHFS8	MW678581	<i>Bacillus licheniformis</i> SV12 (LC422787.1)	99.89
RHFS9	MW677573	<i>Bacillus velezensis</i> strain XC1 (MT649755.1)	99.85
RHFS10	MW678582	<i>Bacillus vallismortis</i> strain CBs8 (MK290421.1)	100.00
RHFS11	MW678583	<i>Bacillus velezensis</i> strain GST21(MN809529.1)	100.00
RHFS12	MW678584	<i>Bacillus subtilis</i> strain HR02 (MK283755.1)	100.00
RHFS13	MW678585	<i>Bacillus tequilensis</i> strain R-QL-48-26(MT078639.1)	100.00
RHFS14	MW678586	<i>Bacillus subtilis</i> strain R47 (MH359177.1)	90.19
RHFS15	MW678587	<i>Bacillus velezensis</i> strain 1601 (MW242869.1)	100.00
RHFS16	MW678588	<i>Bacillus toyonensis</i> strain IBB-TEB3(MT573517.1)	100.00
RHFS17	MW678589	<i>Bacillus amyloliquefaciens</i> strain NO10 (MT377854.1)	100.00
RHFS18	MW678590	<i>Bacillus amyloliquefaciens</i> strain S8TS (MK729078.1)	100.00
RHFS19	MW677570	<i>Bacillus paralicheniformis</i> strain AJVR1(MT459810.1)	100.00
RHFS20	MW678591	<i>Bacillus proteoliticus</i> strain 1372 (MT573794.1)	100.00
RHFS22	MW678592	<i>Bacillus tequilensis</i> strain CFR01 (MT641220.1)	100.00
RHFS28	MW678593	<i>Bacillus cereus</i> strain F3-1-38 (KX350019.1)	100.00



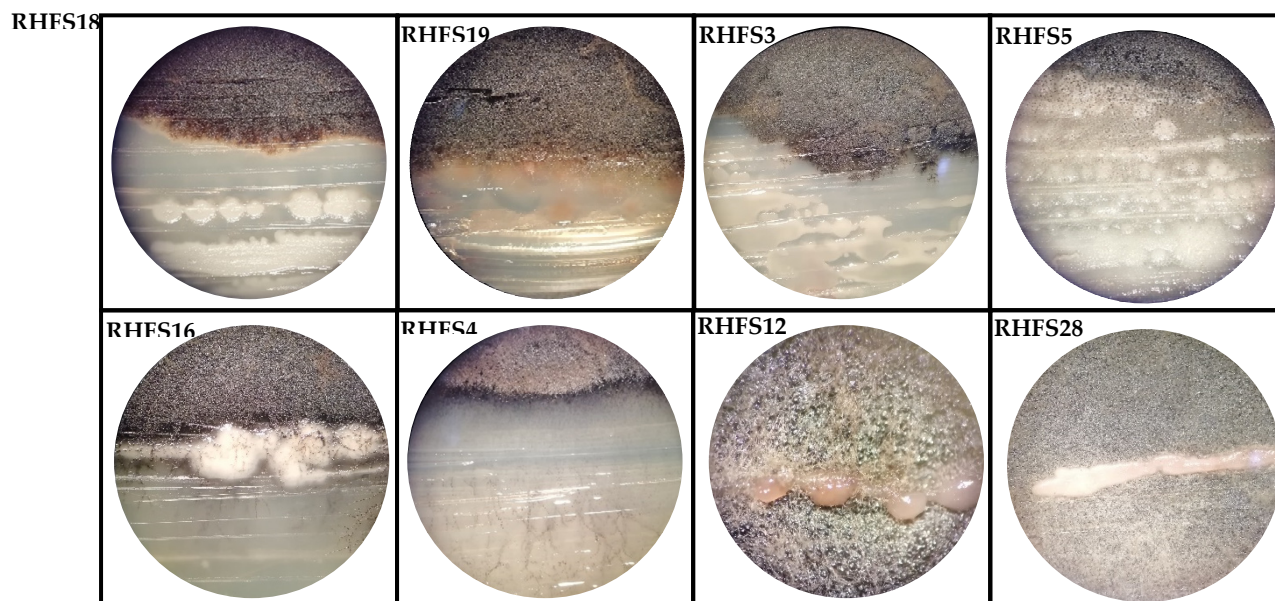
**Figure S1.** Potential plant growth-promoting traits of selected bacterial isolates. The ability to solubilize inorganic phosphate was assessed by growing the bacterial isolates on the Pikovskaya agar assay [30]. The experiment was performed in triplicate with three independent trials.



**Figure S2.** Potential plant growth-promoting traits of selected bacterial isolates. Siderophore production was assessed through O-CAS assay method [31]. The experiment was performed in triplicate with three independent trials.



**Figure S3.** Hydrolytic activities of selected bacterial isolates [33–39]. The experiment was performed in triplicate with three independent trials.



**Figure S4.** Preliminary dual-culture assay. The figure shows other examples of spore-forming bacteria isolated from the rhizosphere of *J.sabina* plants tested against *M. phaseolina* with antifungal activity (RHFS18, RHFS19, RHFS3, RHFS5, RHFS16, and RHFS4) and examples of bacteria not able to inhibit the fungal growth (RHFS12 and RHFS28). All plates were observed under a stereoscopic microscope (10× magnification) [40].